17. DECISION MAKING

This chapter deals with questions in which you have to decide upon the course of action to be taken upon a candidate who has applied for a vacancy or allotment or membership to an institution, keeping in mind the essential requisites and the data given for the candidate.

TYPE 1

In this type of test, a vacancy is declared. The necessary qualifications required in the candidates coming up to fill the vacancy are provided and the merits of the candidates mentioned. The decision about each candidate has to be made from amongst the five choices named (*a*), (*b*), (*c*), (*d*), (*e*) which state the courses of action to be taken as per the candidate's potentials.

Example : ***Study the following information carefully and answer the questions given below it.***

Following are the qualifications necessary for the recruitment of a Librarian in a State University.

The candidate must :

(1) have a Master's degree in Library Science with at least 55% marks or its equivalent grade and a consistently good academic record.

(2) have one year specialisation in an area of Information Technology/Archives and Manuscript-keeping Master's Degree in an area of thrust in the institution.

(3) have at least ten years' experience as a Deputy Librarian in a University.

(4) bear an evidence of innovative library service and organisation of published work.

In the case of a candidate who :

(5) has a 15 years' experience as a College Librarian, the case may be referred to the Vice Chancellor.

(6) has obtained less than 55% marks in Library Science but has 13 years' experience as a Deputy Librarian in a University, the case may be referred to the Registrar of the University for his consideration.

(7) has M.Phil/Ph.D. degree in Library Science/Information Science/Documentation/ Archives and Manuscript-keeping but has only ten years' experience as a College Librarian, the condition at (1) may be waived.

Based on the above conditions and the information provided against each of the candidates in the questions given below, decide which of the following courses of action should be taken against each candidate.

Mark answer (a) if the candidate is to be selected; (b) if the candidate is not to be selected; (c) if the data are inadequate; (d) if the case is to be referred to the Registrar and (e) if the case is to be referred to the Vice Chancellor.

1. Amit Sharma having Master's Degree in Library Science with 70% marks and with one year specialisation in an area of Information Technology joined as a

Librarian in the Indian College on 22nd January, 1977. He also holds a certificate of innovative library service in the college.

2. Rahul Sehgal, an M.Phil in Library Science has been a Deputy Librarian in the Rohilkhand University since 27th August, 1980. He also bears Master's Degree in Archives and Manuscript-keeping. He holds the evidence of innovative organisation of published work of the college students doing Ph.D.
3. Sanjay Verma has been a Deputy Librarian in the IMS University since 1973. He holds an evidence of contributing library service in the same institution. He has a Master's Degree in Library Science with 53% marks.
4. Ramesh Singhania holding a Ph.D. degree in Library Science has one year specialisation in Archives and Manuscript-keeping. He has been a Deputy Librarian in the Assam University since 11th April, 1982. He also bears a certificate of innovative library service in a public library for three years.
5. Sunil Garewal has been a College Librarian since 15th December, 1975. He holds an M.Phil Degree in Library Science.

Solution :

1. Clearly, the candidate Amit Sharma fulfils conditions (1), (2) and (4) evidently. Further, being a College Librarian for 16 years, he satisfies condition (5). So, the answer is (*e*).
2. Rahul Sehgal, being an M.Phil satisfies condition (7) so that condition at (1) is waived. Then, he satisfies conditions (2), (3) and (4) evidently. So, he is selected and the answer is (*a*).
3. Candidate satisfies condition (4) evidently. Being a Deputy Librarian for last 25 years, he satisfies condition (3). But having marks less than 55%, he violates the condition (1) and so the answer is (*b*).
4. The candidate, being a Ph.D. satisfies condition (7) so that condition at (1) is waived. He satisfies conditions (2) and (4) evidently and being a Deputy Librarian for 16 years, he satisfies condition (3). So, the answer is (*a*).
5. Here, informations on the candidates regarding (2) and (4) are not mentioned. So, the answer is (*c*).

EXERCISE 17A

Directions (*Questions 1 to 5*) : *Read the following information to answer the given questions :* **(S.B.I.P.O. 1997)**

Following are the criteria for selecting a marketing officer by a company.

The candidate must :

(1) be a graduate with at least 50% marks.

(2) have secured at least 40% marks in the written test.

(3) not be less than 24 years and more than 29 years as on 10th October, 1997.

(4) should have work experience of at least two years as an officer.

However, if a candidate :

(5) fulfils all other criteria except at (4) above but has a diploma in Marketing Management, his/her case is to be referred to General Manager, Marketing.

(6) fulfils all other criteria except at (3) above but has worked as Marketing Officer at least for three years, his/her case is to be referred to Director, Marketing.

Based on the above criteria and the information given in each of the following questions, you have to take the decision in regard to each case. You are not to assume anything. These cases are given to you as on 10th October, 1997.

Mark answer (a) if the candidate is to be appointed; mark answer (b) if the candidate is not to be appointed; mark answer (c) if the data given are not sufficient to take decision; mark answer (d) if to be referred to General Manager — Marketing; and mark answer (e) if to be referred to Director — Marketing.

1. Amit Khanna, born on 5th June, 1973, has done his post-graduation in Marketing Management with first class. He has secured 50% marks in the written test. He has been working in an organisation as a Marketing Officer for the last four years.
2. Rohit Verma has been working in an organisation as Officer for the last ten years. His date of birth is 17th February, 1964. He has secured 60% marks in the degree examination and 40% marks in the written test.
3. Manju Sharma is a first class graduate and has done a diploma in Marketing Management. She has secured 50% marks in the written test. She was 23 years old as on 5th September, 1996.
4. Nitin Narang was born on 25th August, 1975. He has secured 60% and 50% marks in graduation and in the written test, respectively. He has been working in an organisation as Officer for the last four years.
5. Suman Malhotra is a graduate with first class and has secured 60% marks in the written test. She has been working as an Officer for the last three years. She was born on 20th May, 1972.

Directions (*Questions 6 to 15*) : *Study the following information carefully and answer the questions given below it :*

Following are the criteria for allotment of residential accommodation by an organisation to its employees.

The employee must :

(1) have completed at least 10 years in this unit of the organisation out of which at least 4 years in the supervisory cadre.

(2) not have more than five members in the family.

(3) have at least 5 years of service remaining, the retirement age being 58 years.

(4) not have his/her own house.

(5) not be staying in a house owned by his/her spouse.

In the case of an employee who :

(6) satisfies all other criteria except at (1) above and joined the organisation as a Manager, should be referred to the Director, Finance.

(7) satisfies all other criteria except at (3) above at present working as a Senior Manager, is to be referred to the Managing Director.

(8) has been transferred from another city, the condition (1) may be waived.

Based on the above criteria and on the basis of the information provided in case of each employee in each of the following questions, you have to decide whether or not, accommodation is to be provided or the case is to be referred to higher authority. You are not to assume anything. All the cases are presented before you as on 31st July, 1996.

Mark answer (a) if the employee is to be provided with accommodation; mark answer (b) if the employee is not to be provided with accommodation; mark answer (c) if the complete information as regards all the above criteria are not provided in the question; mark answer (d) if the case is to be referred to the Director, Finance; mark answer (e) if the case is to be referred to the Managing Director.

6. Deepak Aggarwal has joined the organisation four years back as an Officer. He stays with his wife and two children. Neither he nor his wife owns a house.

7. Vishal Agnihotri joined the organisation as a Manager in 1990 and was 30 years old as on 15th August, 1993. He has four members in his family. Neither he nor his wife owns a house.

8. Dev Kohli stays in a rented house with his wife and three children. His date of birth is 12th July, 1949. He has been working in the organisation for the last twelve years out of which five years as a Manager.

9. Sumit Nijhawan has recently been transferred from another office and was 53 years old as on 6th February, 1996. He has been working in the organisation for the last twenty years out of which ten years as a Manager. There are four members in his family. Neither he nor his wife owns a house.

10. Sanjay Kumar has three members including himself in the family. Neither he nor his wife owns a house. He is a Senior Manager for the last four years and has been working in the organisation for the last twelve years. He will be retiring from the organisation in the year 2002.

11. Geeta Mathur joined the organisation in 1979 when she was twenty-eight years old as an Officer. She is unmarried and stays with her mother in a rented house. She does not own a house.

12. Rakesh Jain has been working in the organisation for the last eight years out of which five years as an Officer. He was 52 years old as on 5th May, 1994. He stays with his wife and one son. Neither he nor his wife owns a house.

13. Madhu Jindal was promoted as a Supervisor five years back after joining the organisation in 1983 as a clerk. She stays with her husband and two children in a rented house and she does not own any house. She was 42 years old as on 23rd April, 1995.

14. Nikunj Bansal has been working in this unit for the last 15 years and has one son and two daughters along with his wife in the family. Neither he nor his wife owns a house. His date of birth is 12th January, 1954.

15. Pratibha Sinha has been working in the organisation for the last ten years out of which five years as an Officer. Her date of birth is 18th June, 1944. She stays with her husband and three children. Neither she nor her husband owns a house.

Directions (*Questions 16 to 25*) : *Study the following information carefully and answer the questions given below it.*

Following are the conditions to appoint a Distributor for petroleum gas throughout Delhi :

The applicant should —

(1) be an Indian by nationality.

(2) be in the age group of 21-50 years on 5th September, 1997.

(3) be minimum Matriculate or recognised equivalent.

(4) be a resident of Delhi for not less than 5 years immediately preceding the date of application.

(5) have family income of not more than Rs. 50,000 annually.

(6) not have any dealership in any oil company.

(7) have no close relatives as a dealer/distributor of any oil company.

However,

(8) restrictions relating to annual income, would not be applicable to persons working in corporations, owned or controlled by State government, but the case shall be referred to the Managing Director.

(9) for unemployed graduates, conditions at (6) and (7) may be waived.

(10) if a person belongs to SC/ST but is not a resident of Delhi, the case may be referred to the Chairman.

On the basis of the above conditions and the informations provided against each applicant, decide which of the following courses of action should be taken.

Mark answer (a) if the applicant is selected; (b) if the candidate is not selected; (c) if the data is inadequate; (d) if the case is to be referred to the Managing Director and (e) if the case is to be referred to the Chairman.

16. Amandeep is an unemployed graduate who has been living in Delhi since 1987. He is a citizen of India and his date of birth is 2nd February, 1974. His father is the only earner in the family drawing Rs. 800 per month.

17. Raju Narayan is a matriculate who has been living in Delhi since August 1992. He was born on 7th November, 1957. His family income is less than Rs. 25,000 per annum and he has no close relatives as a dealer of any oil company.

18. Kishen Gopal born on 22nd January, 1967 is an Indian by nationality. He is a matriculate having dealership in Tamsha Oil Company. His family income is Rs. 21,000 per annum and he is a resident of Delhi since 1978. He has no close relatives as dealer/distributor in any oil company.

19. Balvinder Singh working in the State Corporation is an Indian by nationality and is 23 years of age. He is a graduate and his family income is Rs. 60,000 per annum. He has been in Delhi for 7 years. He does not himself nor has any of his relatives working as distributor or dealer in any oil company.

20. Parvesh Kaur, an Indian born in 1974, is an Intermediate staying in Delhi since 1983. He does not hold any dealership in any oil company and the income of his mother, the sole earner, is not more than Rs. 500 per month.

21. Chaluka, an Indian resident of Mumbai, is a matriculate with a family income of Rs. 20,000 per annum. His date of birth is 15.3.76. He does not have any dealership is any oil company nor has any close relative as dealer or distributor. He is an SC candidate.

22. 27 years old Indian, Naresh Saini is an unemployed graduate and a resident of Delhi since 1988. He has a family income of Rs. 16,000 per annum.

23. Pran Chaturvedi working in Haryana State Corporation, has been living in Delhi for 5 years and has passed Senior Secondary. He is a citizen of India born on 13th June, 1973. His family's annual income is Rs. 75,000. Neither he nor any of his relatives has a dealership or distributorship of any oil company.

24. Maninder Vohra, aged 33 years, is an unemployed graduate and an Indian by nationality. His family income is Rs. 55,000 annually and he has been living in Delhi for 12 years now.

25. Prashant Kohli, an Indian citizen, has no dealership in any oil company nor has any close relatives doing the same job. His family income is Rs. 1,500 per month.

Directions (*Questions 26 to 35*) : *Read the following information carefully and answer the questions based on the given information.* **(Bank P.O. 1994)**

Following are the criterion for admitting a student in a Medical course.

The student must —

(1) have passed XIIth Std. Science examination with Biology and have secured at least 60% marks.

(2) be of 18 years of age as on September 1, 1994.

(3) have obtained 70% marks in the entrance test.

(4) be able to pay Rs. 20,000 at the time of admission.

In the case of a candidate, who satisfies all other criterion except at :

(5) (3) above, but has obtained 90% marks in the XIIth Std. Science examination, should be referred to the Principal.

(6) (4) above, but can pay Rs. 10,000 at the time of admission, can be provisionally admitted.

You are given the following cases as on September 1, 1994. Depending upon the information provided in each case and based on the criterion mentioned above, recommend your decision. You are not to assume anything.

Give answer (a) if the student is to be admitted, (b) if the student is not to be admitted; (c) if the student is to be referred to the Principal; (d) if the student is to be admitted provisionally, and give answer (e) if the data are inadequate.

26. Ashok Garg was born on 3rd October, 1973. He has secured 90% marks in the XIIth Std. Science examination with Biology and 60% marks in the entrance test. He can pay the admission fees of Rs. 20,000.

27. Vinay Kumar secured 60% marks in the XIIth Std. Science examination with Biology. He secured 75% marks in the entrance test and can pay admission fee of Rs. 15,000 at the time of admission.

28. Asha Thakur was born on 20th October, 1975. She has secured 68% marks in her XIIth Std. examination in Science with Biology and has secured 75% marks in the entrance test. She was born on 20th October, 1975. She can pay the admission fee of Rs. 20,000.

29. Pankaj Goel was 17 years old as on 11th September, 1993. He has secured 90% marks in his XIIth Std. Science examination with Biology. He has secured 75% marks in the entrance test and can pay the admission fee of Rs. 20,000.

30. Anuradha Patel has secured 70% and 80% marks in XIIth Std. and entrance test respectively. Her date of birth is 9.6.1976. She can pay the admission fee of Rs. 12,000.

31. Rakesh Yadav was born on 4th July, 1976. He has secured 80% marks in the entrance test. He has secured 85% marks in the XIIth Std. Science examination with Biology. He can pay the admission fee of Rs. 15,000.

32. Meeta Chandra has secured 70% marks in the entrance test and 60% marks in her XIIth Std. Science examination with Biology. She can pay the admission fee of Rs. 20,000 and was born on 7th November, 1978.

Directions (*Questions 33 to 42*) : *Read the following directions and answer the questions given below it :* **(Bank P.O. 1996)**

The Selection Committee of a company laid down the following criteria of selection for the post of Manager — Accounts :

(1) The candidate must be a post-graduate in Commerce.

(2) The candidate must have completed 21 years and should not be more than 35 years as on 31.7.1996.

(3) If the candidate does not satisfy the criterion in (1) above but has completed his CA examination he will referred to Director — Finance, who can allow the candidate to appear in the interview if otherwise eligible.

(4) If the candidate fulfils all the criteria mentioned in (1) and (2) above, he/she will be called for group discussion.

(5) The candidate must get 50% marks to qualify in the group discussion.

(6) If the candidate qualifies in the group discussion he/she will be called for interview.

(7) The candidate must get 30% marks in the interview (out of 50) to get finally selected.

Based on the above criteria, decide which of the following courses of action should be taken in the case of candidates described in each of the following questions.

Mark answer (a) if the candidate can be selected; mark answer (b) if the candidate is to be referred to Director — Finance; mark answer (c) if the candidate can be called for group discussion; mark answer (d) if the candidate can be called for interview; mark answer (e) if the candidate cannot be selected.

33. Mr. Das is M.Com. and his date of birth is 30.6.1961.

34. Mrs. Krishnamurthy is a qualified CA and was 25 years old on 31.7.1987.

35. Mr. Kant, a post-graduate with Commerce obtained 70% marks in group discussions and secured 20 marks in interview. He was 35 years as on 31.7.1996.

36. Mrs. Desai is a post-graduate in Economics and her date of birth is 3.4.1965.

37. Mr. Patel, a post-graduate was permitted by Director — Finance. He was born on 30.5.1963. He obtained 12 marks in interview.

38. Mr. Mathur is a Ph.D. in Commerce and was 34 years old on 1.8.1995. He obtained 14 marks in interview.

39. Mr. Roy is a Commerce graduate, has passed his CA examination and was born on 18.4.1974.

40. Mr. Subramaniam whose date of birth is 4.5.1965 is a post-graduate with Commerce and has obtained 60% marks in the interview.

41. Mr. D' Souza who was born on 4.5.1965 did M.Com. one year back, he was the top candidate in the group discussion.

42. Mr. Jagdish, a post-graduate with Commerce, born on 3.4.1962, obtained 60% marks in group discussion.

Directions (*Questions 43 to 52*) : *Read the following information carefully and answer the questions given below it.*

Following are the conditions for selecting managers by a company.

The candidate must —

(1) be a graduate in Commerce with 60% marks.

(2) have ICWA or CA as conditional qualification.

(3) have worked at least 10 years in supervisory position.

(4) not be more than 40 years as on 20.3.1993.

(5) have fluency in English and Hindi.

In the case of a candidate —

(6) who fulfils all conditions except at (1) above but has post-graduate degree with Accountancy or Economics, the case will be referred to the Finance Director.

(7) who fulfils all conditions except at (2) above but has an M.B.A. degree from a reputed management institute, the case will be referred to the Managing Director.

(8) working in the same company for the last 15 years as an accountant, the condition at (3) above may be waived but the case will have to be referred to the General Manager — Accounts for his comments.

(9) who does not provide the complete information, the application will be rejected and the candidate will not be selected even if he satisfies all other conditions.

On the basis of the above conditions and the information provided in each question below, decide which of the following courses of action should be taken against each candidate.

Mark answer (a) if the candidate is not to be selected; (b) if the candidate is to be selected; (c) if the case is to be referred to the General Manager — Accounts; (d) if the case is to be referred to the Director — Finance; and (e) if the case is to be referred to the Managing Director.

43. Madhav Singh is a first class Commerce graduate and has completed his M.B.A. course from a reputed management institute. He was 35 years old as on 18th September, 1992. He is fluent in English and Hindi. He has been working as a supervisor for the last six years.

44. Vandana Yadav is a Commerce graduate with 68% marks. She was 34 years old as on 5th January, 1993. She is fluent in Hindi and English and also is a Chartered Accountant. She has been working in an organisation as a supervisor for the last 16 years.

45. Umesh Gupta has achieved M.B.A. degree from Delhi and has done graduation in Commerce with 70% marks, but is not a CA. His date of birth is 13th February,

1953. He has achieved fluency in English and Hindi and has been working as supervisor in the Yamu Plastic Company since 1976.

46. Atul Mehta is a CA and a graduate in Commerce with 63% marks. He is fluent in English and Hindi and has been working as a senior accountant in the same company since 1970. He is 32 years of age.

47. Aarti Pradhan was 39 years old on 10th February, 1992. She is a Commerce graduate with 65% marks and also has a ICWA certificate. She has been working as a supervisor for the last 12 years and she is fluent in Hindi and English.

48. Preeti Dhawan is a post-graduate in Economics with 68% marks in graduation. Her date of birth is 30th December, 1955. She is fluent in Hindi and English. She has got her ICWA certificate. She has been working as a supervisor in a large pharmaceutical organisation for the last 12 years.

49. Sameer Dewan is a Commerce graduate with second class. He was 35 years old on 10th April, 1990. He is also a CA and fluent in Hindi and English. He has been working in supervisory cadre for the last 15 years.

50. Kanak Chandra is an M.B.A. with First Class Commerce Degree. He has been working as a Deputy Manager since January, 1981. He is fluent in Hindi and English and was born on 14th July, 1952.

51. Kailash Patwardhan is a graduate in Commerce with 72% marks. He has been working as a supervisor in Prakash Fittings Ltd. since 1979. He is 42 years of age and is fluent in Hindi and English.

52. 47 year old Alok Desai has been working as General Accountant in the same company since 19th January, 1978. He is a CA and a Commerce graduate with First Class. He is fluent in English and Hindi.

Directions (*Questions 53 to 62*) : *Study the following information and answer the questions given below it :* **(Bank P.O. 1993)**

Following are the criteria for allotment of cabins in an organisation. The cabins have the following three features :

(*i*) Air-conditioned (AC)

(*ii*) Independent

(*iii*) With Ante-Room

The following criteria are followed :

(1) For being entitled for any type of cabin an employee must have completed at least 10 years of service in the organisation.

(2) His basic salary should be above Rs. 4,000.

Further —

(3) if the employee is holding the position of Senior Manager, provide Independent, AC cabin.

(4) if the employee has been in the position of Manager for the last 5 years, provide an Independent cabin.

(5) if the employee is in the position of Branch Manager or for more than 3 years has been holding the position of Senior Manager, provide an Independent, AC cabin with ante-room.

However, if —

(6) an employee has not completed 10 years of service but has at least 7 years of service and is in the position of Branch Manager, provide an Independent cabin.

(7) an employee has been Manager for less than 5 years but has completed 15 years in the organisation, should be provided Independent cabin.

The following cases are given to you as on 1.4.1993. Based on the above criteria, decide about the allotment of cabin. You are not to assume anything.

Give answer (a) if cabin is not to be provided; give answer (b) if Independent cabin is to be provided; give answer (c) if Independent, AC Cabin is to be provided; give answer (d) if Independent, AC cabin with Ante-Room is to be provided and give answer (e) if the information given is not adequate to take decision.

53. Sudhir Gopal joined the organisation in 1980. Last year he was promoted as Manager. His basic salary is Rs. 5,000.

54. Rajan Khurana joined the organisation in 1975. His basic salary is Rs. 8,200. At present he is Branch Manager.

55. Pankaj Mehta joined the organisation in 1975. He was promoted as Manager in 1990. His basic salary is Rs. 5,100.

56. Ajay Bhatnagar joined the organisation as Branch Manager, 8 years back. His basic salary is Rs. 7,000.

57. Mukesh Maheshwari joined the organisation in 1981 on the basic salary of Rs. 4,200. Last year he was promoted as Senior Manager.

58. Varun Tiwari is a very Senior Branch Manager. His basic salary is Rs. 10,000.

59. Ashok Taneja joined the organisation in 1979. He was promoted as Senior Manager in 1988. His basic salary is Rs. 6,700.

60. Vipin Chandra joined the organisation as Manager in December 1982. His basic salary is Rs. 6,300.

61. Sanjeev Rana joined the organisation in 1984. He is holding the position of Branch Manager for the last 5 years. His basic salary is Rs. 8,000.

62. Mukul Mahajan joined the organisation in 1976. He has been holding the post of Manager for the last 3 years.

ANSWERS

1. (*a*) : All conditions of eligibility are satisfied.

2. (*c*) : Condition (3) is violated but it can be waived by condition (6), which is missing.

3. (*d*) : The candidate satisfies all conditions except (4). But he fulfils condition (5) so that (4) is waived.

4. (*e*) : The candidate satisfies condition (6) instead of condition (3).

5. (*a*) : All conditions of eligibility are satisfied.

6. (*c*) : Conditions (1) and (3) are missing.

7. (*a*) : All conditions of eligibility are satisfied.

8. (*c*) : Condition (4) is missing.

9. (*b*) : Having less than 5 years of service remaining, the candidate does not satisfy condition (3).

10. (*e*) : The candidate satisfies conditions (2), (3), (4) and (5), and condition (7) instead of (1).

11. (*a*) : All conditions of eligibility are satisfied.

12. (*b*) : Conditions (1) and (3) are not satisfied.

13. (*a*) : All conditions of eligibility are satisfied.

14. (*c*) : Condition (1) is missing.

15. (*a*) : All conditions of eligibility are satisfied.

16. (*a*) : The candidate satisfies all conditions except (6) and (7). But he fulfils condition (9) so that (6) and (7) are waived.

17. (*c*) : Condition (1) is missing.

18. (*b*) : Having dealership in an oil company, the candidate does not satisfy condition (6).

19. (*d*) : Condition (8) is fulfilled instead of condition (5).

20. (*c*) : Condition (7) is missing.

21. (*e*) : Condition (10) is satisfied instead of condition (4).

22. (*a*) : All conditions of eligibility and condition (9) instead of conditions (6) and (7) are satisfied.

23. (*d*) : The candidate satisfies condition (8) instead of condition (5).

24. (*b*) : Having a family income of more than Rs. 50,000 despite not working in a State Corporation, the candidate does not satisfy condition (5).

25. (*c*) : The age of the candidate is not mentioned.

26. (*c*) : The candidate satisfies condition (5) instead of condition (3).

27. (*e*) : The age of the candidate is not mentioned.

28. (*a*) : All conditions of eligibility are satisfied.

29. (*b*) : Being less than 18 years old on 1st September, 1994, the candidate does not satisfy condition (2).

30. (*e*) : Whether the candidate had Biology in XIIth Std. or not is not mentioned.

31. (*d*) : The candidate satisfies condition (6) instead of condition (4).

32. (*b*) : The candidate does not satisfy condition (2).

33. (*e*) : The candidate does not satisfy condition (2).

34. (*b*) : The candidate satisfies condition (2) and condition (3) instead of condition (1).

35. (*a*) : The candidate satisfies all conditions of selection.

36. (*e*) : Condition (1) is not satisfied.

37. (*e*) : Getting 24% marks in interview, the candidate does not satisfy condition (7).

38. (*e*) : Getting 28% marks in interview, the candidate does not satisfy condition (7).

39. (*b*) : The candidate satisfies condition (2), and condition (3) instead of condition (1).

40. (*a*) : The candidate has passed the interview. This means that he satisfies all conditions for selection.

41. (*d*) : The candidate satisfies conditions (1) and (2) and has qualified in group discussion. So, by condition (6), he can be called for interview.

42. (*d*) : The candidate satisfies conditions (1) and (2) and has qualified in group discussion.

43. (*a*) : Condition (3) is not satisfied.

44. (*b*) : All the conditions of eligibility are satisfied.

45. (*e*) : Being an M.B.A. but not a CA, the candidate satisfies condition (7) but not condition (2).

46. (*c*) : Condition (8) is satisfied instead of condition (3).

47. (*b*) : Candidate satisfies all the five conditions required for selection.

48. (*d*) : Being a post-graduate in Economics, the candidate satisfies condition (6) instead of condition (1).

49. (*a*) : Being a Commerce graduate in second class (less than 60% marks) condition (1) is not fulfilled.

50. (*e*) : Being an M.B.A. and not a CA, the candidate satisfies condition (7) instead of condition (2).

51. (*a*) : Being 42 years old, he does not satisfy condition (4).

52. (*c*) : Candidate satisfies condition (8) instead of condition (3).

53. (*a*) : The candidate has not been Manager for five years nor he has completed 15 years in the organisation.

54. (*d*) : The candidate satisfies conditions (1), (2) and (5).

55. (*b*) : The candidate satisfies conditions (1) and (2), and condition (7) instead of condition (4).

56. (*b*) : The candidate satisfies condition (2), and condition (6) instead of (1).

57. (*c*) : Conditions (1), (2) and (3) are satisfied.

58. (*e*) : Condition (1) is missing.

59. (*d*) : The candidate satisfies conditions (1), (2) and (5).

60. (*b*) : Conditions (1), (2) and (4) are satisfied.

61. (*b*) : The candidate satisfies condition (2), and condition (6) instead of condition (1).

62. (*e*) : Condition (2) is missing.

TYPE 2

Example : ***Read the information given below and answer the questions that follow :***

Following are the qualifications for applicants to the post of Lecturer in Rohtak University.

The candidate must —

(1) have good academic record.

(2) have at least 55% marks or an equivalent grade at Master's Degree Level in the relevant subject from an Indian University.

(3) have knowledge of Hindi/Sanskrit upto Metric standard.

(4) have cleared the eligibility test for lecturership of UGC/S.I.R. or a similar accredited state level test.

(5) have been awarded Ph.D. degree upto 13.12.95.

(6) who have passed UGC/CSIR examinations, the conditions at (4) may be waived.

(7) who will submit their Ph.D. thesis upto 31st December, 1997, the case may be referred to the Registrar.

(8) who are University appointed teachers through the regularly constituted selection committee before 1.6.96 but are not Ph.D.'s, the case may be referred to the Vice Chancellor.

On the basis of the above conditions and the information provided in each question, decide which of the suggested courses of action should be taken against each candidate and hence choose the correct alternative.

1. Mukul Mahajan with a good academic record and with 80% marks in M.Sc. from Meerut University, has cleared up eligibility test for lecturership of UGC and is a Ph.D. He has the basic knowledge of Hindi upto Metric standard.

(*a*) Select (*b*) Do not select
(*c*) Data inadequate (*d*) Refer to Registrar
(*e*) None of these

2. Narottam Singh, a Ph.D. in Geography, has good academic record and a knowledge of Sanskrit upto Metric standard. He has cleared up the CSIR test.

(*a*) Do not select (*b*) Refer to Vice-Chancellor
(*c*) Refer to Registrar (*d*) Data inadequate
(*e*) None of these

3. Manu Bhargava shall submit his Ph.D. thesis on the topic of message coding by 25th April. He has a certificate of good academic record throughout with 76% marks in M.Sc. Mathematics. He has qualified the UGC test and is well versed in Hindi.

(*a*) Refer to Registrar (*b*) Select
(*c*) Do not select (*d*) Refer to Vice-Chancellor
(*e*) None of these

4. Ajit Mishra with 60% marks in M.A. Economics is a teacher appointed by the Selection Committee. He is not yet a Ph.D. although he has a good academic record. He has qualified the UGC test for lecturership and has studied Hindi upto B.A.

(*a*) Refer to Vice-Chancellor (*b*) Data inadequate
(*c*) Do not select (*d*) Select
(*e*) None of these

5. Raja Ramaiah with 80% marks in M.A. English is also a Ph.D. He has had a good academic record and has qualified the S.I.R. test. He has studied Sanskrit upto VIIIth Std. but does not know Hindi.

(*a*) Data inadequate (*b*) Do not select
(*c*) Refer to Registrar (*d*) Refer to Vice-Chancellor
(*e*) None of these

6. Mahesh Sultan shall submit his Ph.D. thesis by August 1997. Bearing a badge of being a good student throughout, he has done his M.Sc. securing 87% marks. He has studied both Hindi and Sanskrit upto Xth Std. and has also qualified the UGC test.

(*a*) Select (*b*) Do not select
(*c*) Data inadequate (*d*) Refer to Registrar
(*e*) None of these

Solution :

1. The candidate satisfies conditions (1), (2), (3), (4) and (5) and so is eligible to be selected. Hence, the answer is (*a*).
2. Clearly, condition (2) is missing. So, the data is inadequate. Hence, the answer is (*d*).
3. The candidate satisfies conditions (1), (2), (3), (4) and (7). So, the case is to be referred to the Registrar. Hence, the answer is (*a*).
4. The candidate satisfies conditions (1), (2), (3), (4) and (8). So, the case is to be referred to the Vice-Chancellor. Hence, the answer is (*a*).
5. The candidate satisfies conditions (1), (2), (4) and (5) evidently. But having studied Sanskrit upto VIIIth Std., he does not satisfy condition (3). So, the candidate should not be selected. Hence, the answer is (*b*).
6. The candidate satisfies conditions (1), (2), (3) and (4) evidently. He is not Ph.D. but shall submit it before the prescribed date. So, condition (7) is satisfied and the case is to be referred to the Registrar. Hence, the answer is (*d*).

EXERCISE 17B

Directions (*Questions 1 to 7*) : *Read the following information carefully and answer the questions given below :* **(Bank P.O. 1997)**

Following are the conditions for allotment of flats built by Town Council in the newly developed area of city — Gurgaon.

The applicant must —

(1) produce domicile certificate of the State.

(2) be employed or self-employed in Gurgaon for a minimum of 5 years.

(3) be ready to pay the entire amount in 5 years period.

(4) not be owner or co-owner (if spouse is owner) of residential accommodation in the city limits of Gurgaon.

(5) not be less than 35 years of age as on December 31, 1996.

In the case of applicant who satisfies all other criteria except —

(6) at (1) above, be referred to the President of Town Council.

(7) at (2) above, but is ready to produce ration card for last five years, should be referred to Vice-Chairman of the House Allotment Committee.

(8) at (3) above, but is freedom-fighter or ex-serviceman or first relation *i.e.*, son/daughter/husband/wife or freedom fighters/ex-servicemen, should be referred to Chairman of House Allotment Committee who can give concession for payment upto 15 years in such cases.

The last date for receipt of application was December 31, 1996. Conditions set out in terms of age or duration of stay are to be fulfilled as on December 31, 1996.

Based on these criteria and information provided below, decide the course of action in each case. You are not to assume anything. The cases are given to you as on 1.1.1997.

1. S.C. Gupta, the son of an industrialist from other state who has set his factory in 1990, has a domicile certificate of the State. He is ready to pay the entire amount in 4 years, if required. He does not own a house in Gurgaon city limits but his wife owns a flat in Gurgaon. His date of birth is 11.11.1960.

   (*a*) Allot flat (*b*) Do not allot flat

   (*c*) Refer to President (*d*) Refer to Chairman

   (*e*) Data inadequate

2. Mrs. Swati Sen aged 45 is wife of an ex-serviceman. She has been staying in rented house in Gurgaon for last 10 years. She is having certificate of domicile of the State. She is not employed anywhere. She is ready to pay the entire amount in 10 years.

   (*a*) Refer to Vice-Chairman (*b*) Allot flat

   (*c*) Data inadequate (*d*) Do not allot flat

   (*e*) Refer to Chairman

3. Manmohan is 38 years old senior clerk in the local builder's office in Gurgaon. He has put in service of 13 years but still does not own a house. He has produced domicile certificate and is ready to pay the entire amount in 8 years. He is nephew of freedom fighter Kishenlal who stays in the nearby village.

   (*a*) Allot flat (*b*) Refer to Vice-Chairman

   (*c*) Do not allot flat (*d*) Refer to Chairman

   (*e*) Data inadequate

4. Sachin Bhalla is a young businessman, domicile of the State, was born and brought up in Gurgaon. He can pay the entire amount in less than three years, if required. He has opened his shop on his 26th birthday, *i.e.*, on 23rd February, 1989. He stays with his father but is not having any ownership rights in the house owned by his father.

   (*a*) Do not allot flat (*b*) Data inadequate

   (*c*) Allot flat (*d*) Refer to Chairman

   (*e*) Refer to Vice-Chairman

5. Ms. Uma Santosh is daughter of a renowned freedom fighter from other State. She is domiciled in the State and employed in the town council of Gurgaon for the last 6 years. She can pay the entire amount in 5 years. She has completed 34 years as on December 10, 1994. She does not own a house in Gurgaon.

   (*a*) Refer to President (*b*) Refer to Chairman

   (*c*) Do not allot flat (*d*) Allot flat

   (*e*) Data inadequate

6. Ms. Mahima Gupta is domicile of the State, a married woman of 36 years who has been running a beauty parlour in the city since 4th March, 1992. Her husband is employed in a nearby city but both of them do not own a house in Gurgaon. She can pay the entire amount in 5 years.

(*a*) Allot flat (*b*) Do not allot flat

(*c*) Refer to Chairman (*d*) Refer to Vice-Chairman

(*e*) Data inadequate

7. Yusuf Khan is an ex-serviceman who is native of Gurgaon. He stays in a rented house and is working as security officer in a factory for the last two years after his retirement from the army at the age of 35 years. He has a ration card issued to him recently. He is ready to pay the entire amount in 5 years.

(*a*) Data inadequate (*b*) Allot flat

(*c*) Do not allot flat (*d*) Refer to President

(*e*) Refer to Chairman

Directions (*Questions 8 to 17*) : *Study the information given below and answer the questions that follow :*

Following are the criteria for promotion from Grade D to E in one institute.

The employee must —

(1) be a graduate with minimum 50% marks.

(2) not be more than 45 years of age as on 10.11.1997.

(3) obtain the minimum prescribed marks in Promotion Test (PT). Minimum marks are Part A-35, Part B-25 and in Aggregate 70.

(4) have at least 10 years of service in the institute out of which at least four years should be in Grade D.

(5) not have any adverse remark in Confidential Report (C.R.).

However, if a candidate —

(6) fulfils all other criteria except that at (2) and is less than 50 years, the case may be referred to the Governing Board.

(7) fulfils all other criteria but does not have four years of service in Grade D, the case is to be referred to the Director provided the employee has obtained 120 or more marks in Aggregate in the Promotion Test.

Based on the above criteria and the information given in each of the following questions, you have to decide on the promotability of each case.

8. Kamal Ahuja joined the institute 9 years back in Grade C. After 2 years, he was promoted in Grade D with two increments. He got 76% in his graduation and was 30 years old as on 10.8.97. He has no adverse remark in his C.R.

(*a*) To be promoted (*b*) Not to be promoted

(*c*) Refer to Director (*d*) Refer to Governing Board

(*e*) Data inadequate

9. Archana Sabharwal whose date of birth is 25.8.52 is a graduate with 51% marks. There is no adverse remark in her C.R. She has obtained 40 and 30 marks in Part A and B respectively of P.T. She has served the institute for 15 years and was promoted to Grade D six years back.

(*a*) Refer to Governing Board (*b*) Data inadequate

(*c*) Refer to Director (*d*) To be promoted

(*e*) Not to be promoted

10. 30 years old Rachna Bansal has completed 11 years in the Institute and was promoted to Grade D, two years back. She is a graduate with 65% marks and has obtained 130 marks in aggregate in P.T. with 80 marks in Part A and 50 marks in Part B. She does not have any adverse remark in her C.R.

(*a*) Not to be promoted (*b*) Refer to Director
(*c*) Data inadequate (*d*) To be promoted
(*e*) Refer to Governing Board

11. Arvind Kumar who is in Grade D for the last five years is a graduate with 55% marks. He joined the institute in Grade C and was promoted after five years. He was 40 years old as on 28.4.1996 and does not have any adverse remark in his C.R. He has obtained 40 and 50 marks in Part A and B respectively of P.T.

(*a*) Data inadequate (*b*) To be promoted
(*c*) Refer to Governing Board (*d*) Refer to Director
(*e*) Not to be promoted

12. Nitin Sharma obtained 40 and 30 marks in Part A and Part B of P.T. respectively. He does not have any adverse remark in his C.R. He has completed 15 years of service out of which 6 years are in Grade D.

(*a*) To be promoted (*b*) Not to be promoted
(*c*) Refer to Director (*d*) Refer to Governing Board
(*e*) Data inadequate

13. 42 year old Manish Shrivastava, who has put in 20 years of service in the institute, was promoted to Grade D three years back. He is a Science graduate with 60% marks and has obtained 80 marks in Part A and 45 marks in Part B of P.T. and there is no adverse remark in his C.R.

(*a*) Not to be promoted (*b*) Refer to Governing Board
(*c*) Data inadequate (*d*) Refer to Director
(*e*) To be promoted

14. Mohit Khurana has obtained highest marks among all the employees in the P.T. aggregate as well as in each part. He is a graduate with 80% marks. He was 47 years old as on 6.9.97 and there is no adverse remark in his C.R. He has completed 10 years of service in Grade D.

(*a*) Refer to Governing Board (*b*) Refer to Director
(*c*) Not to be promoted (*d*) To be promoted
(*e*) Data inadequate

15. 32 year old Geeta Madhavan is a Home Science Graduate with 52% marks. She has completed 10 years of service in the institute in Grade D only. She has obtained 56% marks in Part A and 75 marks in aggregate in P.T.

(*a*) To be promoted (*b*) Not to be promoted
(*c*) Refer to Director (*d*) Refer to Governing Board
(*e*) Data inadequate

Directions (*Questions 16 to 22*) : *Read the following information to answer the given questions :*

Following are the conditions for selecting candidates for Research Fellowship :
The candidate must —

(1) be a post-graduate with minimum of 60% marks.

(2) not be more than 30 years as on 1.9.1997.

(3) have at least 3 years' research experience.

(4) have diploma in Statistics.

(5) have secured at least 55% marks in the entrance test.

(6) have finalised the topic for research.

However, in the case of a candidate who fulfils all other criteria except —

(7) (3) above but has M.Phil degree, should be given Fellowship.

(8) (4) above should be referred to Dean.

(9) (1) above but has at least 55% marks in post-graduation, should be wait-listed.

(10) (5) above but has at least 50% marks, should be referred to Chairman.

Based on these criteria and information provided below, decide the course of action in each case. You are not to assume anything. These cases are given to you as on 1.9.1997.

16. Deepak Sareen has got diploma in Statistics with 60% marks and post-graduation with 56% marks. His date of birth is 20.12.1972. He has got 1 year research experience and is still doing his M.Phil. He has secured 60% marks in the entrance examination and has also finalised the research topic.

(*a*) Grant Fellowship (*b*) Fellowship not to be granted

(*c*) Wait-list (*d*) Refer to Dean

(*e*) Data inadequate

17. Ravi Vaswani has got 5 years' research experience and has finalised the research topic. He has got 56% marks in post-graduation and 60% marks in the entrance test. His date of birth is 24.2.1970. He has also got diploma in Statistics.

(*a*) Refer to Dean (*b*) Data inadequate

(*c*) Grant Fellowship (*d*) Fellowship not to be granted

(*e*) None of these

18. Surya Tripathi has secured 65% marks in the post-graduation and has secured 5 years' research experience. He has secured 65% marks in the entrance test and has finalised the research topic. His date of birth is 11.8.1969.

(*a*) Grant Fellowship (*b*) Refer to Chairman

(*c*) Refer to Dean (*d*) Wait-list

(*e*) None of these

19. Anu Saxena is 28 years old and has got 65% marks in post-graduation and 60% marks in M.Phil. He has got 65% marks in the entrance examination and has finalised the topic for research. He also had a diploma in Statistics.

(*a*) Refer to Chairman (*b*) Refer to Dean

(*c*) Grant Fellowship (*d*) Fellowship not to be granted

(*e*) Data inadequate

20. Raj Desai is 24 years old and has got 58% marks in the entrance examination. He has secured 63% marks in his post-graduation and 55% marks in M.Phil. He has got diploma in Statistics and has also finalised the topic for research.

(*a*) Wait-list (*b*) Refer to Chairman

(*c*) Refer to Dean (*d*) Grant Fellowship

(*e*) Data inadequate

21. 26 years old Raveena Sethi is a post-graduate with 58% marks. She has got four years' research experience and has finalised the topic for research. She got 70% marks in the Diploma in Statistics and 54% marks in the entrance examination.

(*a*) Grant Fellowship (*b*) Fellowship not to be granted

(*c*) Refer to Dean (*d*) Refer to Chairman

(*e*) Data inadequate

22. 26 years old, Sulochana Trivedi is M.Phil with 60% marks. She has secured 70% marks in the entrance examination and has finalised the topic for research. She has also got diploma in Statistics.

(*a*) Refer to Chairman (*b*) Grant Fellowship

(*c*) Wait-list (*d*) Refer to Dean

(*e*) Data inadequate

Directions (*Questions 23 to 30*) : *Read the following information to answer the given questions :* **(Bank P.O. 1996)**

Following are the conditions for selecting candidates for interview for recruitment of Medical Representative for a company.

The candidate must —

(1) be a graduate in Science with Chemistry and Botany and/or Zoology.

(2) have 60% and above at S.S.C. and 50% and above at Graduation.

(3) not be more than 25 years of age as on January 1, 1997.

(4) have at least represented school/college in any inter school/college competitions.

(5) have passed in the selection test with 55% and above marks.

(6) enclose recommendation of two persons who are not his/her relatives.

However, a candidate who fulfils all other criteria except —

(7) (2) above but has passed M.Sc. in Chemistry with 60% or above marks, should be considered for wait listing for interview.

(8) (3) above should be referred to Manager — Administration.

(9) (6) above should be called to meet Manager — H.R.D.

Based on these criteria and information provided below, decide the course of action in each case. You are not to assume anything. These cases are given to you as on December 1, 1996.

23. Garima Saxena, who has been recommended by two actresses working in TV serials, is of 23 years with Master's degree in Chemistry. She has won prizes in acting in inter-University drama competitions. She has obtained more than 70% marks in S.S.C., B.Sc. (Chemistry-Botany) and selection test.

(*a*) To be called for interview (*b*) To be wait listed

(*c*) Refer to Manager — Administration (*d*) Refer to Manager — H.R.D.
(*e*) Not to be called for interview

24. Ms. Promila Chadha, born on November 19, 1974 is a post-graduate in Chemistry. At graduation she had Chemistry, Zoology and Botany. She has represented her school and college in sports and drama. Her father is a successful doctor. She has passed the selection test with 62% marks and has enclosed recommendation of President and Vice-President of Chemists' Association.

(*a*) Not to be called for interview (*b*) Data inadequate
(*c*) To be called for interview (*d*) To be wait-listed
(*e*) Meet Manager — H.R.D.

25. Kapil Singhania has done his M.Sc. Chemistry after his B.Sc. (Chemistry and Zoology). He has obtained more than 60% marks at S.S.C., B.Sc. and selection test. He has enclosed good recommendations from his coaches for Basketball and Hockey, where he has won a few prizes for his performance in inter-collegiate matches. His date of birth is 25.11.1970.

(*a*) To be wait-listed (*b*) Not to be called for interview
(*c*) To be called for interview (*d*) Refer to Manager — H.R.D.
(*e*) Refer to Manager — Administration

26. Rajeev Gupta won Inter-Collegiate Tournament for Table Tennis in 1995 while doing his final year of B.Sc. with Chemistry and Zoology. He has passed with more than 60% marks in all the examinations right from S.S.C. and in the selection test held by the Company. He has enclosed 2 good references, one from College Principal and another from an industrialist. His father works in a bank.

(*a*) Refer to Manager — H.R.D. (*b*) To be wait-listed
(*c*) To be called for interview (*d*) Data inadequate
(*e*) Not to be called for interview

27. Ashok Rathi has represented his school and college in Cricket and Chess. He has passed his B.Sc. with Chemistry, Physics, Mathematics at the age of 20 years in 1994. He came second in the merit list in the selection test with 78% and has enclosed 2 recommendations. He has scored 62% and 65% in S.S.C. and B.Sc., respectively.

(*a*) To be called for interview (*b*) To be wait-listed
(*c*) Not to be called for interview (*d*) Data inadequate
(*e*) Refer to Manager — Administration

28. Ved Prakash has done Bachelor in Pharmacy after B.Sc. with Chemistry and Zoology. Born on October 8, 1971, he won Inter-School Trophy in athletics and prizes in drama. He has been recommended by a stage artist and his Russian teacher. He has obtained more than 80% in all the examinations and has stood first in the selection test.

(*a*) Refer to Manager — H.R.D. (*b*) Refer to Manager — Administration
(*c*) To be called for interview (*d*) Data inadequate
(*e*) Not to be called for interview

29. Ms. Kirti Rana, a Kathak dancer, who has won Inter-University prizes, is a brilliant student holding first rank in M.Sc. (Chemistry) in 1996 as well as selection test. She has had more than 75% marks in the examination right from S.S.C. to B.Sc. (Chemistry-Botany). All her teachers speak highly about her.

(*a*) To be wait-listed (*b*) To be called for interview

(*c*) Data inadequate (*d*) Not to be called for interview

(*e*) Refer to Manager — H.R.D.

30. Ravinder Singh, 22, has enclosed two good recommendations. He has done B.Ed. after completing B.Sc. with 65% in Physics, Chemistry and Botany. He has been representing his school and college in wrestling at different state level competitions. He has obtained 58% marks in the selection test.

(*a*) Refer to Manager — Administration (*b*) Refer to Manager — H.R.D.

(*c*) Not to be called for interview (*d*) To be wait-listed

(*e*) Data inadequate

Directions (*Questions 31 to 38*) : *Read the following information carefully and answer the questions given below it :* **(Bank P.O. 1994)**

Following are the conditions of promotion from Junior Officer's Cadre to Senior Officer's Cadre in an organisation.

The candidate must —

(1) have completed at least 5 years in the organisation.

(2) have secured 65% marks in the written test for promotion.

(3) have secured 60% marks in the Group Discussion.

(4) have secured 70% marks in the interview.

(5) have good record of his work performance.

(6) have good communication skill and get along well with his colleagues.

(7) not be more than 40 years and less than 30 years as on 1.9.1993.

(8) have good academic record with an average of at least 65% marks.

However, in the case of a candidate who —

(9) satisfies all other conditions except (4) above but has secured 75% marks in the written test and 65% marks in the Group Discussion, the case is to be referred to the General Manager (Personnel) — GM (P) for the decision.

(10) satisfies all other criteria except (8) above but has secured an average of more than 60% marks, the case is to be referred to the Managing Director (MD) of the organisation.

Now read the information provided in the case of each candidate in each of the questions given below and decide on the basis of the information provided and based on the above conditions, which of the courses of action you would suggest. These cases are given to you as on 5.9.1993. You are not to assume anything.

31. 33 years old Renu has a good academic record with an average of 68% marks and has good communication skill. She has completed six years in the organisation. She has secured 63% marks in Group Discussion, 71% marks in interview

and 68% marks in written test for promotion. She gets along well with her colleagues and has good record of her work performance.

(*a*) Promote (*b*) Do not promote
(*c*) Refer to MD (*d*) Refer to GM (P)
(*e*) Data inadequate

32. Pooja has completed 7 years in the organisation. She is 32 years old and has good academic record with an average of 66% marks. She has good communication skill, gets along well with her colleagues and has good record of her work performance. She has secured 67% marks in Group Discussion, 74% marks in interview and 60% marks in written test for promotion.

(*a*) Refer to MD (*b*) Refer to GM (P)
(*c*) Data inadequate (*d*) Promote
(*e*) Do not promote

33. Venkatesh, who is 38 years old, has good academic record with an average of 61% marks. He has secured 65% marks in the written test for promotion, 72% marks in interview and 63% marks in Group Discussion. He has good communication skill and gets along well with his colleagues. He has good record of his work performance and has completed 7 years in the organisation.

(*a*) Do not promote (*b*) Refer to MD
(*c*) Refer to GM (P) (*d*) Promote
(*e*) Data inadequate

34. 39 years old Manish has secured 65% marks in Group Discussion, 72% marks in interview and 66% marks in written test for promotion. He has a good academic record with an average of 62% marks and has good communication skill. He gets along well with his colleagues and has good record of his work performance. He has completed 6 years in the organisation.

(*a*) Promote (*b*) Do not promote
(*c*) Refer to MD (*d*) Refer to GM (P)
(*e*) Data inadequate

35. 34 years old Madhu has secured 60% marks in written promotion test, 72% marks in interview and 69% marks in Group Discussion. She has good communication skill and gets along well with her colleagues. Her record of work performance is good and she has completed $6\frac{1}{2}$ years in the organisation.

(*a*) Do not promote (*b*) Refer to GM (P)
(*c*) Refer to MD (*d*) Promote
(*e*) Data inadequate

36. 31 years old Sumit secured 65% marks in written test for promotion, 72% marks in interview and 62% marks in Group Discussion. He has good academic record with an average of 67% marks and good communication skill. He has completed 9 years in the organisation. He gets easily annoyed and irritated with his colleagues and his record of work performance since the last two years is just average.

(*a*) Refer to MD (*b*) Refer to GM (P)
(*c*) Data inadequate (*d*) Promote
(*e*) Do not promote

37. Savita has a good academic record with an average of 67% marks and has secured 69% marks in Group Discussion, 72% marks in interview and 70% marks in written test for promotion. She has completed 7 years in the organisation. She has good record of her work performance, communication skill and gets along well with her colleagues.

(*a*) Promote (*b*) Do not promote

(*c*) Refer to GM (P) (*d*) Refer to MD

(*e*) Data inadequate

38. Tarun has completed 6 years in the organisation. He is 34 years old and has a good academic record with an average of 68% marks. He has secured 66% marks in Group Discussion, 67% marks in interview and 76% marks in the written test for promotion. He has good communication skill, gets along well with his colleagues and his work performance is good.

(*a*) Refer to MD (*b*) Refer to GM (P)

(*c*) Promote (*d*) Do not promote

(*e*) Data inadequate

ANSWERS

1. (*b*) : Condition (4) is violated.

2. (*c*) : Condition (4) is missing.

3. (*c*) : Being a far relative of a freedom fighter, the candidate will not get the benefit.

4. (*a*) : Being 33 years old, the candidate does not satisfy condition (5).

5. (*d*) : Conditions (1), (2), (3), (4) and (5) are satisfied.

6. (*b*) : Having been self-employed for less than five years, the candidate does not satisfy condition (2).

7. (*a*) : Condition (4) is missing.

8. (*b*) : Condition (4) is not fulfilled as the candidate has not had 10 years of service.

9. (*a*) : Being more than 45 years old, condition (6) is satisfied.

10. (*b*) : Having worked in Grade D for only two years but having obtained 130 marks in aggregate, condition (7) is satisfied.

11. (*b*) : All conditions are satisfied.

12. (*e*) : Conditions (1) and (2) are missing.

13. (*d*) : Condition (7) is satisfied as the candidate worked in Grade D for 3 years but obtained 125 marks in aggregate.

14. (*a*) : Being more than 45 years of age but less than 50 years, the candidate satisfies condition (6).

15. (*e*) : Condition (5) is missing.

16. (*b*) : The candidate does not satisfy condition (3) or (7).

17. (*e*) : All conditions of eligibility and condition (9) instead of (1) are satisfied. So, the candidate should be wait-listed.

18. (*c*) : The candidate satisfies condition (8).

19. (*c*) : All conditions of eligibility are satisfied.

20. (*d*) : All conditions of eligibility are satisfied.

21. (*b*) : The candidate does not satisfy condition (1).

22. (*e*) : Condition (3) is missing.

23. (*a*) : All conditions of eligibility are satisfied.

24. (*b*) : Condition (2) is missing.

25. (*e*) : The candidate satisfies condition (8) instead of (3).

26. (*d*) : Nothing about the age of the candidate is mentioned.

27. (*c*) : The candidate does not satisfy condition (1) as he passed B.Sc. with Chemistry, Physics, Maths and did not have Zoology/Botany as a subject.

28. (*b*) : The candidate does not satisfy condition (3) and so condition (8) is to be applied.

29. (*c*) : Condition (3) is missing.

30. (*e*) : Nothing about candidate's performance in S.S.C. is mentioned.

31. (*a*) : All conditions of eligibility are satisfied.

32. (*e*) : The candidate does not satisfy condition (2).

33. (*b*) : The candidate satisfies condition (10) instead of condition (8).

34. (*c*) : The candidate satisfies condition (10) instead of condition (8).

35. (*a*) : Having secured less than 65% marks in written test, the candidate does not satisfy condition (2).

36. (*e*) : The candidate does not satisfy conditions (5) and (6).

37. (*e*) : Condition (7) is missing.

38. (*b*) : The candidate satisfies condition (9) instead of condition (4).

TYPE 3

EXERCISE 17C

Directions (*Questions 1 to 10*) : *Read the following information carefully and answer the questions given below it.*

A company has following Gratuity (G) and Provident Fund (PF) rules :

(1) An employee must have completed one year's service to be eligible for either G or PF.

(2) An employee resigning or retiring or retrenched after ten years' service gets both G and PF.

(3) An employee retrenched or retiring after 5 years but before 10 years' service gets both G and PF; but that resigning during this period gets either G or PF.

(4) An employee retrenched or retiring before 5 years' service gets PF but not G; but that resigning during this period gets neither G nor PF.

However,

(5) in case an employee dies after 2 years' service, his family gets both G and PF.

(6) in case an employee was on leave without pay, such period is deducted from his total years of service and then the above rules are applied.

(7) in the case of a lady employee, if she has completed 2 years' service, two years are added to her actual service before applying the above rules, as a special consideration.

Apply the above rules to the cases described in each of the following questions and decide whether the employee is eligible for G and/or PF.

Mark answer (a) if only G can be given; (b) if only PF can be given; (c) if either G or PF can be given; (d) if both G and PF can be given and (e) if neither G nor PF can be given.

1. Mr. Augustin serving in the company for five years out of which for one year he was on leave without pay was retrenched from the service.
2. Miss Monika served for $1\frac{1}{2}$ years and was retrenched.
3. Mr. Janeja was retrenched from service after seven years.
4. Mrs. Sharma served the company for four years and resigned.
5. Mr. Basu served in the company for seven years and resigned after a prolonged illness of 3 years for which he was on leave without pay.
6. Mr. Sethi who was serving in the company for three years expired.
7. Mr. Gaur served in the company for five years and resigned from the company.
8. Mrs. Vasudevan who served in the company for three years out of which she was on leave without pay for $1\frac{1}{2}$ years, was retrenched from the service.
9. Mr. Dixit resigned from the company after 4 years of service.
10. Mrs. Rashmi served in the company for four years and was retrenched.

Directions (*Questions 11 to 20*) : *Study the following information to answer the given questions :*

The following are the criteria for organising the Training Programme of an Institute, in different hotels.

To organise the programme in Hotel Taj, the following criteria must be fulfilled :

(1) The Programme Coordinator should be of the rank of Deputy Director or Joint Director.

(2) The Programme should be in one of these areas — HRD, Advertising, Computers or Statistics.

(3) The duration of the Programme should not be more than seven days.

(4) The fee per participant should not be less than Rs. 5,000.

(5) The number of participants should be at least 50.

If all the other criteria are fulfilled except —

(6) the duration of the course is more than seven days — the programme is to be organised in Hotel Ritz.

(7) the Programme Coordinator is of the rank of Assistant Director, but the fee per participant is more than Rs. 7,000, the Programme will be organised in Hotel Taj.

(8) the number of participants being less than 50 but more than 30, the Programme will be organised in Hotel Sideways.

(9) the fee per participant is less than Rs. 5,000 but more than Rs. 3,500, the Programme should be organised in Hotel Sansy.

(10) the Programme is in other than the areas mentioned in (2) above, but the Programme Coordinator is of Joint Director level, the Programme should be organised in Hotel Sideways.

Based on the above criteria and the information provided in each question, decide about the appropriate course of action. You are not to assume anything.

Give answer (a) if the Programme is to be organised in Hotel Taj; (b) if the Programme is to be organised in Hotel Sideways; (c) if the Programme is to be organised in Hotel Ritz; (d) if the Programme is to be organised in Hotel Sansy and (e) if the data are inadequate.

11. Dr. Chetan Jain, Deputy Director is offering a programme on HRD with a total fee of Rs. 1,92,500 at the rate of Rs. 5,500 per participant. The duration of the course is five days.

12. A Training Programme on Statistics is proposed by the Deputy Director with Rs. 3,30,000 fee for 50 participants. The duration will be 8 days.

13. A Training Programme on Advertising is to be organised for 45 participants. The fee per participant is Rs. 6,000 and the duration of the course is 6 days.

14. A five days Training Programme by Joint Director is to be organised in the field of Statistics. The total fee for the Programme is Rs. 2,10,000 for 50 participants.

15. Prof. N.P. Dutta, Assistant Director, has offered four days programme for 60 participants in the area of HRD. The fee per participant is Rs. 8,000.

16. Dr. (Ms.) Veena Garg, Deputy Director of the Institute wants to organise a programme for 55 candidates with a fee of Rs. 6,000 per participant. The duration of the course is four days and it is in the area of computers.

17. Mahesh Goel, Joint Director, is an expert on Computers. He is offering five days programme on Mathematics for 60 participants. The fee per participant is Rs. 5,300.

18. Dr. Srikant Arya, Joint Director is organising five days programme on Research Methodology. The total number of participants are 60 and the fee per participant is Rs. 7,000.

19. Mr. Prashant Verma, Deputy Director has submitted a proposal to organise four days Programme on Computers. The fee per participant would be Rs. 4,000 for 60 participants.

20. A five days Training Programme for 55 participants is to be organised by Shri Jagat Sharma, Assistant Director. The fee per participant is Rs. 8,000.

Directions (*Questions 21 to 30*) : *Study the following information and answer the questions given below it.*

Following are the criteria to get employment in a pharmaceutical company.

The applicant must —

(1) have passed graduation with science subject with at least 50% marks.

(2) have completed 21 years (in case of males) and 19 years (in case of females) of age as on or before 1st August, 1993.

(3) pay deposit as follows :

Marks at Graduation	*If son / daughter of Trustee or staff*	*If not son / daughter of Trustee or staff*
75% and above	Rs. 5,000	Rs. 10,000
61% to 74%	Rs. 10,000	Rs. 20,000
60% and below	Rs. 20,000	Rs. 40,000

However,

(4) if the candidate has secured more than 90% marks at graduation, he should be referred to the Managing Director for consideration for further concession in deposit.

(5) in the case of SC/ST candidates, the deposit payable is 20% less in each of the cases above.

(6) if the candidate remits in cash the amount of deposit immediately on the date of first call, the candidate can be selected, provided he fulfils conditions (1) and (2).

(7) if on the date of first call, the amount of deposit brought by a candidate eligible as per (1) and (2) is less than the total amount required but more than 3/4th the candidate can be provisionally selected, provided he deposits the balance amount within next ten days.

(8) if on the date of first call, the amount of deposit brought is less than 3/4th but more than 1/2, the candidate eligible as per (1) and (2) can be sent to the Managing Director.

(9) if on the date of first call, the amount of deposit brought is less than 1/2, the candidate though eligible as per (1) and (2), cannot be selected.

On the basis of the above criteria, decide which of the following courses is described in each question.

Mark answer (a) if the candidate can be selected; (b) if the candidate can be provisionally selected; (c) if the candidate should be referred to the Managing Director; (d) if the candidate cannot be selected; (e) if the data provided is inadequate.

21. Venkatesh, 24 year old son of a Professor, secured only 50% marks in graduation with Literature. He can deposit the required amount and is a general category candidate.

22. Vineeta is an SC category candidate. Her date of birth is 26th January, 1973. She passed her graduation in Science with 67% marks. She can deposit Rs. 18,000.

23. Prakash Pathak is a Science Graduate with 78% marks. He is a general category candidate and the son of an IAS officer. His date of birth is 15th February, 1971. He has with him a deposit of Rs. 6,000.

24. Vimal Gupta, son of a trustee of the organisation, obtained 68% marks in B.Sc. He brings a deposit of Rs. 8,200 on the day of the first call, but intends to pay the balance within ten days. He is a general candidate and his date of birth is 2nd November, 1971.

25. Rakesh Narayan, born on 21st August, 1968 is a son of an employee working in the organisation, secured 66% marks in M.Sc. and is in a position to deposit only Rs. 2,000. He is an SC category candidate.

26. Lata Sharma, a general category candidate, is a graduate in Science with 57% marks. Her date of birth is 13th December, 1972.

27. Kishore, an SC candidate whose father is a Central Government employee, passed his graduation with Science with 60% marks. He is in a position to deposit Rs. 35,000. His date of birth is 10th July, 1970.

28. Manoj Kumar, a 22 year old general category candidate, secured 92% marks in graduation with Science. He can pay only Rs. 3,000 as deposit. He is not a son of a trustee or staff of the organisation.

29. Vinay Chauhan, an SC candidate, obtained 73% marks in graduation with Science. His date of birth is 28th April, 1971. On the date of first call, he bears a deposit of Rs. 15,000. He is not the son of a trustee of the organisation.

30. Abhinav, son of a trustee of the organisation, is a Science Graduate with 69% marks. He is 23 years of age.

Directions (*Questions 31 to 40*) : *Read the following information to answer the given questions :* **(Bank P.O. 1991)**

The following are the five subjects for the annual examination. For each subject the maximum marks are 100.

(1) English (2) Physics (3) Biology (4) Hindi (5) Mathematics

A student is declared 'pass' under the following different schemes. (A candidate may pass under more than one scheme also).

Scheme A : Secures minimum 45 marks in each subject.

Scheme B : Secures minimum 50% marks in aggregate but fails in either Hindi or English.

Scheme C : Secures minimum 80 marks in Physics and minimum 60 marks in Mathematics but fails in any one of the remaining subjects.

Scheme D : Secures minimum 60% marks in aggregate but fails in upto two subjects by maximum of only 10 marks in each of the subjects.

The information is given in the following table :

Student's Name	MARKS					Aggregate Marks
	English	Physics	Biology	Hindi	Mathematics	
Kapil	40	82	43	80	70	315
Ravi	50	45	60	65	55	275
Mohit	65	100	50	43	80	338
Neeraj	80	40	60	90	40	310
Pawan	30	85	50	90	60	315
Sumit	50	50	60	45	35	240
Nitin	90	48	50	45	35	268
Praveen	56	50	43	52	49	250
Hemant	70	75	32	90	65	332

In the given questions find out if the candidate passes or fails. If he fails the answer is (e). If he passes you have to decide under which scheme(s) the candidate is passing.

31. Mohit passes under which of the schemes ?

(*a*) C and D only (*b*) B and C only

(*c*) A only (*d*) B, C and D

(*e*) Fails

32. Ravi passes under which of the schemes ?
(*a*) A only (*b*) B only
(*c*) C only (*d*) Both A and B
(*e*) Fails

33. Nitin passes under which of the schemes ?
(*a*) A only (*b*) B only
(*c*) C only (*d*) D only (*e*) Fails

34. Kapil passes under which of the schemes ?
(*a*) B, C and D (*b*) D only (*c*) B and C only (*d*) B only (*e*) Fails

35. Which of the following is common about Pawan's and Kapil's results ?
(*a*) Both fail in English (*b*) Both fail in Biology
(*c*) Both pass under A scheme (*d*) Both pass under C scheme
(*e*) Both pass under D scheme

36. Praveen passes under which of the schemes ?
(*a*) A only (*b*) B only
(*c*) C only (*d*) Both A and B
(*e*) Fails

37. Sumit passes under which of the schemes ?
(*a*) A only (*b*) B only
(*c*) A and B only (*d*) A and C only
(*e*) Fails

38. Neeraj passes under which of the schemes ?
(*a*) A only (*b*) B only
(*c*) C only (*d*) D only
(*e*) Fails

39. Pawan passes under which of the schemes ?
(*a*) A only (*b*) B and C only
(*c*) A and C only (*d*) B, C and D
(*e*) Fails

40. Which of the following is common about Praveen's and Hemant's results ?
(*a*) Both fail (*b*) Both pass under scheme A only
(*c*) Both pass under scheme B only
(*d*) Both fail in Biology by more than 10 marks
(*e*) None of these

Directions (*Questions 41 to 50*) : *Read the following information and answer the questions given below it :* **(Bank P.O. 1996)**

In an examination there are five heads of passing, each of 100 marks :

(I) Paper 1 (II) Paper 2 (III) Paper 3 (IV) Practicals (V) Year's Work

The passing marks in each head of passing are 40 except for Practicals (IV) for which the passing marks are 50.

A candidate who fails may appear again in subsequent examination, when he can claim exemption from appearing in the heads of passing in which he has secured 10 marks more than the passing marks. A candidate who has failed in the head of passing year's work has to undergo the whole course afresh.

Upto 3 grace marks may be given in each of not more than three heads of passing. A candidate who secures more than 50% of the total marks may be given upto 5 grace marks in not more than one head of passing. In exceptional cases, the Board of Examiners may give upto 7 grace marks in not more than one head of passing. A candidate who has appeared with exemption in one or more heads of passing will not be entitled to any grace marks.

A candidate who passes with 75% or more marks at one and the same examination will be declared to have passed with distinction.

The marks obtained by candidates P, Q, R, S, T, U, V, W, X and Y are given below. In each case, give answer (a) if the candidate passes; give answer (b) if the candidate passes with Distinction; give answer (c) if the candidate has failed; give answer (d) if the candidate passes with grace marks and give answer (e) if the case needs to be referred to the Board of Examiners.

MARKS OBTAINED IN FIVE HEADS OF PASSING							
		I	II	III	IV	V	Total
41.	Candidate S	60	90	65	80	82	377
42.	Candidate T	68	80	33	60	72	313
43.	Candidate Q	43	42	45	48	46	224
44.	Candidate Y	34	66	65	67	68	300
45.	Candidate X	37	37	38	47	42	201
46.	Candidate P	45	50	43	56	40	234
47.	Candidate R	52	40	42	44	45	223
48.	Candidate V	35	55	45	58	60	253
49.	Candidate W	68	80	72	76	75	371
50.	Candidate U	39	50	54	E	E	–

Directions (*Questions 51 to 57*) : *Read the following information carefully and answer the questions that follow :* **(Bank P.O. 1996)**

Trinity Health Club gives 40 percent concession in monthly fees to those who belong to any one of the following categories :

(1) All children in the age group of 5 to 12 years who come from low income group and produce income and birth certificates.

(2) All girls/women upto 25 years of age who represent their school or college in sports and games.

(3) Unemployed married women in the age group of 35 to 50 years.

(4) Senior citizens of age 50 years and above.

(5) All physically handicapped persons who produce relevant medical certificates.

(6) All people who donate blood once a year or social workers/volunteers of registered social/cultural organisations.

(7) Servicemen/Ex-servicemen of Police/Defence Forces.

(8) Sons and daughters of donors/founder members of the Trinity Health Club.

Decide in each of the following cases whether the person is 'eligible', find out his category/ies which is/are applicable to him/her for taking this decision and indicate your answer accordingly. Do not assume any information which is not given.

51. Reena is a young married and employed lady police officer. Her husband is a captain in the army. She is a sportswoman and represents police forces in national-level competitions. She occasionally donates blood for her sick mother who is 55 years old.

(*a*) Not eligible
(*b*) Eligible (2) and (3) only
(*c*) Eligible (7) only
(*d*) Eligible (6) and (7) only
(*e*) Eligible (2), (3) and (4) only

52. Madhuri who represents her school in Badminton is the 14 year old daughter of physically handicapped parents having very low income. Her mother aged 40 years is unemployed. She has birth certificate and low income group certificate.

(*a*) Eligible (1) only
(*b*) Eligible (1), (2) and (5)
(*c*) Eligible (2) only
(*d*) Eligible (1), (2), (3) and (5) only
(*e*) Not eligible

53. Mrs. Bakshi, wife of Major Ravi Bakshi, is active in evening parties and clubs. She encourages people to donate to the Trinity Club. She is 32 years old and unemployed.

(*a*) Not eligible
(*b*) Eligible (3), (6), (7) and (8)
(*c*) Eligible (3) only
(*d*) Eligible (7) only
(*e*) Eligible (8) only

54. Dipti Naval, a college going married unemployed woman of 22 years, arranges donations for physically handicapped students. She has represented her school at the state-level elocution competition.

(*a*) Eligible (8) only
(*b*) Eligible (2), (3), (7) and (8)
(*c*) Not eligible
(*d*) Eligible (2) and (3) only
(*e*) Eligible (2) only

55. Mr. Kalekar established a registered trust for social work after his retirement from army at the age of 48 years. Since then he has been actively carrying out social work for the last eight years. His son is the founder member of "Trinity".

(*a*) Not eligible
(*b*) Eligible (4) and (6) only
(*c*) Eligible (4) only
(*d*) Eligible (4), (6) and (7)
(*e*) Eligible (4), (6), (7) and (8)

56. Shilpa, a 9 year old school girl and daughter of a merchant, has participated in dance and music competitions. Her father, who is 55 years old, has given large donations for organising blood camps. Her uncle is one of the founders of Trinity Club.

(*a*) Eligible (1), (2), (4) and (8)
(*b*) Eligible (1) only
(*c*) Eligible (2) and (8) only
(*d*) Eligible (1), (2) and (6) only
(*e*) Not eligible

57. Shweta is an 11 year old school girl who can produce her birth certificate. Her parents are senior citizens and regular blood donors. Though a medically-certified physically handicapped person, she represents her school in national competition for the physically handicapped.

(*a*) Eligible (1), (2) and (6) (*b*) Eligible (4) and (5)
(*c*) Eligible (2) and (5) only (*d*) Eligible (1), (2) and (4)
(*e*) Not eligible

ANSWERS

1. (*b*) : The employee was retrenched after 4 years of service. So, conditions (6) and (4) are to be applied to him.

2. (*b*) : Condition (4) is to be applied.

3. (*d*) : Condition (3) is to be applied.

4. (*c*) : Conditions (7) and (3) are to be applied.

5. (*e*) : Conditions (6) and (4) are to be applied.

6. (*d*) : Condition (5) is to be applied.

7. (*c*) : Condition (3) is to be applied.

8. (*b*) : Conditions (6) and (4) are to be applied.

9. (*e*) : Condition (4) is to be applied.

10. (*b*) : Condition (4) is to be applied.

11. (*b*) : Conditions (1), (2), (3), (4), (5) and (8) are satisfied.

Number of participants $= \frac{1,92,500}{5,500} = 35.$

12. (*c*) : Fee per participant $= \frac{3,30,000}{50} =$ Rs. 6,600.

Conditions (1), (2), (4), (5) and (6) are satisfied.

13. (*e*) : Condition (1) is missing.

14. (*d*) : Fee per participant $= \frac{2,10,000}{50} =$ Rs. 4,200.

Conditions (1), (2), (3), (5) and (9) are satisfied.

15. (*a*) : Conditions (1), (2), (3), (4) and (5) are satisfied.

16. (*a*) : Conditions (1), (2), (3), (4) and (5) are satisfied.

17. (*b*) : Conditions (1), (3), (4), (5) and (10) are satisfied.

18. (*b*) : Conditions (1), (3), (4), (5) and (10) are satisfied.

19. (*d*) : Conditions (1), (2), (3), (5) and (9) are satisfied.

20. (*e*) : Condition (2) is missing.

21. (*d*) : The candidate being a graduate in literature, does not satisfy condition (1).

22. (*a*) : The candidate is supposed to deposit Rs. 16,000 only as he being an SC candidate gets 20% deduction. So, all conditions of eligibility are satisfied.

23. (*c*) : The amount he has with him is more than $\frac{1}{2}$ but less than $\frac{3}{4}$th of what he is required to pay. So, condition (8) is satisfied.

24. (*b*) : As he intends to pay the balance within ten days, condition (7) is fulfilled.

25. (*d*) : The candidate does not satisfy condition (3) as he is supposed to pay Rs. 8,000.

26. (*e*) : It is not mentioned whether the candidate is a son of a trustee or not.

27. (*a*) : The candidate gets 20% deduction. He is supposed to pay Rs. 32,000 only. So, all conditions of eligibility are fulfilled.

28. (*c*) : The candidate has secured more than 90% marks. So, condition (4) is fulfilled.

29. (*b*) : The candidate satisfies condition (7), as he owns more than $\frac{1}{2}$ but less than $\frac{3}{4}$th of the required amount *i.e.*, Rs. 16,000.

30. (*e*) : The money deposit with the candidate is not mentioned.

31. (*d*) **32.** (*a*) **33.** (*e*) **34.** (*b*) **35.** (*a*) **36.** (*e*) **37.** (*e*) **38.** (*d*) **39.** (*b*) **40.** (*a*)

41. (*b*) : The candidate passes in each of the heads with more than 75% marks in II, IV and V.

42. (*e*) : The candidate requires 7 grace marks to pass in (III).

43. (*d*) : The candidate passes when awarded 2 grace marks in (IV).

44. (*e*) : The candidate requires 6 grace marks in (I).

45. (*c*) : The candidate requires 3 grace marks in (I), (II) and (IV) and 2 grace marks in (III) to pass. But, upto 3 grace marks can be given in each of not more than three heads.

46. (*a*) : The candidate passes in each of the heads.

47. (*e*) : The candidate requires 6 grace marks in (IV).

48. (*d*) : The candidate gets more than 50% marks. So, he can be awarded 5 grace marks to pass in (I).

49. (*b*) : The candidate passes in each of the heads with more than 75% marks in (II), (IV) and (V).

50. (*c*) : The candidate has appeared with exemption in two heads. So, he cannot be awarded grace marks and fails in (I).

51. (*d*) **52.** (*c*) **53.** (*a*) **54.** (*e*) **55.** (*d*) **56.** (*c*) **57.** (*c*)

18. ASSERTION AND REASON

The test is meant to judge the candidate's knowledge and with it, his ability to reason out correctly. In this test, two statements referred to as the Assertion (A) and Reason (R) respectively are provided. Five alternative comments on these are given and the correct one is to be chosen.

EXAMPLES :

Directions : ***For the Assertions (A) and Reasons (R) below, choose the correct alternative from the following :***

(*a*) Both A and R are true and R is the correct explanation of A.

(*b*) Both A and R are true but R is NOT the correct explanation of A.

(*c*) A is true but R is false.

(*d*) A is false but R is true.

(*e*) Both A and R are false.

1. **Assertion (A)** : Moon cannot be used as a satellite for communication.
   Reason (R) : Moon does not move in the equatorial plane of the earth.
   Clearly, the answer is (a) since R explains A.
2. **Assertion (A)** : Salt is added to cook food at higher altitudes.
   Reason (R) : Temperature is lower at higher altitudes.
   Clearly, the answer is (b) because both statements A and R are separately true but R does not explain A.
3. **Assertion (A)** : Ventilators are provided near the roof.
   Reason (R) : Conduction takes place better near the roof.
   Clearly, the answer is (c) since only statement A is true while R is a wrong statement.
4. **Assertion (A)** : Beri-beri is a viral infection.
   Reason (R) : Vitamin deficiency causes diseases.
   Clearly, the answer is (d) since statement A is false and only R is true.
5. **Assertion (A)** : Bulb filament is made of Titanium.
   Reason (R) : The filament should have low melting point.
   Clearly, the answer is (e) since both the statements A and R are false.

EXERCISE 18A

Directions : ***For the Assertion (A) and Reason (R) below, choose the correct alternative from the following :***

(*a*) Both A and R are true and R is the correct explanation of A.

(*b*) Both A and R are true but R is NOT the correct explanation of A.

(*c*) A is true but R is false.
(*d*) A is false but R is true.
(*e*) Both A and R are false.

1. **Assertion (A)** : Carbon monoxide when inhaled causes death.
   Reason (R) : Carbon monoxide combines with haemoglobin.
2. **Assertion (A)** : We feel colder on mountains than on plains.
   Reason (R) : Temperature decreases with altitude.
3. **Assertion (A)** : Inside the earth metals are present in molten state.
   Reason (R) : Earth absorbs the sun's rays.
4. **Assertion (A)** : There is no vaccine for AIDS.
   Reason (R) : The AIDS virus changes its genetic code.
5. **Assertion (A)** : Clothes are not washed properly in hard water.
   Reason (A) : Hard water contains many minerals.
6. **Assertion (A)** : In India, people elect their own representatives.
   Reason (R) : India is a democracy.
7. **Assertion (A)** : Vaccines prevent diseases.
   Reason (R) : Vaccines must be given to children.
8. **Assertion (A)** : Downpour of rain lessens the humidity in the atmosphere.
   Reason (R) : Rains are caused when atmosphere cannot hold more moisture.
9. **Assertion (A)** : Unpolished rice should be eaten.
   Reason (R) : Polished rice lacks Vitamin B.
10. **Assertion (A)** : Bats can fly in the night.
    Reason (R) : Bats emit ultrasonics.
11. **Assertion (A)** : Razia Sultan was the daughter of Iltutmish.
    Reason (R) : Iltutmish was a rebel.
12. **Assertion (A)** : Silver is not used to make electric wires.
    Reason (R) : Silver is a bad conductor.
13. **Assertion (A)** : Gandhiji withdrew the non-cooperation movement.
    Reason (R) : There was violence at the Chauri Chaura outrage.
14. **Assertion (A)** : Carbon forms the largest number of compounds.
    Reason (R) : Carbon has the catenation property.
15. **Assertion (A)** : Uttar Pradesh is called the 'Sugar Bowl' of India.
    Reason (R) : Uttar Pradesh is the leading producer of sugarcane.
16. **Assertion (A)** : When the bus starts, the person inside it falls forward.
    Reason (R) : The bus pushes the man forward.
17. **Assertion (A)** : Glass tumbler breaks in winter when hot water is poured in it.
    Reason (R) : When hot water is poured, the outer surface of glass expands.
18. **Assertion (A)** : Red colour of blood is due to haemoglobin.
    Reason (R) : Haemoglobin is a red pigment.
19. **Assertion (A)** : Carbohydrates provide energy to the body.

Reason (R) : Obesity is caused by excessive intake of carbohydrates.

20. Assertion (A) : Nuclear fusion is used to generate electricity.

Reason (R) : Nuclear power is not used because it cannot be controlled.

21. Assertion (A) : River Narmada flows westward.

Reason (R) : Narmada falls into the Bay of Bengal.

22. Assertion (A) : Cotton is grown in alluvial soils.

Reason (R) : Alluvial soils are very fertile.

23. Assertion (A) : In India, females have higher life expectancy than the males.

Reason (R) : Females receive a better diet.

24. Assertion (A) : The Indian Constitution came into force with effect from 26th January, 1950.

Reason (R) : 26th January is celebrated as the Republic Day.

25. Assertion (A) : Appendix is a vestigial organ in human body.

Reason (R) : It does not participate in digestion.

26. Assertion (A) : Himalayas once laid under the sea.

Reason (R) : Fossils of marine creatures are traced on the Himalayas.

27. Assertion (A) : Shivaji developed the guerilla warfare.

Reason (R) : Shivaji feared the Mughals.

28. Assertion (A) : Legumes revive the soil fertility.

Reason (R) : Microbes in the root nodules of legumes fix the atmospheric nitrogen.

29. Assertion (A) : Cut fruits and vegetables should not be kept in open for long.

Reason (R) : Their vitamin content is ruined.

30. Assertion (A) : An atom is neutral despite the charged particles in it.

Reason (R) : The neutrons do not have any charge.

ANSWERS

1. (*a*) : Carbon monoxide, when inhaled, combines with haemoglobin of blood to form carboxyhaemoglobin which inhibits the transport of oxygen.

2. (*a*) : Higher above the sea level, temperature decreases at the rate of 1°C for every 165 metres of ascent making mountain peaks colder.

3. (*c*) : Inside the earth, the high temperature and pressure keeps the metals in molten state. The earth does not absorb the sun's rays but reflects them.

4. (*a*) : A vaccine contains the inactivated germs of the disease. But the AIDS virus changes its genetic code and so on vaccine has been invented for it.

5. (*b*) : Clothes are not washed properly in hard water because it does not form lather with soap. However, it is true that hard water contains many minerals.

6. (*a*) : India, being a democracy, it is a government run by the representatives elected by its people.

7. (*b*) : Vaccines prevent diseases by developing immunity inside the body and vaccines must be given to children to build in them a resistance against diseases.

8. (*d*) : Rains are caused when the atmosphere in upper reaches cannot hold more water. But the downpour of rain increases the humidity in the atmosphere near the earth's surface.

9. (*a*) : The husk of unpolished rice contains Vitamin B_1, deficiency of which causes the disease Beri-beri. So, rice should be eaten unpolished.

10. (*a*) : Bats can fly in the night because they can trace the obstacle in the path by perceiving the echo of the ultrasonic sound emitted by them after it is reflected by the obstacle.

11. (*c*) : Iltutmish was a ruler of slave dynasty and Razia was his daughter.

12. (*c*) : Silver is a good conductor of electricity but it is not used to make electric wires because it is expensive.

13. (*a*) : Gandhiji withdrew the non-cooperation movement because of the violence in the Chauri Chaura outrage.

14. (*d*) : Carbon forms a very large number of compounds due to its tendency to form chains and rings of varying sizes, called its catenation property. However, the largest number of compounds are formed by hydrogen.

15. (*a*) : Uttar Pradesh, being the leading producer of sugarcane in India, is called the 'Sugar Bowl' of India.

16. (*e*) : When the bus starts, the person inside it falls backward because the bus moves forward but due to the property of inertia, the man tends to be in the initial state of rest.

17. (*c*) : When in winter, hot water is poured in the glass tumbler, its inner surface tends to expand while the outer surface in contact with cold atmosphere does not. This opposite interaction causes the tumbler to break.

18. (*a*) : Haemoglobin is the blood pigment that imparts red colour to the blood.

19. (*c*) : Carbohydrates are the source of energy in the body. However, obesity is caused by the excessive intake of fats that accumulate in the body.

20. (*e*) : A controlled nuclear fission reaction is used to generate electricity. Nowadays, controlled nuclear power finds many important applications.

21. (*c*) : River Narmada flows westward and drains into Arabian sea.

22. (*d*) : Alluvial soils comprising of silt and sand carried down by the rivers, are very fertile. However, cotton is grown in black soil that suits its mineral requirements.

23. (*e*) : In India, due to high birth rate and due to neglect, females have a lower life expectancy than the males and although females need a better diet, they do not receive it.

24. (*b*) : The Indian Constitution came into force with effect from January 26, 1950 and since then this day is celebrated as the Republic Day.

25. (*a*) : Appendix, earlier used to digest raw vegetable matter, is now a vestigial organ in human body and does not perform any function.

26. (*a*) : Himalayas are the young fold mountains that at one time are believed to lie inside the Tethys sea. This is evident from the recovery of fossils of marine creatures on its peaks.

27. (*c*) : Shivaji initiated the guerilla warfare to defeat the Mughals but he did not fear them.

28. (*a*) : The root nodules of leguminous plants contain certain nitrogen fixing bacteria which absorb the atmospheric nitrogen and convert it into nitrogeneous compounds useful for the plants reviving soil fertility.

29. (*a*) : When cut fruits and vegetables are kept in open, the vitamins in them get oxidised and remain of no use.

30. (*b*) : An atom contains the positively charged protons and an equal number of negatively charged electrons. So, it is neutral. However, it is true that neutrons in the nucleus of an atom are neutral.

EXERCISE 18B

Directions : ***For the Assertion (A) and Reason (R) given in each of the questions below, choose the correct alternative from the following :***

(*a*) Both A and R are true and R is the correct explanation of A.

(*b*) Both A and R are true but R is NOT the correct explanation of A.

(*c*) A is true but R is false.

(*d*) A is false but R is true.

(*e*) Both A and R are false.

1. Assertion (A) : Bangladesh imports jute from India.
Reason (R) : Bangladesh has most of the jute mills.

2. Assertion (A) : The steam engine was invented by James Watt.
Reason (R) : There was a problem of taking out water from flooded mines.

3. Assertion (A) : Increase in carbon dioxide would melt polar ice.
Reason (R) : Global temperature would rise.

4. Assertion (A) : Tamil Nadu gets most of the rainfall in winter.
Reason (R) : Tamil Nadu gets rainfall from retreating monsoons.

5. Assertion (A) : Graphite is slippery and used as a lubricant.
Reason (R) : Graphite has free electrons.

6. Assertion (A) : In India, the judiciary is independent of the executive.
Reason (R) : Judiciary favours the government and helps in the implementation of its plans.

7. Assertion (A) : An iron ball floats on mercury but gets immersed in water.
Reason (R) : The specific gravity of iron is more than that of mercury.

8. Assertion (A) : Copper is used to make electric wires.
Reason (R) : Copper has very low electrical resistance.

9. Assertion (A) : Uranium undergoes nuclear fusion reaction.
Reason (R) : It has a big, unstable nucleus.

10. Assertion (A) : A little gap is left between iron rails.
Reason (R) : Iron expands in summer.

11. Assertion (A) : When common salt is kept open, it absorbs moisture from the air.
Reason (R) : Common salt contains magnesium chloride.

12. Assertion (A) : When a body is dipped in a liquid fully or partially, there is a decrease in its weight.
Reason (R) : The decrease in weight is due to the higher density of the displaced liquid.

13. Assertion (A) : Baking soda creates acidity in the stomach.

Reason (R) : Baking soda is alkaline.

14. Assertion (A) : Most of the Himalayan rivers are perennial.
Reason (R) : They are fed by melting snow.

15. Assertion (A) : Amoebiasis is an occupational disease.
Reason (R) : Amoebiasis is caused by inhalation of asbestos dust.

16. Assertion (A) : Plaster of Paris is used by doctors for setting fractured bones.
Reason (R) : When Plaster of Paris is mixed with water and applied around the fractured limbs, it sets into a hard mass.

17. Assertion (A) : The use of chlorofluoro carbons is banned throughout the world nowadays.
Reason (R) : These chemicals cause skin cancer.

18. Assertion (A) : Bronze is used for making statues.
Reason (R) : Bronze is an alloy of copper and tin.

19. Assertion (A) : India is facing the problem of inflation.
Reason (R) : We have failed to check the growth of black money.

20. Assertion (A) : Leaves of plants are green.
Reason (R) : Plants contain chromoplasts, the green pigment.

21. Assertion (A) : We prefer to wear white clothes in winter.
Reason (R) : White clothes are good reflectors of heat.

22. Assertion (A) : Leakages in household gas cylinders can be detected.
Reason (R) : LPG has a strong smell.

23. Assertion (A) : Simla is colder than Delhi.
Reason (R) : Simla is at a higher altitude as compared to Delhi.

24. Assertion (A) : Land breeze blows during night.
Reason (R) : Land gets heated up quickly.

25. Assertion (A) : The freezing of sea water during winter does not kill the fishes.
Reason (R) : Only surface water is frozen.

26. Assertion (A) : We feel comfortable in hot and humid climate.
Reason (R) : Sweat evaporates faster in humid climate.

27. Assertion (A) : Mohammad-bin-Tughluq is called the 'wisest fool'.
Reason (R) : He had wise plans but implemented them foolishly.

28. Assertion (A) : Weeds should not be allowed to grow along with the crops.
Reason (R) : Weeds leave no space for plants to grow.

29. Assertion (A) : Carbon dioxide turns lime water milky.
Reason (R) : Carbon dioxide sullies the water.

ANSWERS

1. (*e*) : When Bangladesh was created after partition of India, the areas of jute production went to Bangladesh while the jute mills were left in India. So, India imports raw jute from Bangladesh.

2. (*a*) : The problem of pumping out water from the flooded mines provided the need of a self working engine, which led James Watt to invent the same.

3. (*a*) : The carbon dioxide envelope in earth's atmosphere traps the heat. With increase in the proportion of carbon dioxide, therefore, the global temperature would rise, thus causing the polar ice to melt.

4. (*a*) : Rainfall in Tamil Nadu is caused by the retreating monsoons which occur in winter.

5. (*b*) : Graphite possesses a layer structure with two successive layers held by weak forces and able to slide over one another. So, graphite is slippery and this property finds its use as a lubricant.

In graphite, each carbon atom is linked to three other carbon atoms while one electron in the carbon atom is delocalised. So, graphite has free electrons.

6. (*c*) : In India, the judiciary is completely independent of the executive. It has no interference in the affairs of the state nor can it be influenced by the government.

7. (*c*) : Iron with specific gravity less than that of mercury but more than that of water, floats in the former but gets immersed in the second.

8. (*a*) : A low electrical resistance of copper makes it a good electric conductor. So, it is used to make electric wires.

9. (*d*) : Having a big, unstable nucleus, uranium undergoes nuclear fission reaction.

10. (*a*) : Iron expands in summer. So, gaps are left between rails to allow for expansion.

11. (*a*) : Magnesium chloride present in common salt is a deliquescent substance *i.e.* it absorbs moisture from the air when kept in open.

12. (*c*) : When a body is dipped in a liquid, there is a decrease in weight due to the upward thrust exerted on it by the water.

13. (*d*) : Baking soda, being alkaline, neutralises the acidity in the stomach and removes it.

14. (*a*) : Most Himalayan rivers originating in Himalayan peaks are perennial because they are fed by the melting snow throughout the year.

15. (*e*) : Amoebiasis is a microbial disease, caused by protozoa.

16. (*a*) : Plaster of Paris when mixed with water and applied around the fractured limbs, it sets into a hard mass and keeps the bone joints in a fixed position. So, it can be used for setting fractured bones.

17. (*c*) : The use of chlorofluoro carbons is banned nowadays because these cause holes in the ozone layer through which ultraviolet rays penetrate and may cause skin cancer.

18. (*b*) : Bronze is an alloy of copper and tin. It is resistant to corrosion and so it is used to make statues.

19. (*a*) : Inflation in India is caused by unrestricted growth of black money.

20. (*c*) : Leaves of plants are green because they contain the green pigment, chlorophyll. However, plants contain chromoplasts but they are not green pigments.

21. (*d*) : We prefer to wear dark clothes in winter because they absorb the heat and keep the body warm. However, white clothes are good reflectors of heat and are worn in summer.

22. (*c*) : Leakages in household gas cylinders can be detected because of the strong smell of ethyl merceptan mixed with LPG.

23. (*a*) : Simla is colder than Delhi because it is situated at a higher altitude and temperature decreases by 1°C for every 165 metres of ascent.

24. (*b*) : Land gets heated up quickly and also cools quicker than sea at night so that cool winds called the land breeze blow from land to sea.

25. (*a*) : In winter, only the surface water of the sea freezes. Further below, water does not freeze because the surface ice provides an insulating coat.

26. (*e*) : We feel uncomfortable in hot and humid climate because in hot weather, body sweats more but due to high humidity, this sweat does not evaporate easily.

27. (*a*) : R provides the correct explanation of A.

28. (*c*) : Weeds should not be allowed to grow along with the crops because they consume the plant nutrients.

29. (*c*) : Carbon dioxide reacts with lime water (calcium hydroxide) to form milky precipitate of calcium carbonate.

EXERCISE 18C

Directions : ***For the Assertion (A) and Reason (R) given in each of the questions below, choose the correct alternative from the following :***

(*a*) Both A and R are true and R is the correct explanation of A.
(*b*) Both A and R are true but R is not the correct explanation of A.
(*c*) A is true but R is false.
(*d*) A is false but R is true.
(*e*) Both A and R are false.

1. Assertion (A) : Diamond is used for cutting glass.
Reason (R) : Diamond has a high refractive index.

2. Assertion (A) : Telephone wires sag more in summer.
Reason (R) : They expand due to summer heat.

3. Assertion (A) : Eskimos reside in igloos.
Reason (R) : No other material except snow is available.

4. Assertion (A) : India is a democratic country.
Reason (R) : India has a Constitution of its own.

5. Assertion (A) : Pressure cookers are fitted with ebonite handles.
Reason (R) : Ebonite is strong.

6. Assertion (A) : Water kept in earthen pots gets cooled in summer.
Reason (R) : Evaporation causes cooling.

7. Assertion (A) : Safety fuses are made up of materials having a high melting point.
Reason (R) : Safety fuses should be resistant to electric current.

8. Assertion (A) : Pluto is the coldest planet.
Reason (R) : It receives slanting rays of the sun.

9. Assertion (A) : In the upper course, the main work of the river is erosion.
Reason (R) : River flows swiftly in the upper course.

10. Assertion (A) : Most of the ancient civilisations grew near the rivers.
Reason (R) : The main occupation of man was agriculture.

11. Assertion (A) : Buddha left home after his marriage.
Reason (R) : He wished to be free of all worldly ties and become an ascetic.

12. Assertion (A) : Food materials should not be soaked in water for a long time.
Reason (R) : Washing leads to loss of Vitamin A and Vitamin D from the foodstuff.

13. Assertion (A) : Earthworms are not good for agriculture.
Reason (R) : Earthworms break down the soil into fine particles and make it soft.

14. Assertion (A) : DDT has nowadays lost its use as an insecticide.
Reason (R) : DDT is harmful to man.

15. Assertion (A) : Seeds should be treated with fungicide before being sown.
Reason (R) : Seeds do not germinate, unless treated with fungicide solution.

16. Assertion (A) : The body of the fish is streamlined.
Reason (R) : The streamlined body helps the fish to cut its way through the water.

17. Assertion (A) : Milk production in India is low as compared to other countries of the world.
Reason (R) : The animal rearers in India are poor.

18. Assertion (A) : Sprouting should not be done before consuming the grains.
Reason (R) : Sprouting kills many vital vitamins.

19. Assertion (A) : Goitre is a common disease in mountainous regions.
Reason (R) : The diet of the people in mountains lacks iodine content.

20. Assertion (A) : Roughage prevents constipation.
Reason (R) : Roughage adds bulk to the food.

ANSWERS

1. (*b*) : Diamond is very hard due to its rigid three dimensional structure and so, it is used for cutting glass.

Refractive index of diamond is high and gives it the greater transparency and brilliance.

2. (*a*) : The metal of telephone wires expands in summer and the wires become loose. So, they sag.

3. (*c*) : Eskimos live in snow houses called igloos because snow, being a bad conductor of heat, these houses are warm inside.

4. (*b*) : India is a democratic country because its government is the government of the people, for the people and by the people. It is also true that India has its own Constitution.

5. (*c*) : The handles of pressure cookers are made of ebonite because it being a bad conductor of heat, does not heat up.

6. (*a*) : Earthen pots have pores through which water evaporates, causing cooling.

7. (*e*) : Safety fuses are made up of materials having a low melting point so that when excess current flows through the circuit, the fuse melts breaking the circuit and thus prevents appliances.

8. (*c*) : Pluto, being farthest from the sun, hardly gets the sun's rays. So, Pluto is the coldest planet.

9. (*a*) : In its upper course, the river rushes down a steep slope and so flows swiftly, causing mainly erosion in this region.

10. (*b*) : Most ancient civilisations grew near the rivers, because of fertile land and availability of water necessary for agriculture, the main occupation of man.

11. (*a*) : Buddha left home even after his marriage because he wished to free himself of all worldly ties and become an ascetic.

12. (*c*) : Food materials should not be soaked in water for long since washing leads to loss of water soluble Vitamin B and Vitamin C.

13. (*d*) : Earthworms help in agriculture because they make the soil soft and porous.

14. (*b*) : DDT has lost its use as an insecticide because insects have developed immunity against it. However, it is true that DDT is harmful to man.

15. (*c*) : Seeds are treated with fungicides before sowing to avoid seed-borne diseases. However, seeds may germinate, even if not treated with fungicide solution.

16. (*a*) : The fish possesses a streamlined body which helps it to cut its way through the water.

17. (*c*) : Milk production in India is low as compared to other countries of the world because of lack of good breed and improper feed. However, R is untrue.

18. (*e*) : Sprouted grains should be consumed because sprouting enhances the nutrient content of the grains.

19. (*a*) : Goitre is commonly caused in mountainous regions because goitre is caused by deficiency of iodine and diet in mountainous areas lacks iodine.

20. (*a*) : Roughage adds bulk to the food and makes its passage through the stomach easier, thus preventing constipation.

EXERCISE 18D

Directions : ***For the Assertion (A) and Reason (R) given in each of the questions below, choose the correct alternative from the following :***

(*a*) Both A and R are true and R is the correct explanation of A.
(*b*) Both A and R are true but R is not the correct explanation of A.
(*c*) A is true but R is false.
(*d*) A is false but R is true.
(*e*) Both A and R are false.

1. Assertion (A) : India has a tropical monsoon type climate.
Reason (R) : India is located exactly between the tropical latitudes.

2. Assertion (A) : Africa has one of the largest water power potential in the world.
Reason (R) : A large number of hydel power projects have been constructed in Africa.

3. Assertion (A) : Aurangzeb failed in his Deccan policy.
Reason (R) : He could not follow the policy of appeasement.

4. Assertion (A) : For the production of aluminium, cheap electricity is essential.
Reason (R) : Extraction of aluminium from its ore requires abundant supply of electricity.

5. Assertion (A) : Mercury is the farthest planet from the sun.
Reason (R) : Mercury is the smallest planet in the entire solar system.

6. Assertion (A) : Asoka pillars have retained their gloss on their surface.
Reason (R) : Moisture laden winds do not blow in the areas where it is located.

7. **Assertion (A)** : Photosynthesis takes place in all green plants.
   Reason (R) : Chlorophyll is essential for photosynthesis.
8. **Assertion (A)** : Buddha preached four noble truths.
   Reason (R) : He wanted to remove desire, which is the cause of human sorrow and misery.
9. **Assertion (A)** : Akbar founded Din-e-Ilahi.
   Reason (R) : He was motivated by self glorification.
10. **Assertion (A)** : Indian Forest Service is one of the All India Services.
    Reason (R) : Only three services are All India Services.
11. **Assertion (A)** : Winds are deflected to their right in Northern Hemisphere and to the left in the Southern Hemisphere.
    Reason (R) : Rotation of earth causes the changes in wind direction.
12. **Assertion (A)** : Red green colour blindness occurs with more frequency in males than in females.
    Reason (R) : Females have two chromosomes and males have one.
13. **Assertion (A)** : Noise pollution is an unwanted accumulation of noise in the atmosphere.
    Reason (R) : It interferes with communication.
14. **Assertion (A)** : Forest cutting is undesirable from the point of view of soil erosion.
    Reason (R) : Cutting of forests reduces the inberception of rain water.
15. **Assertion (A)** : Indus Valley people knew the art of navigation.
    Reason (R) : Indus Valley seals indicate prevalence of overseas trade.
16. **Assertion (A)** : The western coast of India is characterised by the location of several sea ports.
    Reason (R) : Western coast has evidence of deep sea water.
17. **Assertion (A)** : On the equinoxes, the day and night are equal all over the globe.
    Reason (R) : On the equinoxes, the position of earth with respect to the sun is such that neither pole is inclined towards the sun.
18. **Assertion (A)** : A person with blood type O is considered a universal recipient.
    Reason (R) : Type O blood does not contain any antigens.

ANSWERS

1. (*c*)	**2.** (*c*)	**3.** (*a*)	**4.** (*a*)	**5.** (*d*)	**6.** (*c*)	**7.** (*b*)	**8.** (*a*)	**9.** (*c*)
10. (*c*)	**11.** (*a*)	**12.** (*a*)	**13.** (*a*)	**14.** (*a*)	**15.** (*a*)	**16.** (*a*)	**17.** (*a*)	**18.** (*d*)

19. SITUATION REACTION TEST

In this test, certain situation is described and the candidate is required to choose the most suitable reaction to the given situation from amongst the alternatives provided. The test judges the reasoning power of the candidate and his ability to act correctly and promptly to a situation that may arise in emergency.

Ex. 1. ***While travelling in your car, certain persons stop you on the way asking you to take an injured child to the hospital. You would :***

(*a*) ask them to leave your way and then drive away.

(*b*) ask them to first call the police.

(*c*) immediately take the child to hospital.

(*d*) get out of the car and ask some other person to help them.

Sol. Clearly, the situation described above demands that the person should immediately render the help asked for and take the child to the hospital. So, the answer is (*c*).

Ex. 2. ***While playing cricket in the school, suddenly when you hit the ball, it strikes your classmate on the forehead and blood starts oozing out. You would :***

(*a*) run away from the field.

(*b*) start fighting with the boy why he came in the way.

(*c*) blame somebody else for the accident.

(*d*) take the boy to the first aid room.

Sol. Clearly, in the above situation, the urgent need is to provide first aid to the boy so that the bleeding mav stop. So, the answer is (*d*).

Ex. 3. ***You are visiting a place for the first time and are travelling in a bus. Suddenly you realise that the driver is taking the bus to a lonely place with no right intentions. You would :***

(*a*) with the help of some other passengers, try to baffle the driver and take over the bus.

(*b*) sit and wait to face the repercussions.

(*c*) jump out of the running bus.

(*d*) console the worried passengers.

Sol. Clearly, when a wrong doing is expected, immediate action to prevent it is the need. So, the answer is (*a*).

Ex. 4. ***You have gone to enjoy a Diwali Mela organised by a club. Suddenly you come across a lost child crying desperately. You would :***

(*a*) neglect and walk away.

(*b*) ask the child to find his parents.

(*c*) ask him to stop crying and wait patiently for his parents.

(*d*) contact with the club authorities and make an announcement for the parents.

Sol. Clearly, the immediate need is to find the child's parents and for this, the best way is to announce the child's name and appearance so that his parents might know where the child is. So, the answer is (*d*).

EXERCISE 19

Directions : ***To each of the following questions, four probable answers have been given. Select the most appropriate alternative as the answer.***

1. You have made some silly mistakes which have been pointed out to you. You will : **(Railways, 1993)**

(*a*) laugh it away. (*b*) get angry. (*c*) feel miserable. (*d*) feel thankful.

2. You are moving across the road on a scooter when you observe that two boys on a bike snatch a lady's gold chain and ride away. You would :

(*a*) console the woman.
(*b*) chase the boys to catch hold of them.
(*c*) inform the police about the matter.
(*d*) stand and see what happens next.

3. On reaching the railway station, you find that the train you wanted to catch is just to start and there is hardly any time for purchasing the ticket. The best thing for you is to :

(*a*) rush to the train rather than miss it and inform the T.T.I. at the next stoppage about your inability to purchase the ticket.
(*b*) rush to the train and perform your journey quietly.
(*c*) first purchase the ticket and then catch the train if it is there.
(*d*) miss the train rather than take the risk of boarding the moving train.

4. You are returning home from school. On the way, you find a sealed envelope in a street, fully addressed with unused stamps on it. You would :

(*a*) leave it there as it was and walk away.
(*b*) remove the stamps and destroy the envelope.
(*c*) open the envelope, find out who has dropped it by mistake, and send it to him if possible.
(*d*) post it at the nearest letter box.

5. If in the examination hall, you find that the question paper is too tough to be answered satisfactorily by you, the best thing to do for you is to :

(*a*) tell the examiner that the questions are out of course.
(*b*) provoke the candidates to walk out of the examination hall.
(*c*) try to know something from your neighbour.
(*d*) try to solve the questions as much as you know with a cool head.

6. You are walking down the street and suddenly you see two hundred rupee notes on the pavement. What action will you take ? **(Railways, 1993)**

(*a*) Pocket it yourself. (*b*) Leave it where it is.
(*c*) Give the money to a beggar. (*d*) Deposit it in the nearest police station.

7. Your bathroom tap is leaking and is a constant source of irritating noise. You would :

(*a*) sleep with pillows upon your ears.
(*b*) put a bucket underneath.
(*c*) try to put up a cork upon the mouth of the tap.
(*d*) call a plumber to repair the tap.

8. You find a lady's purse dropped on the road and on picking it up, find a thousand rupees inside. You would :

(*a*) take the purse away.
(*b*) take out the money and leave the purse there.
(*c*) deposit it at the nearest police station.
(*d*) stand there and wait for the owner.

9. While sitting in a park, you observe that a smart young man comes to the place on a scooter, leaves it there and goes away with someone else on a motorbike. You would :

(*a*) chase the person. (*b*) inform the police at the nearby booth.
(*c*) call back the person. (*d*) remain engaged in your enjoyment.

10. You are playing football in a park. When you kick the ball, it strikes and breaks the window pane of a nearby house. You would :

(*a*) demand your ball back from the house owner.
(*b*) say that it was no fault of yours.
(*c*) stealthily get your ball back.
(*d*) apologise to the house owner and contribute to replace the glass.

11. You are in a bus. The bus reaches your stop but still you have not purchased the ticket because of heavy rush. What will you do ? **(Railways, 1993)**

(*a*) Jump out quickly to avoid embarrassment.
(*b*) Call the conductor, give him the money and get the ticket.
(*c*) Hand the money to someone sitting nearby to give it to the conductor.
(*d*) Give the money to the driver.

12. While you board a train at the station, you find a suitcase beneath your seat. You would :

(*a*) report the matter to the police.
(*b*) open up the suitcase to look through its contents.
(*c*) try to find out the address of the owner from the papers etc. in the suitcase.
(*d*) finding no one to claim it, take it into your own possession.

13. While firing crackers, a child gets severe burns on the hand. What would you do ?

(*a*) Dip the child's hands in cold water till there is no more burning sensation.
(*b*) Wash the hands with Dettol.
(*c*) Send someone to call the doctor.
(*d*) Apply some ointment on the affected area.

14. You find that the person whom you call your friend has been cheating you. What would you do ? **(M.B.A. 1998)**

(*a*) Break relations with him. (*b*) Give him tit for tat.
(*c*) Make him realise his mistake. (*d*) Tell other friends about him.

15. While attending your friend's party, you see your friend's muffler catching fire from the candle on the table behind him. You would :

(*a*) ask your friend to see behind him.
(*b*) rush to call friend's mother.
(*c*) rush and taking out the muffler from his neck, drop it and pour water on it.
(*d*) take out the muffler and throw it away.

16. Your friend has not invited you to his marriage party. You will :

(*a*) hold it against him. (*b*) attend the ceremony.
(*c*) send him your best wishes. (*d*) ignore the whole affair.

(Railways, 1993)

17. While travelling in a train, you observe some college students pulling the alarm chain simply to get down at their desired point. You would :

(*a*) with the help of some passengers, check them from doing so.
(*b*) let them pull the chain but check them from detraining.
(*c*) inform the guard of the train as soon as it stops.
(*d*) keep quiet and do nothing.

18. You are driving your car on the road when you hit against a fruit vendor's cart. You would :

(*a*) escape from the site by driving away.
(*b*) abuse the fruit vendor for putting his cart on the way.
(*c*) pay the fruit vendor for the damage done to him.
(*d*) insist that it was not your fault.

19. You are a guest at a dinner. The host asks you to take one more chapati after your stomach is full. You would : **(M.B.A. 1998)**

(*a*) make a blunt refuse.
(*b*) take the chapati.
(*c*) politely say that the food was too good and you have already eaten much.
(*d*) make a bad face at him.

20. You are passing by a river and you know swimming. Suddenly, you hear the cry of a drowning child. You would :

(*a*) dive into the river to save him.
(*b*) wait to see if some other person is there to help.
(*c*) look for professional divers.
(*d*) console the child's parents.

21. You are playing in your friend's house, when he gets stuck with a naked electric wire. You would :

(*a*) hold him by the arms and try to set him free.
(*b*) hold the wire and pull it away.
(*c*) pull off the wire with a wooden stick.
(*d*) send for the doctor.

22. You are interviewed for a new job. Which of the following questions is most important to you ? **(Railways, 1993)**

(*a*) Opportunities for promotion
(*b*) Remuneration you will be paid
(*c*) Scope to develop your ideas and use them to improve the working of the organisation
(*d*) All the above are equally important

23. You are alone in the house and there is quite a danger of thieves around. Just then, you hear a knock at the door. You would :

(*a*) open the door to see who is there.
(*b*) first peep out from the window to confirm whether you know the person.

(*c*) not open the door.

(*d*) ask the servant to see who is there.

24. You are living in a college hostel. The ***dal*** served to you in the mess has a lot of stones. What would you do ?

(*a*) Leave eating the *dal* altogether.

(*b*) Bring the matter to the notice of mess incharge.

(*c*) Speak to the cook about changing the *dal*.

(*d*) Buy your own *dal* and cook it in your room.

25. While travelling in a train, you notice a man from the coach behind yours fall off the train. You would :

(*a*) pull the alarm chain so that the train may stop and the man may be helped.

(*b*) shout at the falling man asking him to get up quickly and entrain.

(*c*) jump off the train to assist the falling man.

(*d*) wait till the train stops at the next station and inform the railway authorities there.

ANSWERS

1. (*d*)	**2.** (*b*)	**3.** (*a*)	**4.** (*d*)	**5.** (*d*)	**6.** (*d*)	**7.** (*d*)	**8.** (*d*)	**9.** (*b*)
10. (*d*)	**11.** (*b*)	**12.** (*a*)	**13.** (*a*)	**14.** (*c*)	**15.** (*c*)	**16.** (*c*)	**17.** (*a*)	**18.** (*c*)
19. (*c*)	**20.** (*a*)	**21.** (*c*)	**22.** (*d*)	**23.** (*b*)	**24.** (*b*)	**25.** (*a*).		

20. VERIFICATION OF TRUTH OF THE STATEMENT

In this type of questions, the candidate is required to stress only on truth of the facts that always hold. Questions are asked in context of a particular thing or factor that is always characterised by a specific part. The alternatives other than the correct answer also seem to bear a strong relationship with the thing mentioned. So, absolute truth is to be followed.

Ex. 1. ***Atmosphere always has***

(*a*) Oxygen (*b*) Air (*c*) Germs
(*d*) Moisture (*e*) Dust

Sol. Clearly, though all the alternatives may form a part of the atmosphere, the air is the most vital part, without which there can be no atmosphere. So, the answer is (*b*).

Ex. 2. ***A train always has***

(*a*) Engine (*b*) Rails (*c*) Driver
(*d*) Guard (*e*) Passengers

Sol. Clearly, rails are necessary for the train to move on. Driver alone can move the train. A guard is also necessary for safety. A train is moved for the passengers. But all these do not constitute a train. A train cannot be called so without the engine. So, the answer is (*a*).

Ex.3. ***Which one of the following is always found in 'Bravery' ?***

(*a*) Courage (*b*) Experience (*c*) Power
(*d*) Knowledge

Sol. Clearly, 'bravery' is a quality exhibited only by a person who possesses courage. So, the answer is (*a*).

EXERCISE 20

Directions : ***Choose the best alternative as the answer.***

1. Which of the following an animal always has ? **(Bank P.O. 1996)**

(*a*) Lungs (*b*) Skin (*c*) Mind
(*d*) Heart (*e*) Life

2. A race always has

(*a*) Referee (*b*) Spectators (*c*) Rivals
(*d*) Prize (*e*) Victory

3. Which of the following a 'Drama' must have ? **(R.B.I. 1990)**

(*a*) Actors (*b*) Story (*c*) Sets
(*d*) Director (*e*) Spectators

4. A book always has
(*a*) Chapters (*b*) Pages (*c*) Contents
(*d*) Pictures (*e*) Illustrations

5. A mirror always **(M.B.A. 1994)**
(*a*) Reflects (*b*) Retracts (*c*) Distorts
(*d*) Refracts (*e*) Reveals the truth

6. A factory always has
(*a*) Electricity (*b*) Chimney (*c*) Workers
(*d*) Files (*e*) Sellers

7. A clock always has
(*a*) Battery (*b*) Numbers (*c*) Alarm
(*d*) Needles (*e*) Frame

8. A car always has **(Bank P.O. 1989)**
(*a*) Driver (*b*) Bonnet (*c*) Dicky
(*d*) Bumper (*e*) Wheels

9. A river always has
(*a*) Delta (*b*) Tributaries (*c*) Boats
(*d*) Banks (*e*) Fishes

10. A tree always has which of the following ? **(Management Trainees' Exam. 1991)**
(*a*) Branches (*b*) Leaves (*c*) Fruits
(*d*) Roots (*e*) Shadow

11. A jail always has
(*a*) Bars (*b*) Jailor (*c*) Lawyer
(*d*) Locks (*e*) Prisoners

12. A camera always has **(M.B.A. 1998)**
(*a*) Lens (*b*) Reels (*c*) Flash
(*d*) Photograph (*e*) Stand

13. An oasis always has
(*a*) Travellers (*b*) Water (*c*) Sand
(*d*) Camels (*e*) Forests

14. A hospital always has
(*a*) Nurse (*b*) Room (*c*) Telephone
(*d*) Doctor (*e*) Bed

15. A bulb always has
(*a*) Filament (*b*) Light (*c*) Glass
(*d*) Current (*e*) Argon

16. A scenery always has
(*a*) Paints (*b*) Mountains (*c*) Rivers
(*d*) Composition (*e*) Painter

17. A school always has
(*a*) Principal (*b*) Building (*c*) Library
(*d*) Teacher (*e*) Classes

18. A pen always has
(*a*) Tube (*b*) Cap (*c*) Holder
(*d*) Ink (*e*) Nib

19. A cupboard always has
(*a*) Clothes (*b*) Door (*c*) Shelf
(*d*) Bolt (*e*) Lock

20. Which of the following is always with bargain ?
(*a*) Sumptuousness (*b*) Exchange (*c*) Triviality
(*d*) Eloquence (*e*) Profit

21. The dead have no
(*a*) Sensation (*b*) Heart-beats (*c*) Bones
(*d*) Breathing (*e*) Movement

22. A newspaper always has
(*a*) Advertisement (*b*) News (*c*) Editor
(*d*) Paper (*e*) Date

23. Cricket always has
(*a*) Stumps (*b*) Pitch (*c*) Glove
(*d*) Pads (*e*) Bat

24. A man always has
(*a*) Teeth (*b*) Feet (*c*) Eyes
(*d*) Hands (*e*) Heart

25. A fan always has
(*a*) Switch (*b*) Blades (*c*) Current
(*d*) Wire (*e*) Regulator

26. A disease always has **(M.B.A. 1998)**
(*a*) Cure (*b*) Medicine (*c*) Cause
(*d*) Germs (*e*) Patient

27. Which of the following is associated with diamond ?
(*a*) Hardness (*b*) Brilliance (*c*) Use
(*d*) Conductivity (*e*) Sharpness

28. All animals have
(*a*) Eyes (*b*) Four legs (*c*) Horns
(*d*) Instincts (*e*) Tails

29. Danger always involves **(S.S.C. 1987)**
(*a*) Enemy (*b*) Attack (*c*) Fear

(*d*) Help

30. A mountain always has
(*a*) Ranger (*b*) Peak (*c*) Snow
(*d*) Valley

31. Milk always contains
(*a*) Sugar (*b*) Fats (*c*) Calcium
(*d*) Water

32. Which of the following is always associated with justice ? **(S.S.C. 1987)**
(*a*) Hypocrisy (*b*) Magnanimity (*c*) Legitimacy
(*d*) Diminutiveness

33. A chocolate always has
(*a*) Wrapper (*b*) Cocoa (*c*) Nuts
(*d*) Milk

34. What is always in worry ? **(U.D.C. 1986)**
(*a*) Difficulty (*b*) Unrest (*c*) Non-cooperation
(*d*) Poignancy

35. A shoe always has
(*a*) Laces (*b*) Leather (*c*) Design
(*d*) Sole

36. Quilt always has
(*a*) Cotton (*b*) Cover (*c*) Print
(*d*) Tags

37. A hill always has **(S.S.C. 1987)**
(*a*) Trees (*b*) Animals (*c*) Water
(*d*) Height

38. A window always has
(*a*) Curtain (*b*) Panes (*c*) Grill
(*d*) None of these

39. A song always has **(U.D.C. 1986)**
(*a*) Chorus (*b*) Musician (*c*) Tymbal
(*d*) Word

40. Controversy always involves **(M.B.A. 1998)**
(*a*) Dislike (*b*) Injustice (*c*) Passion
(*d*) Disagreement

41. A chind must have had **(Railways, 1998)**
(*a*) toys (*b*) friends (*c*) parents
(*d*) education

42. A lotus flower always has **(U.T.I. 1990)**
(*a*) petals (*b*) mud (*c*) root
(*d*) water

ANSWERS

1. (*e*)	**2.** (*c*)	**3.** (*b*)	**4.** (*b*)	**5.** (*a*)	**6.** (*c*)	**7.** (*d*)	**8.** (*e*)	**9.** (*d*)	**10.** (*d*)
11. (*d*)	**12.** (*a*)	**13.** (*b*)	**14.** (*d*)	**15.** (*a*)	**16.** (*d*)	**17.** (*d*)	**18.** (*e*)	**19.** (*c*)	**20.** (*b*)
21. (*e*)	**22.** (*b*)	**23.** (*e*)	**24.** (*e*)	**25.** (*b*)	**26.** (*c*)	**27.** (*a*)	**28.** (*d*)	**29.** (*c*)	**30.** (*b*)
31. (*c*)	**32.** (*c*)	**33.** (*b*)	**34.** (*b*)	**35.** (*d*)	**36.** (*a*)	**37.** (*d*)	**38.** (*d*)	**39.** (*d*)	**40.** (*d*)
41. (*c*)	**42.** (*a*)								

LOGICAL DEDUCTION

1. LOGIC

The word 'Logic' is derived from the Greek noun 'logos' meaning both 'thought' and 'the word expressing thought'.

Thus, LOGIC is the 'science of thought as expressed in language'. This means that the questions on logic are to be solved as per the information given without any concern of the formal validity or truth of the statements *i.e.* conclusion should follow directly from the statements given.

With this unique characteristic, the Logic Test becomes an instrument of teaching the candidates to follow the rules and work as per the instructions without an error. Thus, it prepares the mind for all types of reasoning practices and teaches how to detect and avoid mistakes in the same.

LOGICAL REASONING

In Logic, any statement is termed as the **Proposition.** Thus, *a Proposition is a statement expressing certain relation between two or more terms,* analogous to a sentence in grammar.

The Proposition consists of three parts :

1. **Subject :** The Subject is that about which something is said.
2. **Predicate :** The Predicate is the part of the Proposition denoting that which is affirmed or denied about the subject.
3. **Copula :** The Copula is that part of the Proposition which denotes the relation between the Subject and the Predicate.

Consider the Proposition '*Man is cultured*'.

Here an information is given about the man. So 'Man' is the Subject.

'Cultured' is the quality affirmed for this Subject. So it is the Predicate.

'is' denotes the relation between the Subject and the Predicate. So, it is the Copula.

Four Fold Classification of Propositions :

'Propositions' can be classified into four types :

1. Universal Affirmative Proposition (denoted by A) : It distributes *only the subject i.e.*, the Predicate is not interchangeable with the subject while maintaining the validity of the Proposition. *e.g.*,

All men are animals.

This is Proposition A since we cannot say 'All animals are men.'

2. Universal Negative Proposition (denoted by E) : It distributes *both the Subject and the Predicate i.e.*, an entire class of predicate term is denied to the entire class of the subject term, as in the proposition. *e.g.*

No boy is intelligent.

3. Particular Affirmative Proposition (denoted by I) : It distributes *neither the Subject nor the Predicate. e.g.*

Some people are foolish.

Here, the subject term 'Some people' is used not for all but only for some men and similarly the predicate term 'foolish' is affirmed for a part of subject class. So, both are undistributed.

4. Particular Negative Proposition (denoted by O) :

It distributes *only the Predicate. e.g.,*

Some animals are not wild.

Here the subject term 'some animals' is used only for a part of its class and hence is undistributed while the predicate term 'wild' is denied in entirety to the subject term and hence is distributed.

These facts can be summarised as follows :

Proposition	Type
(*a*) (A) distributes subject only.	All S is P.
(*b*) (E) distributes subject and predicate both.	No S is P.
(*c*) (I) distributes neither.	Some S is P.
(*d*) (O) distributes predicate only.	Some S is not P.

SYLLOGISM : In Logic, we are required to deal with a particular type, termed as Syllogism. It was introduced by Aristotle.

In Syllogism, a *conclusion* has to be drawn from two propositions, referred to as the Premises.

Example : 1. All lotus are flowers.
2. All flowers are beautiful.
3. All lotus are beautiful.

Clearly, the propositions 1 and 2 are the Premises and the proposition 3, which follows from the first two propositions, is called the Conclusion.

Term : In Logic, a TERM is a word or a combination of words, which by itself can be used as a subject or predicate of a proposition.

Syllogism is concerned with three terms :

1. Major Term : It is the *predicate of the conclusion* and is denoted by P (first letter of 'Predicate.)

2. Minor Term : It is the *subject of the conclusion* and is denoted by S (first letter of 'Subject').

3. Middle Term : It is the *term common to both the premises* and is denoted by M (first letter of 'Middle').

Note that the middle term does not occur in the conclusion.

Example : Premises : 1. All dogs are animals.
2. Tiger is a dog.
Conclusion : Tiger is an animal.

Here, 'animal' is the predicate of the conclusion and so, it is the Major Term, P.

'Tiger' is the subject of the conclusion and so, it is the Minor Term, S.

'Dog' is the term common to both the premises and so, it is the Middle Term, M.

Major and Minor Premise : Of the two premises, the *major premise* is that in which the middle term is the subject and the *minor premise* is that in which the middle term is the predicate.

Rules for deriving the conclusion :

1. ***The conclusion does not contain the middle term.***

Example : *Statements :* 1. All men are girls.
2. Some girls are students.

Conclusions : 1. All girls are men.
2. Some students are girls.

Since both the conclusions 1 and 2 contain the middle term 'girls', so neither of them can follow.

2. *No term can be distributed in the conclusion unless it is distributed in the premises.*

Example : *Statements :* 1. Some dogs are goats.
2. All goats are cows.
Conclusions : 1. All cows are goats.
2. Some dogs are cows.

Statement 1 is an I type proposition which distributes neither the subject nor the predicate. Statement 2 is an A type proposition which distributes the subject. i.e. 'goats' only.

Conclusion 1 is an A type proposition which distributes the subject 'cow' only.

Since the term 'cow' is distributed in conclusion 1 without being distributed in the premises, so conclusion 1 cannot follow.

3. *The middle term (M) should be distributed at least once in the premises. Otherwise, the conclusion cannot follow.*

For the middle term to be distributed in a premise,

(*i*) M must be the Subject if premise is an A proposition.

(*ii*) M must be Subject or Predicate if premise is an E proposition.

(*iii*) M must be Predicate if premise is an O proposition.

Note that in an I proposition, which distributes neither the Subject nor the Predicate, the middle term cannot be distributed.

Example : *Statements :* 1. All fans are watches.
2. Some watches are black.
Conclusions : 1. All watches are fans.
2. Some fans are black.

In the premises, the middle term is 'watches'. Clearly, it is not distributed in the first premise which is an A proposition as it does not form its subject. Also, it is not distributed in the second premise which is an I proposition. Since the middle term is not distributed at least once in the premises, so no conclusion follows.

4. *No conclusion follows*

(a) if both the premises are particular

Example : *Statements :* 1. Some books are pens.
2. Some pens are erasers.
Conclusions : 1. All books are erasers.
2. Some erasers are books.

Since both the premises are particular, no conclusion follows.

(b) if both the premises are negative

Example : *Statements :* 1. No flower is mango.
2. No mango is cherry.
Conclusions : 1. No flower is cherry.
2. Some cherries are mangoes.

Since both the premises are negative, neither conclusion follows.

(c) if the major premise is particular and the minor premise is negative.

Example : *Statements :* 1. Some dogs are bulls.
2. No tigers are dogs

Conclusions : 1. No dogs are tigers.
2. Some bulls are tigers.

Here the first premise containing the middle term 'dogs' as the Subject is the major premise and the second premise containing the middle term 'dogs' as the Predicate is the minor premise. Since the major premise is particular and the minor premise is negative, so no conclusion follows.

5. *If the middle term is distributed twice, the conclusion cannot be universal.*

Example : *Statements :* 1. All fans are chairs.
2. No tables are fans.

Conclusions : 1. No tables are chairs.
2. Some tables are chairs.

Here, the first premise is an A proposition and so, the middle term 'fans' forming the subject is distributed. The second premise is an E proposition and so, the middle term 'fans' forming the predicate is distributed. Since the middle term is distributed twice, so the conclusion cannot be universal.

6. *If one premise is negative, the conclusion must be negative.*

Example : *Statements :* 1. All grasses are trees.
2. No tree is shrub.

Conclusions : 1. No grasses are shrubs.
2. Some shrubs are grasses.

Since one premise is negative, the conclusion must be negative. So, conclusion 2 cannot follow.

7. *If one premise is particular, the conclusion is particular.*

Example : *Statements :* 1. Some boys are thieves.
2. All thieves are dacoits.

Conclusions : 1. Some boys are dacoits.
2. All dacoits are thieves.

Since one premise is particular, the conclusion must be particular. So, conclusion 2 cannot follow.

8. *If both the premises are affirmative, the conclusion would be affirmative.*

Example : *Statements :* 1. All women are mothers.
2. All mothers are sisters.

Conclusions : 1. All women are sisters.
2. Some women are not sisters.

9. *If major premise be affirmative, the conclusion must be particular.*

Example : *Statements :* 1. All plays are stories.
2. Some poems are plays.

Conclusions : 1. Some poems are stories.
2. All stories are poems.

The first premise containing the middle term 'plays' as the subject is the major premise. Also, it is affirmative. So, the conclusion must be particular. Hence, conclusion 2 cannot follow.

EXERCISE 1A

Directions : ***In each question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.***

Give answer (a) if only conclusion I follows; (b) if only conclusion II follows; (c) if either I or II follows; (d) if neither I nor II follows and (e) if both I and II follow.

1. Statements : All planets are moons.
All moons are stars. **(Bank P.O. 1996)**

Conclusions : I. All moons are planets.
II. All planets are stars.

2. Statements : All men are dogs.
All dogs are cats. **(M.B.A. 1997)**

Conclusions : I. All men are cats.
II. All cats are men.

3. Statements : All tubes are handles.
All cups are handles. **(Bank P.O. 1997)**

Conclusions : I. All cups are tubes.
II. Some handles are not cups.

4. Statements : All bags are cakes.
All lamps are cakes.

Conclusions : I. Some lamps are bags.
II. No lamp is bag.

5. Statements : All flowers are stems.
All stems are roots. **(Bank P.O. 1993)**

Conclusions : I. All roots are flowers.
II. All stems are flowers.

6. Statements : All puppets are dolls.
All dolls are toys.

Conclusions : I. Some toys are puppets.
II. All toys are puppets.

7. Statements : All apples are oranges.
Some oranges are papayas. **(M.B.A. 1998)**

Conclusions : I. Some apples are papayas.
II. Some papayas are apples.

8. Statements : Some players are singers.
All singers are tall. **(Bank P.O. 1998)**

Conclusions : I. Some players are tall.
II. All players are tall.

9. Statements : All coins are crows.
Some crows are pens. **(Bank P.O. 1997)**

Conclusions : I. No pen is coin.
II. Some coins are pens.

10. Statements : All men are married.
Some men are educated. **(M.B.A. 1997)**

Conclusions : I. Some married are educated.
II. Some educated are married.

11. Statements : All cars are tables.
Some children are tables. **(Hotel Management, 1992)**

Conclusions : I. Some cars are children.
II. Some children are cars.

12. Statements : All windows are needles.
Some trees are windows. **(Bank P.O. 1996)**

Conclusions : I. Some trees are needles.
II. Some trees are not needles.

13. Statements : Some dogs bark.
All dogs bite.

Conclusions : I. Those dogs who do not bark, also bite.
II. Those dogs who do not bark, not necessarily bite.

14. Statements : Some fools are intelligent.
Some intelligent are great. **(Bank P.O. 1998)**

Conclusions : I. Some fools are great.
II. All great are intelligent.

15. Statements : Some papers are files.
Some files are pens. **(Bank P.O. 1997)**

Conclusions : I. Some files are not pens.
II. Some pens are papers.

16. Statements : Some bottles are pencils.
Some pencils are glasses. **(Bank P.O. 1996)**

Conclusions : I. No glass is bottle.
II. Some bottles are glasses.

17. Statements : Some soldiers are famous.
Some soldiers are intelligent.

Conclusions : I. Some soldiers are either famous or intelligent.
II. Some soldiers are neither famous nor intelligent.

18. Statements : All boys are honest.
Sachin is honest.

Conclusions : I. Sachin is a boy.
II. All honest persons are boys.

19. Statements : Lawyers married only fair girls.
Shobha is very fair.

Conclusions : I. Shobha was married to a lawyer.
II. Shobha was not married to a lawyer.

20. Statements : Sohan is a good sportsman.
Sportsmen are healthy.

Conclusions : I. All healthy persons are sportsmen.
II. Sohan is healthy.

21. Statements : All students in my class are intelligent.
Rohit is not intelligent. **(Asstt. Grade, 1992)**

Conclusions : I. Rohit is not a student of my class.
II. Rohit must work hard.

22. Statements : All hill stations have a sun-set point.
X is a hill station.

Conclusions : I. X has a sun-set point.
II. Places other than hill stations do not have sun-set points.

23. Statements : Some sticks are bolts.
Kite is a stick.

Conclusions : I. Some bolts are sticks.
II. Some kites are bolts.

24. Statements : Some men are educated.
Educated persons prefer small families.

Conclusions : I. All small families are educated.
II. Some men prefer small families.

25. Statements : Some nurses are nuns.
Madhu is a nun. **(M.B.A. 1998)**

Conclusions : I. Some nuns are nurses.
II. Some nurses are not nuns.

26. Statements : All lamps are hooks.
No hook is coloured. **(Bank P.O. 1996)**

Conclusions : I. Some lamps are coloured.
II. No lamp is coloured.

27. Statements : All windows are doors.
No door is wall.

Conclusions : I. No window is wall.
II. No wall is door.

28. Statements : All locks are keys.
No key is a spoon.

Conclusions : I. No lock is a spoon.
II. No spoon is a lock.

29. Statements : All young scientists are open-minded.
No open-minded men are superstitious.

Conclusions : I. No scientist is superstitious.
II. No young people are superstitious.

30. Statements : All plants are trees.
No tree is green.

Conclusions : I. Some plants are green.
II. Those plants which are not trees are green.

31. Statements : No magazine is cap.
All caps are cameras. **(Bank P.O. 1997)**

Conclusions : I. No camera is magazine.
II. Some caps are magazines.

32. Statements : Some shirts are biscuits.
No biscuit is book.
Conclusions : I. Some shirts are books.
II. Some books are biscuits.

33. Statements : Some books are pens.
No pen is pencil. **(Bank P.O. 1998)**
Conclusions : I. Some books are pencils.
II. No book is pencil.

34. Statements : No women can vote.
Some women are politicians.
Conclusions : I. Male politicians can vote.
II. Some politicians can vote.

35. Statements : Some books are toys.
No toy is red. **(Bank P.O. 1997)**
Conclusions : I. Some books are red.
II. Some books are not red.

36. Statements : All birds are dogs.
Some dogs are cats. **(C.B.I. 1997)**
Conclusions : I. Some cats are not dogs.
II. All dogs are not birds.

37. Statements : Many books are rocks.
All rocks are clips.
Conclusions : I. Some books are clips.
II. No rock is a book.

38. Statements : Most clocks are fans.
Some fans are walls.
Conclusions : I. Some walls are fans.
II. Some clocks are walls.

39. Statements : No man is a donkey.
Rahul is a man.
Conclusions : I. Rahul is not a donkey.
II. All men are not Rahul.

40. Statements : All poles are guns.
Some boats are not poles. **(M.B.A. 1997)**
Conclusions : I. All guns are boats.
II. Some boats are not guns.

ANSWERS

1. (*b*) : Since both the statements are affirmative, the conclusion must be affirmative. However, conclusion I cannot follow as it contains the middle term. So, only conclusion II follows.

2. (*a*) : Since both the premises are affirmative, the conclusion must be affirmative. However, conclusion II being an A type proposition, distributes the term 'goats'. Since the term 'goats' is distributed in II without being distributed in any of the premises, so conclusion II cannot follow. Thus, only I follows.

3. (*d*) : Both the premises are A type propositions. So, in either, the middle term 'handles' forming the predicate is not distributed.

Since the middle term is not distributed even once in the premises, so no conclusion follows.

4. (*d*) : Both the premises being A type propositions, the middle term 'cakes' forming the predicate is not distributed in any of them.

Since the middle term is not distributed even once in the premises, so no conclusion follows.

5. (*d*) : Conclusion I being an A type proposition, distributes the term 'roots'. Since the term 'roots' is distributed in I without being distributed in any of the premises, so conclusion I cannot follow. Conclusion II cannot follow as it contains the middle term.

6. (*a*) : Conclusion II, being an A type proposition, distributes the term 'toys'. Since the term 'toys' is distributed in II without being distributed in any of the premises, so conclusion II cannot follow. So, only I follows.

7. (*d*) : The first premise is A type and distributes the subject. So, the middle term 'oranges' which forms its predicate, is not distributed.

The second premise is I type and does not distribute either subject or predicate. So, the middle term 'oranges' forming its subject is not distributed.

Since the middle term is not distributed even once in the premises, so no conclusion follows.

8. (*a*) : Since one premise is particular, the conclusion must be particular. So, only conclusion I follows.

9. (*d*) : Since the middle term 'crows' is not distributed even once in the premises, so no conclusion follows.

10. (*e*) : Since one premise is particular, the conclusion must be particular. So, both I and II follow.

11. (*d*) : The first premise is an A type proposition, So, the middle term 'tables' forming the predicate is not distributed.

The second premise is an I type proposition. So, the middle term forming the predicate is not distributed. Since the middle term is not distributed even once in the premises, so no conclusion follows.

12. (*a*) : Since one premise is particular, so the conclusion must be particular. Also, since the term 'needles' is distributed in II (O type proposition) without being distributed in the premises, so, conclusion II cannot follow. Thus, only I follows.

13. (*a*) : Clearly, conclusion I follows from the statements.

14. (*d*) : Since both the premises are particular, no conclusion follows as the middle term is not distributed even once in the premises.

15. (*d*) : Since both the premises are particular, so no conclusion follows.

16. (*d*) : Since both the premises are particular, so no conclusion follows.

17. (*d*) : Since both the premises are particular, so no conclusion follows.

18. (*d*) : Both the premises are A type propositions. So, the middle term 'honest' forming the predicate in each is not distributed in either.

Since the middle term is not distributed even once, no conclusion follows.

19. (*c*) : The data does not mention whether all fair girls were married to lawyers. So, either of the two conclusions may follow.

20. (*b*) : Conclusion I cannot follow as it contains the middle term, So, only conclusion II follows.

21. (*a*) : Since one premise is negative, the conclusion must be negative. So, only conclusion I follows.

22. (*a*) : Since both the premises are affirmative, the conclusion must be affirmative. So, only conclusion I follows.

23. (*d*) : The middle term 'sticks' forming the subject is not distributed in the first premise which is an I type proposition. The middle term forming the predicate is not distributed in second premise as it is an A type proposition and distributes subject only. Since middle term is not distributed even once, no conclusion follows.

24. (*b*) : Since one premise is particular, the conclusion must be particular. So, only conclusion II follows.

25. (*d*) : Since the middle term is not distributed even once in the premises, so no conclusion follows.

26. (*b*) : Since one premise is negative, the conclusion must be negative. So, only conclusion II follows.

27. (*a*) : Since one premise is negative, the conclusion must be negative. Conclusion II cannot follow as it contains the middle term. So, only conclusion I follows.

28. (*a*) : Since one premise is negative, the conclusion must be negative. So, I follows. But the reverse is not necessarily true. So, II does not follow.

29. (*d*) : The subject in both the conclusions is vague. The true conclusion is 'No young scientist is superstitious'. So, neither conclusion follows.

30. (*d*) : Since one premise is negative, the conclusion must be negative. So, neither conclusion follows.

31. (*d*) : Since one premise is negative, the conclusion must be negative. So, II cannot follow. Also, the term 'camera' is distributed in I without being distributed in any of the premises. So, conclusion I also does not follow.

32. (*d*) : Since one premise is negative, so conclusion must be negative. So, neither I nor II follows.

33. (*d*) : Since one premise is negative, the conclusion must be negative. So, conclusion I cannot follow.

Since one premise is particular, the conclusion must be particular. Also, the term 'books' is distributed in II without being distributed in any of the premises. So, II also cannot follow.

34. (*d*) : Since one premise is negative, the conclusion must be negative. So, neither conclusion follows.

35. (*b*) : Since one premise is negative, the conclusion must be negative. So, I cannot follow. Thus, only II follows.

36. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

37. (*a*) : Since the first premise is particular, the conclusion must be particular. So, only conclusion I follows.

38. (*d*) : Since both the premises are particular, no conclusion follows.

39. (*a*) : Since one premise is negative, the conclusion must be negative. Conclusion II cannot follow as it contains the middle term. So, only conclusion I follows.

40. (*d*) : Clearly, the term 'guns' is distributed in both the conclusions without being distributed in any of the premises. So, no conclusion follows.

EXERCISE 1B

Directions : ***In each questions below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the the given conclusions logically follows from the two given statements, disregarding commonly known facts.***

Give answer (a) if only conclusion I follows; (b) if only conclusion II follows; (c) if either I or II follows; (d) if neither I nor II follows and (e) if both I and II follow.

1. **Statements** : All dogs are jackals.
   Some jackals are crows. **(Bank P.O. 1994)**
   Conclusions : I. Some dogs are crows.
   II. All dogs are crows.
2. **Statements** : Some children are adults.
   Some adults are old.
   Conclusions : I. Some children are not old.
   II. Some adults are not old.
3. **Statements** : All keys are locks.
   All locks are screws. **(Bank P.O. 1998)**
   Conclusions : I. All screws are keys.
   II. Some locks are keys.
4. **Statements** : All poets are readers.
   No reader is wise.
   Conclusions : I. No poet is wise.
   II. All readers are poets.
5. **Statements** : Some kites are horses.
   All horses are dogs.
   Conclusions : I. All dogs are horses.
   II. Some dogs are horses.
6. **Statements** : Some calendars are sticks.
   No stick is flower. **(Bank P.O. 1996)**
   Conclusions : I. Some calendars are flowers.
   II. No calendar is flower.
7. **Statements** : Most crops are machines.
   Some machines are fools.
   Conclusions : I. Some fools are machines.
   II. Some crops are fools.
8. **Statements** : Some flies are ants.
   All insects are ants.
   Conclusions : I. All flies are ants.
   II. Some ants are insects.
9. **Statements** : Some stones are cups.
   Some cups are black.
   Conclusions : I. Some black are not cups.
   II. Some cups are stones.
10. **Statements** : All goats are wolves.
    Some wolves are tigers.
    Conclusions : I. Some goats are tigers.
    II. Tigers which are wolves are not goats.
11. **Statements** : Some phones are watches.
    All watches are guns. **(Bank P.O. 1992)**
    Conclusions : I. All guns are watches.
    II. Some guns are phones.

12. Statements : All teachers are good.
Some women are teachers.
Conclusions : I. All good teachers are women.
II. Some women are good.

13. Statements : All roads are poles.
No pole is house.
Conclusions : I. Some roads are houses.
II. Some houses are poles.

14. Statements : Some pastries are toffees.
All toffees are chocolates. **(R.B.I. 1997)**
Conclusions : I. Some chocolates are toffees.
II. Some toffees are not pastries.

15. Statements : Some chairs are stools.
Table is a chair.
Conclusions : I. Some stools are chairs.
II. Table is not a stool.

16. Statements : All tigers are ships.
Some ships are cupboards.
Conclusions : I. Some tigers are cupboards.
II. Some cupboards are tigers.

17. Statements : Some vegetables are fruits.
No fruit is black. **(Bank P.O. 1998)**
Conclusions : I. Some fruits are vegetables.
II. No fruit is black.

18. Statements : Some aeroplanes are living beings.
Some non-living beings are ghosts.
Conclusions : I. Some aeroplanes are ghosts.
II. Some aeroplanes are not ghosts.

19. Statements : All dresses are shoes.
No shoe is brown.
Conclusions : I. No dresses are brown.
II. Some shoes are dresses.

20. Statements : Some boys are men.
No man is black. **(Bank P.O. 1997)**
Conclusions : I. Some boys are not black.
II. Some men are boys.

21. Statements : All stones are diamonds.
Some diamonds are pearls.
Conclusions : I. Some pearls are stones.
II. All diamonds are pearls.

22. Statements : Some parrots are crows.
No crow is green.
Conclusions : I. No parrot is green.
II. No crow is white.

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5. (*d*) : None of the conclusions follows as both contain the middle term.

6. (*d*) : Since one premise is particular, the conclusion must be particular. So, II cannot follow. Since one premise is negative, the conclusion must be negative. So, I cannot follow.

7. (*d*) : Since both the premises are particular, no conclusion follows.

8. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

9. (*d*) : Since both the premises are particular, no conclusion follows.

10. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

11. (*b*) : Since one premise is particular, the conclusion must be particular. So, only conclusion II follows.

12. (*b*) : Since one premise is particular, the conclusion must be particular. So, only conclusion II follows.

13. (*d*) : Since one premise is negative, the conclusion must be negative. So, neither conclusion follows.

14. (*d*) : Neither conclusion I nor II follows as both contain the middle term.

15. (*d*) : The first premise is an I type proposition. So, the middle term 'chairs' forming the subject is not distributed.

The second premise is an A type proposition. So, the middle term 'chairs' forming the predicate is not distributed.

Since the middle term is not distributed even once, no conclusion follows.

16. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

17. (*d*) : Since one premise is particular, the conclusion must be particular. So, II cannot follow. Since one premise is negative, the conclusion must be negative. So, I cannot follow.

18. (*d*) : Since both the premises are particular, no conclusion follows.

19. (*a*) : Since one premise is negative, the conclusion must be negative. So, only conclusion I follows.

20. (*a*) : Since one premise is negative, the conclusion must be negative. So, II does not follow and only I follows.

21. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

22. (*d*) : Since one premise is particular, the conclusion must be particular. So, neither I nor II follows.

23. (*d*) : Since the middle term is not distributed even once in the premises, no conclusion follows.

24. (*d*) **25.** (*b*) **26.** (*b*) **27.** (*a*) **28.** (*a*) **29.** (*d*) **30.** (*c*)

TYPE 2

(When more than two conclusions are given)

In this type of questions, two statements called premises are given, followed by four conclusions. The candidate is required to find out which of the conclusions logically follow from the given premises. More than one conclusion may also follow. In such questions, first the given statements are analysed. If the middle term is not distributed even once, no conclusion follows. Thus, the middle term must be distributed at least once. To derive the correct conclusions, we usually take the help of Venn diagrams. Also, no conclusion follows in the following cases :

(*i*) If both the premises are particular

(*ii*) If both the premises are negative

However, in some cases, more than one Venn diagrams may be possible. In such cases, all the possible Venn diagrams are drawn and the solution is derived from each of these separately. Finally, the solution common to all the diagrams is taken as the answer.

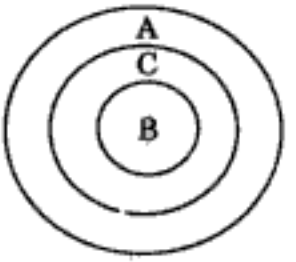
ILLUSTRATIVE EXAMPLES

Ex. 1. Statements : All books are cakes.
All cakes are apples.

Conclusions : I. Some cakes are books.
II. No cake is book.
III. Some apples are books.
IV. All apples are books.

(*a*) Only I follows
(*b*) Only either I or II follows
(*c*) Only I and III follow
(*d*) Only either III or IV follows
(*e*) None follows

Sol. For the given statements, the Venn diagram is as shown where B indicates books, C indicates cakes and A indicates apples.



Now, since B has a common area with C, so I follows while II does not. Also, B has a common area with A but does not entirely lie within A. So III follows while IV does not.

Thus, only I and III follow.

Hence, the answer is (*c*).

Ex. 2. Statements : Some flowers are apples.
Some apples are stones.

Conclusions : I. No flower is stone.
II. All apples are stones.
III. Some stones are flowers.
IV. No apple is flower.

(*a*) Only either I or III follows
(*b*) Only I and IV follow
(*c*) Only II and III follow
(*d*) Only I, III and IV follow
(*e*) None follows

Sol. Since both the statements or premises are particular, no conclusion follows.
Hence, the answer is (*e*).

Ex. 3. Statements : All leaves are papers.
Some papers are pictures.

Conclusions : I. All pictures are papers.
II. All pictures are leaves.
III. Some leaves are pictures.
IV. No leaf is a picture.

(*a*) Only I, III and IV follow
(*b*) Only II and III follow
(*c*) Only III and IV follow
(*d*) Only III follows
(*e*) None of these

Sol. Clearly, here the middle term is 'papers'. Now, the first premise is an A type proposition and distributes the subject only. So, the middle term 'papers' forming the predicate, is not distributed. The second premise is an I type proposition and distributes neither the subject nor the predicate. So, the middle term 'papers' forming the subject, is not distributed.

Since the middle term is not distributed even once in the premises, no conclusion follows.

Hence, the answer is (*e*).

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2. Statements : All windows are rods.
Some rods are frames.

Conclusions : I. All frames are rods.
II. All frames are windows.
III. Some windows are frames.
IV. No window is a frame.

(*a*) Only I follows (*b*) Only II and III follow
(*c*) Only either II or III follows (*d*) Only either I or IV follows
(*e*) None follows

3. Statements : Some clothes are marbles.
Some marbles are bags.

Conclusions : I. No cloth is a bag.
II. All marbles are bags.
III. Some bags are clothes.
IV. No marble is a cloth.

(*a*) Only either I or IV follows (*b*) Only either I or II follows
(*c*) Only either I or III follows (*d*) None follows
(*e*) All follow

4. Statements : Some pillows are curtains.
No curtain is a table.

Conclusions : I. No pillow is a table.
II. Some pillows are not tables.
III. Some curtains are pillows.
IV. No curtain is a pillow.

(*a*) Only I and III follow (*b*) Only II and III follow
(*c*) None follows (*d*) All follow
(*e*) Only either I or IV follows

5. Statements : Some frogs are bricks.
All bricks are cakes. **(S.B.I.P.O. 1997)**

Conclusions : I. Some cakes are not frogs.
II. Some cakes are frogs.
III. No cake is frog.
IV. All frogs are cakes.

(*a*) None follows (*b*) Only I and II follow
(*c*) Only I, II and IV follow (*d*) Only II, III and IV follow
(*e*) All follow

6. Statements : No parrot is crow.
All crows are bats. **(Bank P.O. 1994)**

Conclusions : I. Some bats are parrots.
II. All bats are parrots.
III. Some bats are crows.
IV. Some bats are not crows.

(*a*) None follows (*b*) Only I and II follow
(*c*) Only I, II and III follow (*d*) Only II, III and IV follow
(*e*) Only III and IV follow

7. Statements : Some students are brilliant.
Sushma is a student.

Conclusions : I. Some students are dull.
II. Sushma is brilliant.
III. Sushma is dull.
IV. Students are usually brilliant.

(*a*) Only I follows
(*b*) Only I and II follow
(*c*) Only II follows
(*d*) None follows
(*e*) All follow

8. Statements : All rats are cows.
No cow is white. **(Bank P.O. 1997)**

Conclusions : I. No white is rat.
II. No rat is white.
III. Some whites are rats.
IV. All cows are rats.

(*a*) None follows
(*b*) Only I and IV follow
(*c*) Only II and IV follow
(*d*) Only IV follows
(*e*) None of these

9. Statements : Some camels are ships.
No ship is a boat.

Conclusions : I. Some ships are camels.
II. Some boats are camels.
III. Some camels are not boats.
IV. All boats are camels.

(*a*) Only I follows
(*b*) Only II and III follow
(*c*) Only I and III follow
(*d*) Only I and II follow
(*e*) Only either III or IV follows

10. Statements : Some trees are pens.
All pens are erasers. **(Bank P.O. 1995)**

Conclusions : I. All erasers are pens.
II. All trees are pens.
III. Some trees which are not pens are erasers.
IV. Some erasers are trees.

(*a*) All follow
(*b*) Only I and II follow
(*c*) Only III and IV follow
(*d*) Only IV follows
(*e*) None of these

11. Statements : All chairs laugh.
Some birds laugh.

Conclusions : I. All chairs are birds.
II. Some birds are chairs.
III. Those who do not laugh are not chairs.
IV. Some birds do not laugh.

(*a*) Only II follows
(*b*) Only I follows
(*c*) Only II and IV follow
(*d*) Only IV follows
(*e*) None follows

12. Statements : No educationists are researchers.
All researchers are teachers. **(Bank P.O. 1996)**

Conclusions : I. No teacher is researcher.
II. No teacher is educationist.
III. Some researchers are teachers.
IV. Some teachers are researchers.

(*a*) Only II follows (*b*) None follows
(*c*) Either I or III follows (*d*) Only III and IV follow
(*e*) All follow

13. Statements : All bags are chalks.
All chalks are bottles. **(S.B.I.P.O. 1997)**

Conclusions : I. Some bottles are bags.
II. All bags are bottles.
III. All bottles are bags.
IV. Some chalks are not bags.

(*a*) Only I, II and IV follow (*b*) Only I, III and IV follow
(*c*) Only II, III and IV follow (*d*) All follow
(*e*) None of these

14. Statements : No fan is shirt.
All shirts are trousers.

Conclusions : I. All fans are trousers.
II. No fan is trouser.
III. Some trousers are shirts.
IV. All trousers are shirts.

(*a*) Only I follows (*b*) Only II follows
(*c*) Only either I or II follows (*d*) Only III and IV follow
(*e*) None of these

15. Statements : Some cubs are tigers.
Some tigers are goats. **(Bank P.O. 1994)**

Conclusions : I. Some cubs are goats.
II. No cub is goat.
III. All cubs are goats.
IV. All goats are cubs.

(*a*) Only either I or II follows (*b*) Only either II or III follows
(*c*) Only either I or IV follows (*d*) Only either II or IV follows
(*e*) None of these

16. Statements : Some coolers are watches.
No watch is bed.

Conclusions : I. No watch is cooler.
II. No cooler is watch.
III. Some watches are beds.
IV. Some coolers are beds.

(*a*) None follows (*b*) Only I and IV follow
(*c*) Only either II or III follows (*d*) Only either III or IV follows
(*e*) Only either II or IV follows

17. Statements : Some men are goats.
All goats are jackals. **(Bank P.O. 1995)**

Conclusions : I. Some men are jackals.
II. Some jackals are men.
III. All jackals are goats.
IV. Some goats are men.

(*a*) Only I and II follow (*b*) Only III and IV follow
(*c*) Only IV follows (*d*) All follow
(*e*) None of these

18. Statements : All sparrows are koels.
No koel is parrot.

Conclusions : I. No sparrow is parrot.
II. Some sparrows are parrots
III. All koels are sparrows.
IV. Some parrots are sparrows.

(*a*) Only I follows (*b*) None follows
(*c*) Only II and III follow (*d*) Only II and IV follow
(*e*) None of these

19. Statements : All typists are stenographers.
Some stenographers are boys.

Conclusions : I. All boys are stenographers.
II. All boys are typists.
III. Some typists are boys.
IV. No typist is a boy.

(*a*) Only I follows (*b*) Only II and III follow
(*c*) Only either II or III follows (*d*) Only either I or IV follows
(*e*) None follows

Directions (*Questions 20 to 26*) : *In each question below are given two statements followed by five conclusions numbered (a), (b), (c), (d) and (e). You have to take the two given statements to be true even if they seem to be at variance from the commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements.*

20. Statements : All novels are stories.
All stories are songs.

Conclusions : (*a*) All novels are songs.
(*b*) Some novels are songs.
(*c*) Some songs are novels.
(*d*) All stories are not songs.
(*e*) None of these

21. Statements : All belts are socks.
All shirts are belts.

Conclusions : (*a*) All shirts are socks.
(*b*) Some belts are shirts.

28. Statements : All teachers are doctors.
All doctors are engineers.
All engineers are students. **(Bank P.O. 1995)**

Conclusions : I. Some students are teachers.
II. All doctors are students.
III. Some engineers are teachers.
IV. All doctors are teachers.

(*a*) Only I and II follow
(*b*) Only I and III follow
(*c*) Either I or II, and III follow
(*d*) Either II or IV follows
(*e*) None of these

29. Statements : Some birds are insects.
All birds are butterflies.
All insects are snakes. **(S.B.I.P.O. 1995)**

Conclusions : I. Some snakes are birds.
II. Some butterflies are insects.
III. Some snakes are butterflies.
IV. Some insects are birds.

(*a*) None follows
(*b*) Either I or III follows
(*c*) All follow
(*d*) Only IV follows
(*e*) None of these

30. Statements : Some bananas are apples.
All apples are tomatoes.
Some potatoes are tomatoes.

Conclusions : I. Some bananas are tomatoes.
II. Some potatoes are bananas.
III. Some apples are potatoes.
IV. Some apples are bananas.

(*a*) Only I follows
(*b*) Only I and II follow
(*c*) Only I and IV follow
(*d*) Either II or III, and I follow
(*e*) None of these

31. Statements : All boxes are pans.
Some boxes are jugs.
Some jugs are glasses.

Conclusions : I. Some glasses are boxes.
II. No glass is box.
III. Some jugs are pans.
IV. No jug is pan.

(*a*) Only I and II follow
(*b*) Either I or II, and III follow
(*c*) Only III follows
(*d*) Either I or II, and either III or IV follow
(*e*) None of these

32. Statements : Some books are papers.
Some papers are cars.
No car is white. **(Bank P.O. 1996)**

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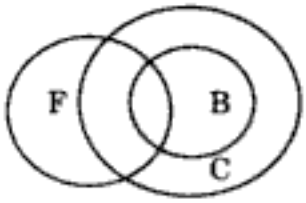
2. (*e*) : Here the first premise is an A type proposition and distributes only the subject. So, the middle term 'rods' forming its predicate is not distributed. The second premise is an I type proposition and distributes neither the subject nor the predicate. So, the middle term 'rods' forming the subject is not distributed. Since the middle term is not distributed even once in the premises, no conclusion follows.

3. (*d*) : Since both the premises are particular, no conclusion follows.

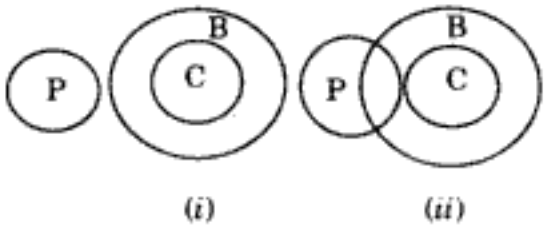
4. (*b*) : Clearly, for the given data two Venn diagrams A and B are possible.

From diagram A, conclusions I, II and III follow.
From diagram B, conclusions II and III follow.
The solution common to the two diagrams is : II and III follow.

5. (*b*) : Clearly, it follows from the Venn diagram that some cakes are frogs and some are not *i.e.* conclusions I and II follow but conclusions III and IV cannot follow.

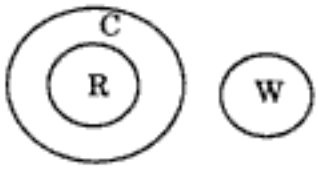


6. (*e*) : Clearly, two Venn diagrams (*i*) and (*ii*) are possible as shown.
From diagram (*i*), conclusions III and IV follow.
From diagram (*ii*), conclusions I, III and IV follow.
The common solution is : Only III and IV follow.



7. (*a*) : Clearly the area not common to Students and Brilliant will represent the dull students in the Venn diagram. So, conclusion I follows.

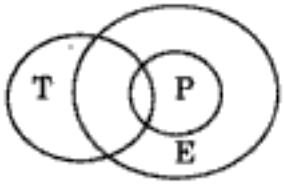
8. (*e*) : Clearly, in the adjoining Venn diagram, since R and W are disjoint, so I and II follow while III does not.
Since C does not lie entirely within R, so IV does not follow.



9. (*c*) : Clearly, two Venn diagrams (i) and (ii) are possible as shown :

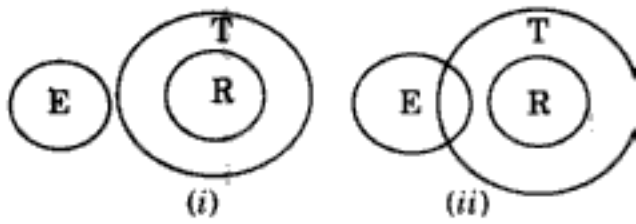
From (*i*), conclusions I and III follow.
From (*ii*), conclusions I, II and III follow.
The common solution is : Only I and III follow.

10. (*c*) : Since E and T do not lie entirely within P, so neither I nor II follows. Since some area common to T and E lies outside P, so III follows.
Also, E and T have a common area.
So, IV also follows.

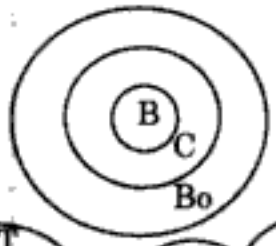


11. (*e*) : Since the middle term is not distributed even once in the premises, no conclusion follow

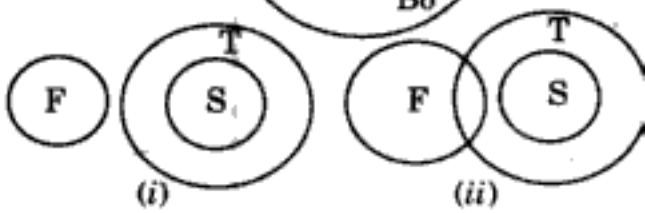
12. (*d*) : Clearly, two Venn diagrams (*i*) and (*ii*) are possible as shown.
From (*i*), II, III and IV follow.
From (*ii*), III and IV follow.
The common solution is : Only III and IV follow.



13. (*a*) : Clearly, it follows from the Venn diagram that only conclusions I, II and IV follow.

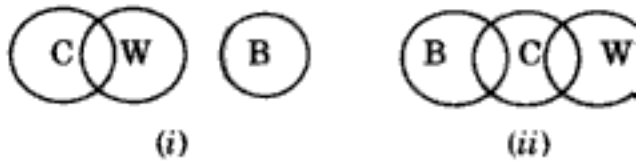


14. (*e*) : Clearly, two Venn diagrams (*i*) and (*ii*) are possible as shown.
From (*i*), II and III follow.
From (*ii*), only III follows.
The common solution is : Only III follows.

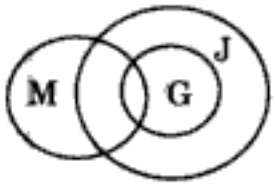


15. (*e*) : Since the two premises are particular, no conclusion follows.

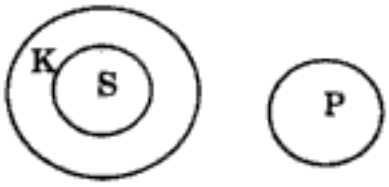
16. (*a*) : Clearly, two Venn diagrams (*i*) and (*ii*) are possible as shown.
From (*i*), none of the conclusions follows.
From (*ii*), only IV follows.
Thus, the common solution is : None follows.



17. (*e*) : Since J and M have a common area, so both I and II follow.
Since G and M have a common area, so IV follows.
However, since J does not lie entirely within G, so III does not follow.

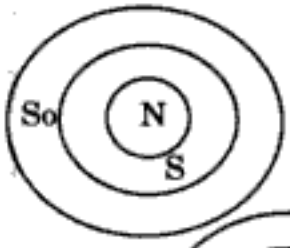


18. (*a*) : Since S and P are disjoint, so I follows while II and IV do not.
Since K does not lie entirely within S, so III does not follow.

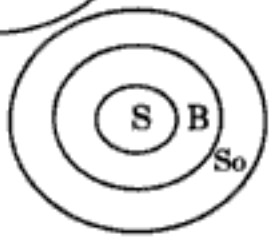


19. (*e*) : Since the middle term is not distributed even once in the premises, no conclusion follow

20. (*a*) : Clearly, since the area for novels (N) lies entirely within the area for songs (So), it follows that all novels are songs. So, some songs are novels. But only one conclusion has to follow and the most logical conclusion is 'All novels are songs'. So, (*a*) follows.



21. (*a*) : Here S denotes shirts, B denotes belts and So denotes socks. Then, clearly conclusion (*a*) follows with the same explanation as in Q. 20.



22. (*e*) : Since both the premises are particular, no conclusion follows.

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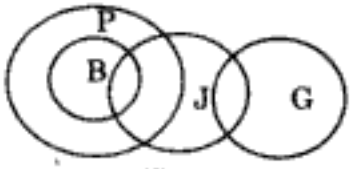
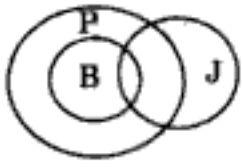
From (*iii*), conclusions I, II, III and IV follow.

The common solution is : Only I and IV follow.

31. (*b*) : Clearly, the following two Venn diagrams are possible :



(*i*)



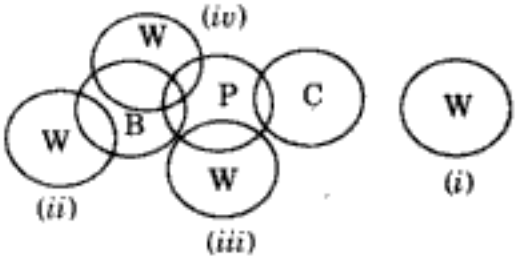
(*ii*)

From, (*i*), conclusions II and III follow.

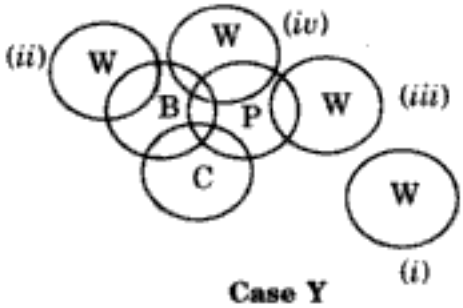
From (*ii*), conclusions I and III follow.

Combining the two, we have : Either I or II, and III follow.

32. (*a*) : Clearly two cases X and Y arise with possibilities (*i*), (*ii*), (*iii*) and (*iv*).



Case X



Case Y

In both cases, we have :

From (*i*), only I and II follow.

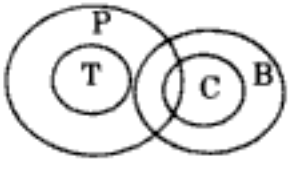
From (*ii*), only I, II and IV follow.

From (*iii*), only I and III follow.

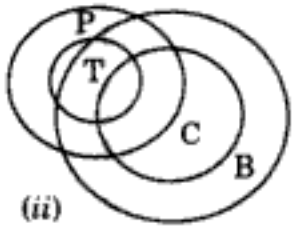
From (*iv*), only I, III and IV follow.

The common solution in all the above is : Only I follows.

33. (*d*) : Clearly, the following Venn diagrams are possible :



(*i*)



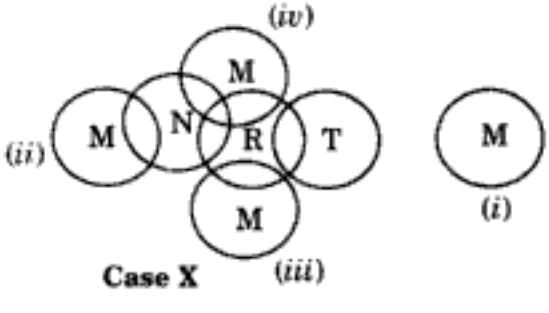
(*ii*)

From (*i*), conclusions II and III follow.

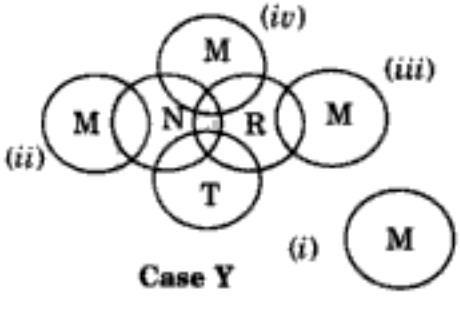
From (*ii*), conclusions I and III follow.

Combining the two, we get : Either I or II, and III follow.

34. (*d*) : Clearly, two cases X and Y arise with possibilities (*i*), (*ii*), (*iii*) and (*iv*).



Case X



Case Y

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2. STATEMENT — ARGUMENTS

In this type of questions, a statement concerned with a political, social or economic issue is given, followed by two arguments, generally one in favour of and one against the statement. The candidate is required to analyse first the statement, then the arguments in context of the statement and decide which of the arguments holds strong, and helps, formulate the most appropriate opinion on the subject.

ILLUSTRATIVE EXAMPLES

Directions : ***Each of the following questions consists of a statement followed by two arguments I and II.***

Give answer (a) if only argument I is strong; (b) if only argument II is strong; (c) if either I or II is strong; (d) if neither I nor II is strong and (e) if both I and II are strong.

Ex. 1. Statement : Should number of holidays of government employees be reduced ?

Arguments : I. Yes. Our government employees are having maximum number of holidays among the other countries of the world.

II. Yes. It will lead to increased productivity of government offices.

(Bank P.O. 1998)

Sol. Clearly, a comparison with the system in other countries is no strong a criteria for taking a decision on the issue. So, argument I does not hold. Also, reducing the number of holidays implies more working hours which will surely increase productivity.

Hence, the answer is (*b*).

Ex. 2. Statement : Should foreign films be banned in India ?

Arguments : I. Yes. They depict an alien culture which adversely affects our values.

II. No. Foreign films are of a high artistic standard.

Sol. Clearly foreign films depict the alien culture but this only helps in learning more. So, argument I does not hold. Also, the reason stated in argument II is not strong enough in contradicting the ban. So, it also does not hold.

Thus, the answer is (*d*).

Ex. 3. Statement : Should there be reservation of seats and posts on communal basis ? **(M.A.T. 1997)**

Arguments : I. Yes. It will check most of the inter-communal biases.

II. No. Ours is a secular state.

Sol. Clearly, reservations on communal basis will increase inter communal biases. So, argument I is vague. Also, it will be against the secular policy, according to which no communal group is given preference over the others. So, only argument II holds.

Hence, the answer is (*b*).

Ex. 4. Statement : Should young entrepreneurs be encouraged ?

Arguments : I. Yes. They will help in industrial development of the country.

II. Yes. They will reduce the burden on employment market.

Sol. Clearly, encouraging the young entrepreneurs will open up the field for the establishment of new industries. Thus, it shall help in industrial development and not only employ the entrepreneurs but create more job opportunities for others as well. So, both the arguments hold strong.

Hence, the answer is (*e*).

Ex. 5. Statement : Should government stop spending huge amounts of money on international sports ? **(Bank P.O. 1996)**

Arguments : I. Yes. This money can be utilised for upliftment of the poor.

II. No. Sportspersons will be frustrated and will not get international exposure.

Sol. Clearly, spending money on sports cannot be avoided merely because it can be spent on socio-economic problems. So, argument I does not hold. Also if the expenses on sports are curtailed, the sportspersons would face lack of facilities and training and our country will lag behind in international sports competitions.

Hence, the answer is (*b*).

Ex. 6. Statement : Should octroi be abolished ?

Arguments : I. Yes. It will eliminate an important source of corruption.

II. No. It will adversely affect government revenues.

Sol. 'Octroi' is a custom duty. If octroi is abolished, the practice of bringing in things from foreign countries illegally will be abolished. So, argument I holds strong. If octroi is abolished, the income to the government in the way of the duty paid shall be diminished. So, argument II also holds strong.

Hence, the answer is (*e*).

Ex. 7. Statement : Should taxes on colour television be further increased ?

Arguments : I. Yes. Colour television is a luxury item and only rich people buy them.

II. No. Televisions are bought by the poor too.

Sol. Clearly, taxes on an item cannot be increased or decreased on the basis of the financial position of the people who buy it. So, both arguments I and II do not hold strong.

Hence, the answer is (*d*).

Ex. 8. Statement : Should English be the medium of instruction for higher education in India ?

Arguments : I. Yes. Even in advanced countries like England and U.S.A., the medium of instruction is English for higher education.

II. Yes. English is a much widely spoken language in the world.

Sol. Clearly, the pursuance of a policy in India cannot be based on the pretext that it is followed in other advanced countries because every country has its own environment, situations and resources. So, argument I is vague. Clearly, English needs to be pursued in higher education because being widely spoken it shall ensure uniformity and prepare the students better. So, argument II holds.

Hence, the answer is (*b*).

EXERCISE 2A

Directions : ***Each question given below consists of a statement, followed by two arguments I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.***

Give answer (a) if only argument I is strong; (b) if only argument II is strong; (c) if either I or II is strong; (d) if neither I nor II is strong and (e) if both I and II are strong.

1. **Statement** : Should there be a ban on product advertising ?
   Arguments : I. No. It is an age of advertising. Unless your advertisement is better than your other competitors, the product will not be sold.
   II. Yes. The money spent on advertising is very huge and it inflates the cost of the product. **(S.B.I.P.O. 1995)**
2. **Statement** : Should a total ban be put on trapping wild animals ?
   Arguments : I. Yes. Trappers are making a lot of money.
   II. No. Bans on hunting and trapping are not effective.
3. **Statement** : Should telecasting feature films be stopped ?
   Arguments : I. Yes. Young children are misguided by the feature films.
   II. No. This is the only way to educate the masses.
4. **Statement** : Should school education be made free in India ? **(S.B.I.P.O. 1997)**
   Arguments : I. Yes. This is the only way to improve the level of literacy.
   II. No. It would add to the already heavy burden on the exchequer.
5. **Statement** : Is paying ransom or agreeing to the conditions of kidnappers of political figures, a proper course of action ?
   Arguments : I. Yes. The victims must be saved at all cost.
   II. No. It encourages the kidnappers to continue their sinister activities.
6. **Statement** : Should government jobs in rural areas have more incentives ?
   Arguments : I. Yes. Incentives are essential for attracting government servants there.
   II. No. Rural areas are already cheaper, healthier and less complex than big. So, why offer extra incentives !
7. **Statement** : Should India stop missile development ?
   Arguments : I. Yes. The U.S.A. desires so.
   II. No. The nation must always remain up-to-date in its defence preparedness.
8. **Statement** : Should we scrap the 'Public Distribution System' in India ?
   Arguments : I. Yes. Protectivism is over, everyone must get the bread on his/her own.
   II. Yes. The poor do not get any benefit because of corruption. **(Bank P.O. 1998)**
9. **Statement** : Should India go in for computerisation in industry ?
   Arguments : I. No. Computerisation demands a lot of money. We should not waste money on it.
   II. Yes. When advanced countries are introducing computers in India, how can India afford to lag behind ?

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Voltage across R_S, $V_S = I_D R_S$

Since gate current is negligibly small, the gate terminal is at *d.c.* ground *i.e.*, $V_G = 0$.

$\therefore \quad V_{GS} = V_G - V_S = 0 - I_D R_S$

or $\quad V_{GS} = -I_D R_S$

Thus, bias voltage V_{GS} keeps gate negative *w.r.t.* source.

Operating point. The *d.c.* operating point (*i.e.*, zero signal I_D and V_{DS}) can be easily determined. Since the parameters of *JFET* are usually known, zero signal I_D can be calculated from the following relation :

$$I_D = I_{DSS}\left[1 - \frac{V_{GS}}{V_{GS(off)}}\right]^2$$

Also $\quad V_{DS} = V_{DD} - I_D (R_D + R_S)$

Thus, *d.c.* conditions of *JFET* amplifier are fully specified.

(*ii*) Potential divider method. Fig. 32.20 shows potential divider method of biasing a *JFET*. This circuit is identical to that used for a transistor. The resistors R_1 and R_2 form a voltage divider across drain supply V_{DD}. The voltage V_2 across R_2 provides the necessary bias.

$$V_2 = \frac{V_{DD}}{R_1 + R_2} \times R_2$$

Now $\quad V_2 = V_{GS} + I_D R_S$

or $\quad V_{GS} = V_2 - I_D R_S$

The circuit is so designed that $I_D R_S$ is larger than V_2 so that V_{GS} is negative. This provides correct bias voltage. We can find the operating point as under :

$$I_D = \frac{V_2 - V_{GS}}{R_S}$$

and $\quad V_{DS} = V_{DD} - I_D (R_D + R_S)$

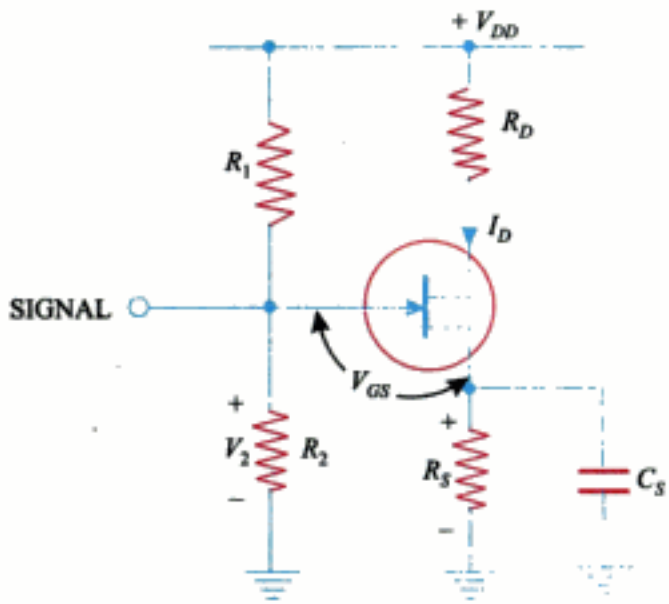

Fig. 32.20

32.16. *JFET* CONNECTIONS

There are three leads in a *JFET viz.*, source, gate and drain terminals. However, when a *JFET* is to be connected in a circuit, we require four terminals; two for the input and two for output. This difficulty is overcome by making one terminal of the *JFET* common to both input and output terminals. Accordingly; a *JFET* can be connected in a circuit in the following three ways :

(*i*) Common source connection

(*ii*) Common gate connection

(*iii*) Common drain connection

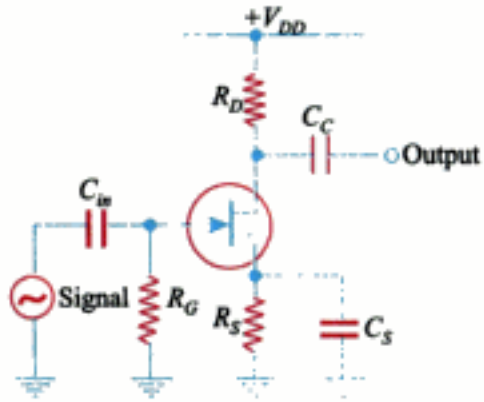

Fig. 32.21

The common source connection is the most widely used arrangement. It is because this connection provides high input impedance, good voltage gain and a moderate output impedance. However, the circuit pro-

32. Statement : Should India manufacture atom bombs ?

Arguments : I. Yes. It is imperative to protect the sovereignty and integrity of the country.

II. No. This will create imbalance in the power of nations in this region.

33. Statement : Should computers be used in all possible sectors in India ?

Arguments : I. Yes. It will bring efficiency and accuracy in the work.

II. No. It will be an injustice to the monumental human resources which are at present underutilised.

34. Statement : Should family planning be made compulsory in India ?

Arguments : I. Yes. Looking to the miserable conditions in India, there is no other go.

II. No. In India there are people of various religions and family planning is against the tenets of some of the religions.

(Hotel Management, 1992)

35. Statement : Should films be included in the Concurrent List ?

Arguments : I. Yes. It will give respect to the views of the states.

II. No. It will deteriorate the standard of films.

36. Statement : Should there be only one university throughout India ?

Arguments : I. Yes. This is the only way to bring about uniformity in the educational standards.

II. No. This is administratively impossible.

37. Statement : Should there be a world government ? **(M.B.A. 1996)**

Arguments : I. Yes. It will help in eliminating tensions among the nations.

II. No. Then, only the developed countries will dominate in the government.

38. Statement : Should workers be allowed to participate in the management of factories in India ?

Arguments : I. Yes. It is the present management theory.

II. No. Many workers are illiterate and so their contributions will not be of any value.

39. Statement : Are educational institutions responsible for unrest among the youth ?

Arguments : I. Yes. There is no discipline in educational institutions.

II. No. There are no disciplinary problems in educational institutions.

40. Statement : Should the political parties be banned ?

Arguments : I. Yes. It is necessary to teach a lesson to the politicians.

II. No. It will lead to an end of democracy.

41. Statement : Should jobs be linked with academic degrees and diplomas ?

Arguments : I. No. A very large number of persons with meagre academic qualifications will apply.

II. No. Importance of higher education will be diminished.

42. Statement : Should we scrap the system of formal education beyond graduation ?

Arguments : I. Yes. It will mean taking employment at an early date.
II. No. It will mean lack of depth of knowledge. **(M.B.A. 1997)**

43. Statement : Is Governorship better than Chief Ministership ?
Arguments : I. Yes. It is the highest post in a state.
II. No. The Chief Minister commands more power.

44. Statement : Should all news be controlled by Govenment in a democracy ?
Arguments : I. Yes. Variety of news only confuses people.
II. No. Controlled news loses credibility.

45. Statement : Should there be no place of interview in selection ?
Arguments : I. Yes. It is very subjective in assessment.
II. No. It is the only instrument to judge candidates' motives and personality.

46. Statement : Should higher education be completely stopped for sometime ?
Arguments : I. No. It will hamper the country's future progress.
II. Yes. It will reduce the educated unemployment.

47. Statement : Should mercy death be legalized ?
Arguments : I. Yes. Patients undergoing terrible suffering and having absolutely no chance of recovery should be liberated from suffering through mercy death.
II. No. Even mercy death is a sort of killing and killing can never be legalized.

48. Statement : Should the institution of marriages be abolished ?
Arguments : I. Yes. It is already showing cracks.
II. No. It is necessary for the survival of the society.

49. Statement : Should non-vegetarian food be totally banned in our country ?
Arguments : I. Yes. It is expensive and therefore it is beyond the means of most people in our country.
II. No. Nothing should be banned in a democratic country like ours.

50. Statement : Should election expenses to Central and State Legislatures be met by the government ?
Arguments : I. Yes. It will put an end to political corruption.
II. No. It is not good in any country.

ANSWERS

1. (*e*) : Clearly, it is the advertisement which makes the customer aware of the qualities of the product and leads him to buy it. So, argument I is valid. But at the same time,

Arguments : I. Yes. It will check most of the inter-communal biases.
II. No. Ours is a secular state.

Sol. Clearly, reservations on communal basis will increase inter communal biases. So, argument I is vague. Also, it will be against the secular policy, according to which no communal group is given preference over the others. So, only argument II holds.

Hence, the answer is (*b*).

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Arguments : I. Yes. Most of the energy sources used at present are exhaustible.
II. No. Harnessing solar energy requires a lot of capital, which India lacks in.

11. Statement : Should public holidays be declared on demise of important national leaders ? **(S.B.I.P.O. 1995)**

Arguments : I. No. Such unscheduled holidays hamper national progress.
II. Yes. People would like to pay their homage to the departed soul.

12. Statement : Should cutting of trees be banned altogether ?

Arguments : I. Yes. It is very much necessary to do so to restore ecological balance.
II. No. A total ban would harm timber based industries.

13. Statement : Is the Government justified in spending so much on defence ?

Arguments : I. Yes. Safety of the country is of prime importance.
II. No. During peace, this money could be used for the development of the country.

14. Statement : Should judiciary be independent of the executive ?

Arguments : I. Yes. This would help curb the unlawful activities of the executive.
II. No. The executive would not be able to take bold measures.

15. Statement : Should so much money be spent on advertisements ?

Arguments : I. Yes. It is an essential concomitent in a capitalist economy.
II. No. It leads to wastage of resources.

16. Statement : Should all the transport corporations be handed over to the private organisations ?

Arguments : I. Yes. There will be a significant change in the quality and punctuality of services.
II. No. There would not be job security for the employees at all the levels. **(Bank P.O. 1996)**

17. Statement : Should loyalty be the only criterion for promotion in any organisation ?

Arguments : I. Yes. Without loyal men, no organisation can function.
II. No. It leads to hypocrisy and partiality.

18. Statement : Should untouchability be banned in India ?

Arguments : I. No. Menial people deteriorate the living standard of society.
II. Yes. All people should be equally treated in a democratic country like India.

19. Statement : Should there be a complete ban on manufacture of firecrackers in India ? **(S.B.I.P.O. 1997)**

Arguments : I. No. This will render thousands of workers jobless.
II. Yes. The firecracker manufacturers use child labour to a large extent.

20. Statement : Is caste based reservation policy justified ?

Arguments : I. Yes. The step is a must to bring the underprivileged at par with the privileged ones.
II. No. It obstructs the establishment of a classless society.

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32. Statement : Should the government levy tax on agricultural income also ?
Arguments : I. Yes. That is the only way to fill government coffers.
II. No. Eighty percent of our population live in rural areas.
(S.B.I.P.O. 1995)

33. Statement : Should coal engines be replaced by electric engines in trains ?
Arguments : I. Yes. Coal engines cause a lot of pollution.
II. No. India does not produce enough electricity to fulfil its domestic needs also.

34. Statement : Should women be provided more job opportunities ?
Arguments : I. No. They are entrusted with household jobs.
II. Yes. They should also go into the outside world.

35. Statement : Should personal tax be abolished in India ?
Arguments : I. Yes. It will motivate people to earn more.
II. No. Individuals must learn to share their wealth with other people.

36. Statement : Should judicial activism be discouraged ? **(Bank P.O. 1998)**
Arguments : I. No. If we leave everything in the hands of executive, justice may be a distant dream.
II. Yes. Judiciary should mind its own business. Executive will take its own course.

37. Statement : Should officers accepting bribe be punished ?
Arguments : I. No. Certain circumstances may have compelled them to take bribe.
II. Yes. They should do the job they are entrusted with, honestly.

38. Statement : Are nuclear families better than joint families ?
Arguments : I. No. Joint families ensure security and also reduce the burden of work.
II. Yes. Nuclear families ensure greater freedom

39. Statement : Should India give away Kashmir to Pakistan ?
Arguments : I. No. Kashmir is a beautiful state. It earns a lot of foreign exchange for India.
II. Yes. This would help settle conflicts.

40. Statement : Should India have no military force at all ?
Arguments : I. No. Other countries in the world do not believe in non-violence.
II. Yes. Many Indians believe in non-violence.

41. Statement : Should students' union in universities be abolished ?
Arguments : I. Yes. Students can pay full attention to their career development.
II. No. All the great leaders had been students' union leaders.
(Bank P.O. 1996)

42. Statement : Should higher education be reserved for deserving few ?
Arguments : I. No. It will increase unemployment.
II. Yes. It will minimise wastage in higher education.

43. Statement : Should those who receive dowry, despite the law prohibiting it, be punished ?

Arguments : I. Yes. Those who violate the law, must be punished.

II. No. Dowry system is firmly rooted in the society since time immemorial.

44. Statement : Should all refugees, who make unauthorised entry into a country, be forced to go back to their homeland ?

Arguments : I. Yes. They make their colonies and occupy a lot of land.

II. No. They leave their homes because of hunger or some terror and on human grounds, should not be forced to go back.

45. Statement : Should the system of Lok Adalats and mobile courts be encouraged in India ?

Arguments : I. Yes. It helps to grant speedy justice to the masses.

II. No. These courts are usually partial in granting justice.

46. Statement : Should the tuition fees in all post-graduate courses be hiked considerably ? **(S.B.I.P.O. 1997)**

Arguments : I. Yes. This will bring in some sense of seriousness among the students and will improve the quality.

II. No. This will force the meritorious poor students to stay away from post-graduate courses.

47. Statement : Should smoking be prohibited ?

Arguments : I. Yes. It is wrong to smoke away millions of money.

II. No. It will throw thousands of workers in the tobacco industry out of employment.

48. Statement : Should selection tests be of the objective rather than of the descriptive type ?

Arguments : I. Yes. The assessment of answers to objective type questions is fair and impartial.

II. No. The descriptive type test is certainly a better tool than the objective type test.

49. Statement : Should education be made compulsory for all children upto the age of 14 ? **(M.A.T. 1997)**

Arguments : I. Yes. This will help to eradicate the system of forced employment of these children.

II. Yes. This would increase the standard of living.

50. Statement : Should religion be taught in our schools ?

Arguments : I. No. Ours is a secular state.

II. Yes. Teaching religion helps inculcate moral values among children.

ANSWERS

1. (*a*) : Clearly, health care services must be looked after by the Government and opening well-equipped hospitals in every area would surely provide better health services to the citizens. So, argument I is valid. Also, it is not an impractical task and can be achieved by the Government. So, argument II is vague.

2. (*c*) : Clearly, indulgement in politics trains the students for future leadership but its ways them from the studies. So, either of the arguments I or II can hold.

3. (*a*) : Learning martial arts is necessary for girls for self-defence. So, argument I holds. However, argument II is vague since a training in these arts has nothing to do with their feminine grace.

4. (*b*) : Clearly, the first argument is not a strong reason in support of the statement. Also, it is not possible to analyse the really deserving and not deserving. So, argument II holds strong.

5. (*c*) : Religion binds people together through the name of God and human values. But it may also develop fanaticism and ill-will among people. So, both the arguments hold strong.

6. (*b*) : Clearly, the pursuance of a policy in India cannot be based on the pretext that it is followed in other countries because every country has its own environment and situations. So, argument I is vague. But increasing the age of retirement is indeed a genuine demand of most of the employees to be self-dependent throughout. So, argument II holds.

7. (*a*) : Clearly, shifting agriculture is a practice in which a certain crop is grown on a land and when it becomes infertile it is left bare and another piece of land is chosen. Clearly, it is a wasteful practice. So, only argument I holds.

8. (*a*) : Before indulging in new development programme it is much necessary to plan the exact target, policies and their implementation and the allocation of funds which shows the right direction to work. So, argument I holds strong. Also, planning ensures full utilisation of available resources and funds and a stepwise approach towards the target. So, spending a part of money on it is no wastage. Thus, argument II is not valid.

9. (*a*) : Clearly, India can export only the surplus and those which can be saved from the luxury needs to pay for its import. Encouragement to export cannot lead to shortages as it shall provide the resources for imports. So, only argument I holds.

10. (*a*) : Clearly, harnessing solar energy will be helpful as it is an inexhaustible resource unlike other resources. So, argument I holds. But argument II is vague as solar energy is the cheapest form of energy.

11. (*a*) : Clearly, unscheduled and untimely holidays would naturally cause the work to suffer. So, argument I holds strong. Also, a holiday is not necessary to pay homage to someone. So, argument II is vague.

12. (*e*) : Clearly, trees play a vital role in maintaining ecological balance and so must be preserved. So, argument I holds. Also, trees form the basic source of timber and a complete ban on cutting of trees would harm timber based industries. So, only a controlled cutting of trees should be allowed and the loss replenished by planting more trees. So, argument II is also valid.

13. (*a*) : Clearly, defence is necessary for the safety of the country, which is of prime importance. So, argument I holds. Also, a country can concentrate on internal progress and development only when it is safe from external aggressions. So, argument II is not valid.

14. (*a*) : Clearly, independent judiciary is necessary for impartial judgement so that the Executive does not take wrong measures. So, only argument I holds.

15. (*a*) : Clearly, the advertisements are the means to introduce people with the product and its advantages. So, argument I holds strong. But argument II is vague because advertisements are an investment for better gain and not a wastage.

16. (*e*) : Since both the arguments contain a strong reason in explanation of the statement, so both I and II hold.

17. (*d*) : Clearly, the argument in support of the statement is quite vague. Also, when loyalty is considered, hypocrisy does not matter much as the fact that efficiency is neglected. So, the arguments are not strong enough.

18. (*b*) : Clearly, there is no question of 'menial' when all the persons are born equal. So, only argument II holds.

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exercise its influence over the other and prevent its malfunctioning. So, both I and II do not hold strong.

37. (*b*) : Clearly, officers are paid duly for the jobs they do. So, they must do it honestly. Thus, argument II alone holds.

38. (*e*) : Clearly, with so many people around in a joint family, there is more security. Also, work is shared. So, argument I holds. In nuclear families, there are lesser number of people and so lesser responsibilities and more freedom.

39. (*a*) : Clearly, India cannot part with its state that is a major foreign exchange earner to it. So, argument I holds strong. Further, giving away a piece of land unconditionally and unreasonably is no solution to settle disputes. So, argument II is vague.

40. (*d*) : Clearly, India needs to have military force to defend itself against the threat of other military powers in the world. So, both the arguments do not hold strong.

41. (*a*) : Clearly, abolishing students' union would relieve the students of the unnecessary activities and enable them to concentrate well on studies. So, argument I holds. However, it is not that participation in students' unions only can make one a great leader. So, argument II is vague.

42. (*b*) : Clearly, higher education in no way reduces unemployment. So, argument I is vague. If higher education is imparted to only those who are worth it, the wasteful expenditures on undeserving shall be reduced. So, argument II also holds.

43. (*a*) : Clearly, laws are made to ensure that no person pursues the practice. So, persons who violate the laws need to be punished. Thus, argument I holds. A wrong practice, no matter how firmly rooted, needs to be ended. So, argument II is vague.

44. (*b*) : Clearly, refugees are people forced out of their homeland by some misery and need shelter desperately. So, argument II holds. Argument I against the statement, is vague.

45. (*a*) : Courts are meant to judge impartially. So, argument II is vague. The system of local courts shall speed up the justice. So, argument I holds.

46. (*b*) : A hike in fees is no means to make the students more serious in studies. So, argument I is vague. However, with the increase in fees, poor meritorious students would not be able to afford post-graduate studies. So, argument II holds.

47. (*d*) : Clearly, smoking needs to be abolished because it is injurious to health and not only to save money. So, argument I is vague. Clearly, to provide employment one cannot continue a hazardous task. So, argument II is also vague.

48. (*a*) : Clearly, judgement in subjective tests depends upon the individual who judges while that in objective tests is fair and impartial. So, argument I alone holds and argument II is vague.

49. (*d*) : Clearly, education is necessary to make the children better citizens. So, none of the arguments is strong enough.

50. (*b*) : Ours is a secular state does not mean that religion and religious values should be eradicated. In fact, these inculcate moral values. So, argument I is vague and only argument II is strong.

3. STATEMENT — ASSUMPTIONS

An **assumption** is something taken for granted *i.e.*, a fact that can be supposed on considering the contents of the given statement.

TYPE 1

In this type of questions, a statement is given, followed by two assumptions. The candidate is required to assess the given statement and then decide which of the given assumptions is implicit in the statement and choose the same from the alternatives provided.

ILLUSTRATIVE EXAMPLES

Directions : ***In each question below is given a statement followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumptions is implicit.***

Give answer (a) if only assumption I is implicit; (b) if only assumption II is implicit; (c) if either I or II is implicit; (d) if neither I nor II is implicit and (e) if both I and II are implicit.

Ex. 1. Statement : It is desirable to put the child in school at the age of 5 or so.

Assumptions : I. At that age the child reaches appropriate level of development and is ready to learn.

II. The schools do not admit children after six years of age.

(Bank P.O. 1997)

Sol. Since the statement talks of putting the child in school at the age of 5, it means that the child is mentally prepared for the same at this age. So, I is implicit. But, nothing about admission after six years of age is mentioned in the statement. So, II is not implicit.

Hence, the answer is (*a*).

Ex. 2. Statement : "You must learn to refer to dictionary if you want to become a good writer." — A advises B.

Assumptions : I. Only writers refer to the dictionary.

II. All writers good or bad refer to the dictionary.

Sol. It does not follow from the statement that only writers and nobody else refers to the dictionary. Also, nothing is mentioned about bad writers. So, both the assumptions I and II are not implicit.

Hence, the answer is (*d*).

Ex. 3. Statement : The chairman and secretary of the housing society have requested society members to use water economically to help society to save on water tax. **(Bank P.O. 1998)**

Assumptions : I. Majority of members of society are likely to follow the request.

II. It is desirable to reduce expenditure wherever possible.

Sol. Clearly, nothing about the response of society members to the society's request can be deduced from the statement. So, I is not implicit. Also, the society requests the members to save the money on tax. So, II is implicit.
Hence, the answer is (*b*).

Ex. 4. Statement : "If you want to give any advertisement, give it in the newspaper X." — A tells B.

Assumptions : I. B wants to publicise his products.
II. Newspaper X has a wide circulation.

Sol. The word 'If' in the statement shows that B may or may not want to publicise his products. So, I is not implicit. It is advised that advertisements be given in newspaper X. This means that X will help advertise better *i.e.*, it has wider circulation. So, II is implicit.
Hence, the answer is (*b*).

Ex. 5. Statement : We must settle all the payment due to our suppliers within three working days. **(S.B.I.P.O. 1997)**

Assumptions : I. We will always have necessary funds in our account to settle the bills.
II. We are capable of verifying and clearing the bills in less than three working days.

Sol. Since the statement talks of making all payments within three days, it is evident that the company has the necessary funds and the bills can be verified and cleared within the stipulated time. So, both I and II are implicit.
Hence, the answer is (*e*).

Ex. 6. Statement : A good book, even if costly, is sold.

Assumptions : I. Some books are better than others.
II. Most of the books are costly.

Sol. The statement mentions about a 'good' book. This means some books may not be good. So, I is implicit. The words 'if costly' show that most books are not costly. So, II is not implicit.
Hence, the answer is (*a*).

EXERCISE 3A

Directions : ***In each question below is given a statement followed by two assumptions numbered I and II. You have to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.***

Give answer (a) if only assumption I is implicit; (b) if only assumption II is implicit; (c) if either I or II is implicit; (d) if neither I nor II is implicit and (e) if both I and II are implicit.

1. **Statement** : The patient's condition would improve after operation.
Assumptions : I. The patient can be operated upon in this condition.
II. The patient cannot be operated upon in this condition.

2. **Statement** : A's advice to B — "Go to Jammu via Amritsar — the shortest route."
Assumptions : I. B wishes to go to Jammu.
II. A gives advice to everybody.

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23. Statement : Be humble even after being victorious.
Assumptions : I. Many people are humble after being victorious.
II. Generally people are not humble.

24. Statement : I cannot contact you on phone from Karshik.
Assumptions : I. Telephone facility is not available at Karshik.
II. Nowadays it is difficult to contact on phone.

25. Statement : Among all the articles, the prices of personal computers show the highest decline from June 1997 to December 1997.
Assumptions : I. Comparative prices of all the articles in June and December 1997 were available.
II. Prices of personal computers were higher in the first six months than the last six months of 1997. **(M.B.A. 1998)**

26. Statement : Today I must satisfy myself only by looking at a pink headed duck in an encyclopaedia.
Assumptions : I. Pink headed ducks are as good as extinct now.
II. People refer to encyclopaedia to know only about things which do not exist now.

27. Statement : Read this book to get detailed and most comprehensive information on this issue. **(Bank P.O. 1997)**
Assumptions : I. The person who wants this information can read.
II. There are other books available on this issue.

28. Statement : "If you are a mechanical engineer, we want you as our supervisor." — An advertisement by company X.
Assumptions : I. Mechanical engineers are expected to be better performers by company X.
II. The company X needs supervisors.

29. Statement : Even with the increase in the number of sugar factories in India, we still continue to import sugar. **(Bank P.O. 1997)**
Assumptions : I. The consumption of sugar per capita has increased in India.
II. Many of the factories are not in a position to produce sugar to their fullest capacity.

30. Statement : A sentence in the letter to the candidates called for written examination — 'You have to bear your expenses on travel etc.'
Assumptions : I. If not clarified all the candidates may claim reimbursement of expenses.
II. Many organisations reimburse expenses on travel to candidates called for written examination.

31. Statement : The party president has directed that no member of the party will give press briefing or interviews to government and private T.V. channels about the discussion in scheduled meeting of the party. **(S.B.I.P.O. 1997)**
Assumptions : I. Party members will observe this directive of the president.
II. The general public will not come to know about the happenings in the scheduled meeting of the party.

32. Statement : Everybody loves reading adventure stories.

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42. Statement : "Computer education should start at schools itself."

Assumptions : I. Learning computers is easy.

II. Computer education fetches jobs easily.

43. Statement : "Though the candidates have been instructed to bring pencils, yet provide some pencils with each invigilator." — An instruction to test administration staff. **(Bank P.O. 1993)**

Assumptions : I. Pencils are in short supply.

II. All the candidates will bring the pencil.

44. Statement : Apart from the entertainment value of television, its educational value cannot be ignored.

Assumptions : I. People take television to be a means of entertainment only.

II. The educational value of television is not realised properly.

45. Statement : The railway authorities have decided to increase the freight charges by 10% in view of the possibility of incurring losses in the current financial year. **(S.B.I.P.O. 1997)**

Assumptions : I. The volume of freight during the remaining period may remain same.

II. The amount so obtained may set off a part or total of the estimated deficit.

46. Statement : "Present day education is in shambles and the country is going to the dogs."

Assumptions : I. A good education system is essential for the well being of a nation.

II. A good education alone is sufficient for the well being of a nation.

47. Statement : If Rajan has finished reading the instructions then let him begin the activities accordingly. **(Bank P.O. 1997)**

Assumptions : I. Rajan would understand the instructions.

II. Rajan is capable of performing the activities.

48. Statement : The next meeting of the Governing Board of the Institute will be held after one year.

Assumptions : I. The Institute will remain in function after one year.

II. The Governing Board will be dissolved after one year.

49. Statement : The U.S.A. re-emerged as India's largest import source in the early nineties. **(Assistant Grade, 1997)**

Assumptions : I. With swift political developments in the Soviet Union, India began to rely on U.S.A.

II. U.S.A. was the only country which wanted to meet the requirements of India.

50. Statement : Children are influenced more by their teachers nowadays.

Assumptions : I. The children consider teachers as their models.

II. A large amount of children's time is spent in school.

51. Statement : The two countries have signed a fragile pact, but the vital sovereignty issue remains unresolved. **(Bank P.O. 1996)**

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17. (*e*) : The advice is given for people who like glowing complexion. So, I is implicit. Since complexion glows if circulation is improved, so II is also implicit.

18. (*b*) : Clearly, the owners of the store warn that one dare not try to steal the camera. So, only II is implicit while I isn't. So, II is also implicit.

19. (*e*) : Clearly, the statement was spoken for fear that the other person may take a wrong decision. So, I is implicit. Again, the statement confirms that it is important to take the right decision. So, II is also implicit.

20. (*d*) : Since both the assumptions do not follow from the given statement, so neither I nor II is implicit.

21. (*d*) : The call for the like-minded opposition parties to unite is made in a particular situation but they may unite in other situations as well. So, I is not implicit. Clearly, the 'government' mentioned is an opposition party to the 'opposition parties' mentioned in the statement. So, II is also not implicit.

22. (*d*) : Clearly, no deduction can be made regarding the effect of repairs of office building on efficiency of workers, or the requirement of funds for repairs, from the given statement. So, neither I nor II is implicit.

23. (*b*) : Clearly, nothing is mentioned about the nature of the people. So, I is not implicit. Also, the statement gives an advice of being humble even after being victorious. This means that generally people are not humble. So, II is implicit.

24. (*a*) : Clearly, the fact in I may be assumed from the given statement. So, I is implicit. However, II indicates difficulty, not the impossibility of contact as is indicated in the statement. So, II is not implicit.

25. (*e*) : Since prices of personal computers show the highest decline among all the articles, it implies that the comparative prices of all the articles was known. So, I is implicit. Also, it being given that prices of computers showed decline during the last six months, it means that they were higher in the first six months. So, II is implicit.

26. (*a*) : Since the narrator talks of satisfying himself by just looking at a picture in encyclopaedia, it means that pink headed ducks are not to be seen alive. So, I is implicit. But II does not follow from the statement and is not implicit.

27. (*e*) : Clearly, I directly follows from the statement. So, I is implicit. Also, according to the statement, this particular book gives 'most comprehensive' information on the issue. So, it can be assumed that other books are also available on this topic.

28. (*e*) : Clearly, the company lends more importance to mechanical engineers. This shows that they are believed to perform better. So, I is implicit. Also, the advertisement is given because the company needs supervisors. So, II is also implicit.

29. (*c*) : Clearly, the need to import sugar could be either due to increase in consumption or the inefficiency of the factories to produce sugar to their fullest capacity. So, either I or II is implicit.

30. (*e*) : Clearly, not mentioning the condition may provoke all the candidates to demand their claim. So, I is implicit. The condition is mentioned because some companies do reimburse the travel expenses. So, II is also implicit.

31. (*e*) : Clearly, the party president lays down the policies for its members. So, I is implicit. Also, when no party member would publicly reveal the happenings in the meeting, nobody will come to know. So, II is also implicit.

32. (*d*) : The statement mentions that adventure stories are liked by everybody. This does not mean that there is no other reading material or nobody loves reading any other material. So, neither I nor II is implicit.

33. (*e*) : Since both I and I follow from the statement, so both are implicit.

34. (*e*) : The advertisement tells the different ways in which the drink can be had. This means that different people prefer to have it in a different way and that some people would prefer it only because it can be taken in a particular manner. So, both I and II are implicit.

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management will contain the indiscipline and ensure quality life to workers. So, II is implicit.

70. (*d*) : Efforts are being made to boost tourism does not mean that tourism has dropped. So, I is not implicit. Also, the statement mentions nothing about discounts in air fare. So, II is also not implicit.

EXERCISE 3B

Directions : ***In each question below is given a statement followed by two assumptions numbered I and II. You have to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.***

Give answer (a) if only assumption I is implicit; (b) if only assumption II is implicit; (c) if either I or II is implicit; (d) if neither I nor II is implicit and (e) if both I and II are implicit.

1. **Statement** : Unemployment allowance should be given to all unemployed Indian youth above 18 years of age. **(Bank P.O. 1996)**

   Assumptions : I. There are unemployed youth in India who need monetary support.

   II. The government has sufficient funds to provide allowance to all unemployed youth.

2. **Statement** : "If I am not well you will have to go for the meeting." — A manager tells his subordinate.

   Assumptions : I. It is not necessary that only manager level personnel attend the meeting.

   II. If the manager is well, he would himself like to go for the meeting.

3. **Statement** : The electric supply corporation has decided to open a few more collection centres in the business district area.

   Assumptions : I. The people in the area may welcome the decision.

   II. Henceforth, there may be less time required by the customers for paying electricity bill. **(S.B.I.P.O. 1997)**

4. **Statement** : Like a mad man, I decided to follow him.

   Assumptions : I. I am not a mad man.

   II. I am a mad man.

5. **Statement** : What a fool I am to rely on trickster like Shaleen !

   Assumptions : I. Shaleen is unreliable.

   II. I am a fool.

6. **Statement** : "If you want timely completion of work, provide independent cabins." — An employee tells the Director of a company.

   Assumptions : I. There are not enough cabins.

   II. Others' presence hinders timely completion of work.

7. **Statement** : If it is easy to become an engineer, I don't want to be an engineer.

   Assumptions : I. An individual aspires to be professional.

   II. One desires to achieve a thing which is hard earned.

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Assumptions : I. Generally people do not tolerate poor services.
II. Complaints sometimes improve services.

18. Statement : Children, who get encouragement, usually perform better — a note by the Principal to the parents. **(Bank P.O. 1993)**

Assumptions : I. Some parents do not encourage children.
II. Parents may follow Principal's advice.

19. Statement : "Banking services are fine tuned to meet growing business needs." — An advertisement.

Assumptions : I. Banking is a part of business activity.
II. Industrialists prefer better banking services.

20. Statement : Whenever you have any doubt on this subject, you may refer to the book by Enn & Enn. **(Bank P.O. 1998)**

Assumptions : I. The book by Enn & Enn is available.
II. There is no other book on this subject.

21. Statement : "According to me, you should get your child examined by a specialist doctor." — A tells B.

Assumptions : I. Specialist doctors are able to diagnose better than ordinary doctors.
II. B will certainly not agree with A's advice.

22. Statement : A Notice Board at a ticket window : 'Please come in queue.'

Assumptions : I. Unless instructed people will not form queue.
II. People any way want to purchase tickets. **(S.B.I.P.O. 1997)**

23. Statement : "In case you cannot return from the office by 8 P.M., inform us on phone at home." — The parents tell their son.

Assumptions : I. The son never informs about his late coming.
II. Unless specified, the son may not inform his parents.

24. Statement : Retired persons should not be appointed for executive posts in other organisations. **(Bank P.O. 1997)**

Assumptions : I. Retired persons may lack the zeal and commitment to carry out executive's work.
II. Retired persons do not take interest in the work and welfare of the new organisation.

25. Statement : Lack of stimulation in the first four or five years of life can have adverse consequences.

Assumptions : I. A great part of the development of observed intelligence occurs in the earliest years of life.
II. 50 per cent of the measurable intelligence at age of 17 is already predictable by the age of four.

26. Statement : "In my absence, I request you to look after the affairs of our company." — B tells C. **(Bank P.O. 1995)**

Assumptions : I. C may not accept the request of B.
II. C has the expertise to handle the affairs of the company.

27. Statement : Lock your valuables in a cupboard and call everybody gentleman.

Assumptions : I. Valuables locked in cupboard cannot be stolen.
II. Stealing is a crime.

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37. Statement : Neither fascism nor communism has any chance of succeeding in America.

Assumptions : I. American people are strongly in favour of preserving the rights of the individual.

II. Americans have so far not suffered any pangs of poverty or deprivation.

38. Statement : "Best way to solve this problem of workers' dissatisfaction is to offer them cash rewards. If this type of incentive can solve the problem in CIDCO company then why not here." — A Personnel Manager tells the Chairman of a company.

Assumptions : I. The reason for workers' dissatisfaction in both the companies was similar.

II. Monetary incentives have universal appeal. **(Bank P.O. 1993)**

39. Statement : The taste of food contributes to the intake of nourishment which is essential for the survival of human beings.

Assumptions : I. Human beings take food for the enjoyment of its taste.

II. Human beings experience the taste of food.

40. Statement : The economic prosperity of any nation is dependent on the quality of its human resources. **(Bank P.O. 1998)**

Assumptions : I. It is possible to measure the quality of human resources of a nation.

II. Achieving economic prosperity is a cherished goal of every nation.

41. Statement : "We offer the best training in the field of computers." — An advertisement.

Assumptions : I. People are interested in getting training in computers.

II. People want best training.

42. Statement : The coffee powder of company X is quite better in taste than the much advertised coffee of company Y. **(Bank P.O. 1996)**

Assumptions : I. If your product is not good, you spend more on advertisement.

II. Some people are tempted to buy a product by the advertisement.

43. Statement : "Please put more people on the job but make up for the delay".

Assumptions : I. Delay is inevitable in most jobs.

II. Output will increase with more number of people on the job.

44. Statement : Amongst newspapers, I always read the National Times.

Assumptions : I. The National Times gives very comprehensive news.

II. Some people prefer other newspapers.

45. Statement : Do not copy our software without our permission — A notice.

Assumptions : I. It is possible to copy the software.

II. Such warning will have some effect. **(Bank P.O. 1998)**

46. Statement : A warning in a train compartment — "To stop train, pull chain. Penalty for improper use Rs. 500."

Assumptions : I. Some people misuse the alarm chain.

II. On certain occasions, people may want to stop a running train.

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32. (*a*) : 'Fluency in English' is a condition mentioned for girls to be taken as model. So, I is implicit. Since nothing is mentioned about the height, so II is not implicit.

33. (*b*) : Nothing about the source of Government's subsidy can be deduced from the statement. So, I is not implicit. However, II follows from the statement and so it is implicit.

34. (*b*) : It is mentioned that the function will start at 3 P.M. and not that the invitees will be waited for. So, I is not implicit and only II is implicit.

35. (*e*) : The forests shall be visited to increase the knowledge of natural resources. This means that forests abound in natural resources. So, I is implicit. The children are being taken to forests to help them learn more. So, II is also implicit.

36. (*e*) : Since Sachin has asked his brother to collect the form, it is evident that the University may issue the form to anybody and that Sachin's brother would receive the letter before the last date of collecting the forms. So, both I and II are implicit.

37. (*a*) : Clearly, fascism and communism are against the preservation of individual rights. So, I is implicit. Nothing is mentioned about the economic condition of America. So, II is not implicit.

38. (*e*) : Since the policy is expected to work just because it turned out fruitful in another company, it is evident that the problem in both companies was similar and monetary incentives always motivate workers. So, both I and II are implicit.

39. (*b*) : It is mentioned that nourishment is essential for survival. So, this is the basic cause of intake of food. Hence, I is not implicit. Since taste of food affects the intake of nourishment, it means that human beings are affected by taste. So, II is implicit.

40. (*a*) : I follows from the statement and so is implicit. But the status of economic prosperity as a nation's goal is not discussed in the statement. So, II is not implicit.

41. (*e*) : The advertisement is meant to cater to the people's demand of computer training. So, I is implicit. The offer of 'best training' makes II implicit.

42. (*b*) : Since the statement holds the product of company X more superior in quality than that of Y which spends more on advertisement, so I is not implicit. According to the statement, the product of company Y is more known because of more advertisement. So, II is implicit.

43. (*b*) : The advice tells to 'make up for the delay' showing that delay is not to be done. So, I is not implicit. Since increase in number of people will prevent the delay, it means the output will increase with this increase in number. So, II is implicit.

44. (*b*) : The statement does not mention any quality of the National Times. So, I is not implicit. According to the statement, amongst all newspapers, the narrator reads the National Times. This means that some people read other newspapers. So, II is implicit.

45. (*e*) : Since the notice warns one against copying software without permission, it is evident that software can be copied. So, I is implicit. Also, the warning is given with the motive that no one dares to copy the software. So, II is also implicit.

46. (*e*) : Clearly, the penalty is imposed to prevent people from misusing the alarm chain. This means that some people misuse it. So, I is implicit. The alarm chain is provided to stop the running train in times of urgency. So, II is also implicit.

47. (*d*) : The statement mentions only the quantity procured and not the success or failure of the scheme. So, I is not implicit. Since the statement does not mention whether the requirements are fully satisfied, so II is also not implicit.

48. (*d*) : The statement talks of 'most people' and not 'all'. So, I is not necessarily true. Thus, I is not implicit. The condition, if one does not stop smoking, cannot be deduced from the statement. So, II is also not implicit.

49. (*e*) : It is mentioned that farmers will be in trouble without rain. This means that timely rain is essential. Also, it shows that farmers are dependent on rain. So, both I and II are implicit.

50. (*e*) : The phrase 'budgetary provision for the purpose of appointing additional faculty' makes I implicit. Also, since no budgetary provision was provided for appointment

of faculty in view of certain changed financial priorities, it means that some other issues require more financial attention. So, II is also implicit.

51. (*e*) : Clearly, modifications are made in present system finding that it was inconsistent with the needs and required to be changed. So, both I and II are implicit.

52. (*b*) : The objection has been put to the princess' marrying a commoner and not to non-observance of traditions. So, I is not implicit and only II is implicit.

53. (*b*) : Assumption I goes against the statement. So, it is not implicit. The allowance will serve as a reward to the employees and shall provoke them to come on time. So, II is implicit.

54. (*a*) : Clearly, job is offered to an engineer. This means that he is needed. So, I is implicit. The word 'If' in the statement makes II not implicit.

55. (*a*) : The statement mentions that if the people ask about the tailor, your suit is good. This means that people ask only in the situation when the thing is good. So, I is implicit. The criteria of an excellent suit is not mentioned. So, II is not implicit.

56. (*a*) : Since inequality can be reduced, it means that it is not natural but created. So, I is implicit. Nothing is mentioned about people's response. So, II is not implicit.

57. (*b*) : Anthony's place of living is not mentioned in the statement. So, I is not implicit. Assumption II follows from the statement and so it is implicit.

58. (*e*) : The advice is given to turn down the request for leave. So, I is implicit. The mention of the 'exigency of work' makes II implicit.

TYPE 2

This section also consists of similar type of questions as in Type 1, with the difference that three assumptions are given and the candidate is required to choose that group which is implicit in context of the given statement.

Ex. 1. Statement : The company has recently announced a series of incentives to the employees who are punctual and sincere.

Assumptions : I. Those who are not punctual at present may get motivated by the announcement.

II. The productivity of the company may increase.

III. The profit earned by the company may be more than the amount to be spent for the incentive programmes.

(*a*) Only I and II are implicit (*b*) None is implicit

(*c*) Only II and III are implicit (*d*) All are implicit

(*e*) None of these **(Bank P.O. 1997)**

Sol. Announcing incentives for punctual and sincere employees would surely motivate more and more employees to be punctual, and this will surely increase productivity. So, both I and II are implicit. However, the statement does not give any information about the profit earned by the company. So, III is not implicit.

Hence, the answer is (*a*).

Ex. 2. Statement : Opening a library in Rambli will be a wastage.

Assumptions : I. Inhabitants of Rambli are illiterate.

II. Inhabitants of Rambli are not interested in reading.

III. There is an adequate number of libraries in Rambli already.

(*a*) Only I and II are implicit (*b*) Only III is implicit

(*c*) Only either I or III is implicit (*d*) Only II is implicit

(*e*) Only either I or II or III is implicit

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26. Statement : "To make the company commercially viable, there is an urgent need to prune the staff strength and borrow money from the financial institutions" — opinion of a consultant.

Assumptions : I. The financial institutions lend money for such proposals.
II. The product of the company has a potential market.
III. The employees of the company are inefficient.

(*a*) None is implicit (*b*) All are implicit
(*c*) Only I and II are implicit (*d*) Only II and III are implicit
(*e*) Only I and III are implicit **(Bank P.O. 1994)**

27. Statement : In the recently held All Indian Commerce Conference the session on 'Management of Service Sector in India' surprisingly attracted large number of participants and also received a very good media coverage in the leading newspapers.

Assumptions : I. People were not expecting such an encouraging response for service sector.
II. Service sector is not managed properly in India.
III. Media is always very positive towards service sector.

(*a*) Only I is implicit (*b*) Only II and III are implicit
(*c*) None is implicit (*d*) All are implicit
(*e*) Only either I or III is implicit **(Bank P.O. 1996)**

28. Statement : Let us increase the taxes to cover the deficit.

Assumptions : I. The present taxes are very low.
II. Deficit in a budget is not desirable.
III. If the taxes are not increased, the deficit cannot be met.

(*a*) Only I and II are implicit (*b*) Only II and III are implicit
(*c*) Only I and III are implicit (*d*) All are implicit
(*e*) None of these

29. Statement : In order to reduce the gap between income and expenditure, the company has decided to increase the price of its product from next month. **(Bank P.O. 1995)**

Assumptions : I. The rate will remain more or less same after the increase.
II. The expenditure will more or less remain the same in near future.
III. The rival companies will also increase the price of the similar product.

(*a*) Only I and II are implicit (*b*) Only II and III are implicit
(*c*) Only III is implicit (*d*) All are implicit
(*e*) None of these

30. Statement : The national air carrier has decided to start a weekly air service from town A to town B.

Assumptions : I. There will be enough passengers to make the operation economically viable.
II. Other carriers may not start such service.
III. The people staying around these towns can afford the cost of air travel.

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Assumptions : I. All the students will attend the summer school.
II. All the parents will prefer to remain in the city than going out of town for enabling their children to attend the summer school.
III. Those who cannot afford to go out of station will send their children to summer school.

(*a*) None is implicit (*b*) Only II is implicit
(*c*) Only II and III are implicit (*d*) Only III is implicit
(*e*) All are implicit

36. Statement : "Do not lean out of the moving train" — a warning in the railway compartment.

Assumptions : I. Such warnings will have some effect.
II. Leaning out of a moving train is dangerous.
III. It is the duty of railway authorities to take care of passengers' safety.

(*a*) Only I and II are implicit (*b*) Only II and III are implicit
(*c*) Only II is implicit (*d*) Only I and III are implicit
(*e*) All are implicit

37. Statement : The Central Government has directed the State Governments to reduce government expenditure in view of the serious resource crunch and it may not be able to sanction any additional grant to the states for the next six months.

Assumptions : I. The State Governments are totally dependent on Central Government for its expenditures.
II. The Central Government has reviewed the expenditure account of the State Government.
III. The State Governments will abide by the directive.

(*a*) None is implicit (*b*) Only II and III are implicit
(*c*) Only III is implicit (*d*) All are implicit
(*e*) None of these **(Bank P.O. 1994)**

38. Statement : State Council For Teacher Education (SCTE) has laid down guidelines in respect of minimum qualifications for a person to be employed as a teacher in universities or in recognised institutions. **(Bank P.O. 1996)**

Assumptions : I. The authorities will now appoint only qualified teachers.
II. Only qualified people will apply for the teaching post.
III. SCTE decides all the norms of educational qualification for teaching faculty.

(*a*) None is implicit (*b*) Only I is implicit
(*c*) Only I and II are implicit (*d*) Only I and III are implicit
(*e*) All are implicit

39. Statement : "All are cordially invited to attend the entertainment programme. It is free" — an announcement in a newspaper.

Assumptions : I. People generally do not go to entertainment programmes which are free.

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(*a*) None is implicit (*b*) Only I and II are implicit
(*c*) Only II and III are implicit (*d*) Only I and III are implicit
(*e*) All are implicit

49. Statement : Considering the tickets sold during the last seven days, the circus authorities decided to continue the show for another fortnight which includes two weekends.

Assumptions : I. People may not turn up on week days.
II. The average number of people who will be visiting circus will be more or less same as that of the last seven days.
III. There may not be enough response at other places.

(*a*) All are implicit (*b*) None is implicit
(*c*) Only II is implicit (*d*) Only I and II are implicit
(*e*) None of these **(Bank P.O. 1994)**

50. Statement : "Television X — the neighbour's envy, the owner's pride" — A T.V. advertisement.

Assumptions : I. Catchy slogans appeal to people.
II. People are envious of their neighbours' superior possessions.
III. People want to be envied by their neighbours.

(*a*) Only I and II are implicit (*b*) Only II and III are implicit
(*c*) Only I and III are implicit (*d*) All are implicit
(*e*) None of these

ANSWERS

1. (*c*) : Since A has decided to gift a book to Ajay on his birthday, it is quite evident that he will be invited by Ajay and that a book is an acceptable gift. So, both I and III are implicit. Nothing about the state of health of the person can be deduced from the statement. So, II is not implicit.

2. (*b*) : The advertisement depicts only the requirement, not the availability of flats in court area. So, I is not implicit. Such advertisements are given with the expectation of a response which can make such a flat available. So, II is implicit. Assumption III does not follow from the statement and so is not implicit.

3. (*b*) : The statement mentions that situation in the area is tense. So, I is implicit. Since people have been requested not to go out and remain in homes for safety, so II is implicit. It cannot be inferred when the normalcy will be restored. So, III is not implicit.

4. (*a*) : Artificial honey can be made. That is why the word 'natural' needs to be mentioned in the advertisement. So, I is implicit. No comparison is made of the prices of natural and artificial honey. So, II is not implicit. Nothing about the quality of honey of other companies can be deduced. So, III is also not implicit.

5. (*e*) : Clearly, the advertisement is meant to lure the passengers into travelling by the airline. So, I is implicit. Also, the advertisement promises an enjoyable flight. So, II is also implicit. The facilities offered by other airlines cannot be deduced from the statement. So, III is not implicit.

6. (*b*) : Nothing about the environment in the new company is mentioned in the statement. So, I is not implicit. Since Arun is not satisfied with the present salary, it is evident that the present company offers moderate pay packets. So, II is implicit. The statement talks only of Arun and not all the employees of the new company. So, III is not implicit.

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4. STATEMENT — COURSES OF ACTION

A course of action is 'a step or administrative decision to be taken for improvement, follow-up or further action in regard to the problem, policy *etc.* on the basis of the information given in the statement'.

The questions in this section, thus, involve finding the appropriate course of action, assuming the problem or policy being talked about in the statement.

TYPE 1

In this type of questions, a statement is given followed by two courses of action numbered I and II. The candidate is required to grasp the statement, analyse the problem or policy it mentions and then decide which of the courses of action logically follow.

ILLUSTRATIVE EXAMPLES

Ex. 1. Statement — Many cases of cholera were reported from a nearby village.

Courses of action
I. The question should be raised in the Legislative Assembly.
II. A team of doctors should be rushed to the village.

Sol. Clearly, the disease has to be eradicated. For this, proper and immediate medication and preventive measures by doctors is necessary. So, only course II follows.

Ex. 2. Statement — Japan is not likely to grant India's request for a $500 million fast disbursing loan for the current year.

Courses of action
I. India should approach other countries to get a loan.
II. India should persuade Japan to grant the loan to meet its immediate demand of foreign exchange.

Sol. Clearly, to remedy the problem, India can either stress its urgency and persuade Japan itself or it shall look to another country for the same purpose. Thus, either I or II course of action can follow.

Ex. 3. Statement — People residing in some tribal areas are far from education.

Courses of action
I. Schools for children and adults should be opened there.
II. Social workers should be entrusted with the job of educating them.

Sol. Clearly, to make permanent arrangements for education in remote tribal areas, schools have to be opened in those very areas. Education by social workers shall be a temporary remedy. So, only the course of action I follows.

Ex. 4. Statement — India today is midstream in its demographic transaction. In the last 60 years there has been an almost continuous decline in mortality; while fertility has declined over the last 20 years. The consequence is that there has been a rapid growth in population over the last 50 years.

Courses of action
I. India should immediately revitalise its family planning programme.

II. The Government should immediately launch a massive education programme through mass media highlighting the implication of population growth at the present rate.

Sol. Clearly, to face the problem of the ever growing population, an effective family planning programme, for the people to have small families, is a must. Education shall further stress the advantages of having less number of children and the disasters of the fast growth in population. Thus, both the courses of action will follow.

EXERCISE 4A

Directions : ***In each question below is given a statement followed by two courses of action numbered I and II. You have to assume everything in the statement to be true, then decide which of the two suggested courses of action logically follows for pursuing.***

Give answer (a) if only I follows; (b) if only II follows; (c) if either I or II follows; (d) if neither I nor II follows and (e) if both I and II follow.

1. Statement There are more than 200 villages in the hill area of Uttar Pradesh which are severely damaged due to cyclone and it causes an extra burden of Rs 200 crore on State Government for relief and rehabilitation work. **(Bank P.O. 1993)**

Courses of action
I. People of hill area should be shifted to other safer places.
II. State Government should ask more financial support from Central Government.

2. Statement The Minister said that the teachers are still not familiarised with the need, importance and meaning of population education in the higher education system. They are not even clearly aware about their role and responsibilities in the population education programme. **(Bank P.O. 1996)**

Courses of action
I. Population education programme should be included in the college curriculum.
II. Orientation programme should be conducted for teachers on population education.

3. Statement A group of school students was reported to be enjoying at a picnic spot during school hours.

Courses of action
I. The Principal should contact the parents of those students and tell them about the incident with a real warning for future.
II. Some disciplinary action must be taken against those students and all other students should be made aware of it.

4. Statement Financial stringency prevented the State Government from paying salaries to its employees since April this year.

Courses of action
I. The State Government should immediately curtail the staff strength at least by 30%.
II. The State Government should reduce wasteful expenditure and arrange to pay the salaries of its employees.

5. Statement The State Government has decided to declare 'Kala Azar' as a notifiable disease under the Epidemics Act. Family members or neighbours of the patient are liable to be punished in case they did not inform the State authorities.

Courses of action
I. Efforts should be made to effectively implement the Act.
II. The cases of punishment should be propagated through mass media so that more people become aware of the stern actions.

6. Statement
One of the problems facing the food processing industry is the irregular supply of raw material. The producers of raw material are not getting a reasonable price.

Courses of action
I. The government should regulate the supply of raw material to other industries also.
II. The government should announce an attractive package to ensure regular supply of raw material for food processing industry. **(Bank P.O. 1993)**

7. Statement
The Officer Incharge of a Company had a hunch that some money was missing from the safe.

Courses of action
I. He should get it recounted with the help of the staff and check it with the balance sheet.
II. He should inform the police.

8. Statement
The Government has decided not to provide financial support to voluntary organisations from next five year plan and has communicated that all such organisations should raise funds to meet their financial needs.

Courses of action
I. Voluntary organisations should collaborate with foreign agencies.
II. They should explore other sources of financial support. **(Bank P.O. 1993)**

9. Statement
Some serious blunders were detected in the Accounts section of a factory.

Courses of action
I. An efficient team of auditors should be appointed to check the Accounts.
II. A show cause notice should be issued to all the employees involved in the irregularity.

10. Statement
If the retired Professors of the same Institutes are also invited to deliberate on restructuring of the organisation, their contribution may be beneficial to the Institute.

Courses of action
I. Management may seek opinion of the employees before calling retired professors.
II. Management should involve experienced people for the systematic restructuring of the organisation. **(Bank P.O. 1996)**

11. Statement
Doordarshan is concerned about the quality of its programmes particularly in view of stiff competition it is facing from STAR and other satellite TV channels and is contemplating various measures to attract talent for its programmes.

Courses of action
I. In an effort to attract talent, the Doordarshan has decided to revise its fee structure for the artists.
II. The fee structure should not be revised until other electronic media also revise it. **(Bank P.O. 1993)**

12. Statement
Youngsters are often found staring at obscene posters.

Courses of action
I. Children should be punished and penalized if they are found doing so.

20. Statement Exporters in the capital are alleging that commercial banks are violating a Reserve Bank of India directive to operate a post shipment export credit denominated in foreign currency at international interest rates from January this year.

Courses of action
I. The officers concerned in the commercial banks are to be suspended.
II. The RBI should be asked to stop giving such directives to commercial banks. **(Bank P.O. 1992)**

21. Statement The police department has come under a cloud with recent revelations that at least two senior police officials are suspected to have been involved in the illegal sale of a large quantity of weapons from the state police armoury.

Courses of action
I. A thorough investigation should be ordered by the State Government to bring out all those who are involved into the illegal sale of arms.
II. State police armoury should be kept under Central Government's control.

22. Statement India's performance in the recent Olympic Games was very poor. Not even a single medal could be bagged by the players. Government has spent Rs 5 crores in training and deputing a team of players to participate in the Olympic Games.

Courses of action
I. India should stop sending players to the future Olympic Games.
II. Government should immediately set up an enquiry commission to find out the reason for India's dismal performance. **(Bank P.O. 1992)**

23. Statement Courts take too long in deciding important disputes of various departments.

Courses of action
I. Courts should be ordered to speed up matters.
II. Special powers should be granted to officers to settle disputes concerning their department.

24. Statement The Committee has criticized the Institute for its failure to implement a dozen of regular programmes despite an increase in the staff strength and not drawing up a firm action plan for studies and research.

Courses of action
I. The broad objectives of the Institute should be redefined to implement a practical action plan.
II. The Institute should give a report on reasons for not having implemented the planned programmes.

25. Statement Mr. X, an active member of the Union, often insults his superiors in the office with his rude behaviour.

Courses of action
I. He should be transferred to some other department.
II. The matter should be referred to the Union.

26. Statement A leading U.S. multinational engineering and construction firm is keen to invest in India in a variety of sectors ranging from power to land management. **(Bank P.O. 1992)**

Courses of action
I. Such multinational companies should not be allowed to operate in India.

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34. Statement The Central Bureau of Investigation receives the complaint of an officer taking bribe to do the duty he is supposed to.

Courses of action
I. CBI should try to catch the officer red-handed and then take a strict action against him.
II. CBI should wait for some more complaints about the officer to be sure about the matter.

35. Statement The Finance Minister submits his resignation a month before the new budget is to be presented in the Parliament.

Courses of action
I. The resignation should be accepted and another person should be appointed as the Finance Minister.
II. The resignation should not be accepted.

36. Statement The Librarian finds some cases in which the pages from certain books issued from the library, are torn.

Courses of action
I. The Librarian should keep a record of books issued by each student, and if the pages are found torn, strict measures should be taken against the child who had been issued that book.
II. Some funds should be collected from the children collectively to renovate the library.

37. Statement The Asian Development Bank has approved a $ 285 million loan to finance a project to construct coal ports by Paradip and Madras Port Trusts. **(Bank P.O. 1992)**

Courses of action
I. India should use financial assistance from other international financial organisations to develop such ports in other places.
II. India should not seek such financial assistance from the international financial agencies.

38. Statement The Secretary lamented that the electronic media was losing its credibility and that it should try to regain it by establishing better communications with the listeners and the viewers. He also emphasised the need for training to improve the functioning. **(Bank P.O. 1993)**

Courses of action
I. Efforts should be made to get organised feedback on the programme.
II. The critical areas in which the staff requires training should be identified.

39. Statement The killer entric fever has so far claimed 100 lives in some tribal villages in M.P. during the past three weeks.

Courses of action
I. The residents of these villages should immediately be shifted to a non-infected area.
II. The Government should immediately send a medical squad to this area to restrict spread of the killer disease.

40. Statement Orissa and Andhra Pradesh have agreed in principle to set up a joint control board for better control, management and productivity of several inter-state multipurpose projects.
I. Other neighbouring states should set up such control boards.
II. The proposed control board should not be allowed to function as such joint boards are always ineffective. **(Bank P.O. 1992)**

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29. (*a*) : Clearly, if allowed to continue without being punished, the shopkeeper would create a problem elsewhere. So, course I shall follow.

30. (*b*) : Since the act has been repeated despite various warnings, so course I would only be another warning and would not help. Severe punishment to set example for him and others is inevitable. Thus, course II shall follow.

31. (*d*) : What is necessary is the preventive measures to protect the passengers and pay them adequate compensation. So, none of the courses follows.

32. (*e*) : To educate all children, enforcement of education is necessary. Also, the reason is that they are employed. So, ban on such employment is also needed. Thus, both the courses follow.

33. (*d*) : Clearly, the situation demands maintaining peace in the country so as to restore the original number of tourists and not suffer a fall in the revenue earned. Thus, none of the courses follows.

34. (*a*) : Clearly, one complaint is enough for a wrong doing. This should be confirmed by catching the guilty red handed and then strict action taken against him. So, only course I follows.

35. (*b*) : Clearly, an already working Finance Minister shall know better all the plans and resources of the Government and he alone can present a suitable budget. So, course II should be followed.

36. (*a*) : Clearly, precaution should be taken to catch the guilty person and punish him for the act. This alone will help curb the wrong practice. So, only course I will follow.

37. (*a*) : Clearly, such projects shall be an asset and a source of income to the country later on. So, course I shall follow.

38. (*e*) : Clearly, both the courses directly follow from the pre-requisites mentioned in the statement.

39. (*b*) : Clearly, the first course of action is vague because if people are shifted to a non-infected area, the infection will spread there as well. The remedy is only to fight the disease and restrict its spread. So, course II will follow.

40. (*a*) : The effectiveness of such Control Boards is established by the fact that Orissa and A.P. have agreed to it for better control of its multipurpose projects. So, only course I follows.

41. (*d*) : Clearly, none of the courses of action follows because firstly, the notification is issued to promote the natural environment is issued to promote the natural environment and so cannot be withdrawn and secondly, the sanctuaries etc., cannot be shifted.

42. (*a*) : Clearly, proper supervision alone can see the development in practice. So, only course I follows.

43. (*a*) : Clearly, the urgent need is to detect the blunder and improve it. Reasons do not matter much. So, only course I follows.

44. (*d*) : Clearly, none of the courses of action is a suitable follow up of the Government's act against defaultation. So, neither I nor II follows.

EXERCISE 4B

Directions : ***In each question below is given a statement followed by three courses of action numbered I, II and III. You have to assume everything in the statement to be true, then decide which of the three given suggested courses of action logically follows for pursuing.***

Questions 1 to 5 **(Bank P.O. 1995)**

1. Statement In one of the worst accidents in railway level crossing fifty people died when a bus carrying them collided on to a running train.

Courses of action
I. The train driver should immediately be suspended.
II. The driver of the bus should be tried in court for negligence on his part.
III. The railway authority should be asked to man all its level crossings.

(*a*) None follows (*b*) Only I and II follow (*c*) Only III follows
(*d*) Only II and III follow (*e*) None of these

2. Statement There was a spurt in criminal activities in the city during the recent festival season.

Courses of action
I. The police should immediately investigate into the causes of this increase.
II. In future the police should take adequate precaution to avoid recurrence of such situation during festival.
III. The known criminals should be arrested before any such season.

(*a*) None follows (*b*) Only I and II follow (*c*) Only II and III follow
(*d*) All follow (*e*) None of these

3. Statement A mass mortality of shrimps in ponds on entire Andhra coast has recently been reported due to the presence of a virus.

Courses of action
I. The water of the ponds affected should immediately be treated for identifying the nature of the virus.
II. The catching of shrimps from the ponds should temporarily be stopped.
III. The fishermen should be asked to watch for the onset of such phenomenon in nature.

(*a*) Only I follows (*b*) Only I and II follow (*c*) All follow
(*d*) Only II and III follow (*e*) None of these

4. Statement The weather bureau has through a recent bulletin forecast heavy rainfall during the next week which may cause water logging in several parts of the city.

Courses of action
I. The bulletin should be given wide publicity through the mass media.
II. The civic authority should keep in readiness the pumping system for removal of water from these parts.
III. The people should be advised to stay indoors during the period.

(*a*) None follows (*b*) Only I and II follow (*c*) Only II follows
(*d*) Only II and III follow (*e*) None of these

5. Statement The world will have to feed more than 10 billion people in the next century of whom half will be in Asia and will eat rice as their staple.

Courses of action
I. More funds should immediately be allocated for rice research to help ensure adequate supplies.
II. The people in Asia should be encouraged to change their food habit.
III. The rice should be grown in countries outside Asia to meet the demand.

(*a*) Only I and II follow (*b*) Only II and III follow (*c*) All follow
(*d*) Only I and III follow (*e*) None of these

Questions 6 to 10 **(Bank P.O. 1993)**

6. Statement If the faculty members also join the strike, there is going to be a serious problem.

Courses of action
I. The faculty members should be persuaded not to go on strike.
II. Those faculty members who join the strike should be suspended.
III. The management should not worry about such small things.

(*a*) None follows (*b*) Only I follows (*c*) Only I and II follow
(*d*) Only II and III follow (*e*) All follow

7. Statement Higher disposal costs encourage those who produce waste to look for cheaper ways to get rid of it.

Courses of action
I. The disposal costs should be made higher.
II. The disposal costs should be brought down.
III. A committee should be set up to study the details in this respect.

(*a*) All follow (*b*) Only I follows (*c*) Only II follows
(*d*) Either I or II follows (*e*) Only II and III follow

8. Statement The army has been alerted in the district following floods triggered by incessant rains.

Courses of action
I. Relief to flood affected people should be arranged.
II. Supply of food articles should be arranged.
III. Adequate medical facilities should be arranged.

(*a*) None follows (*b*) Only I follows (*c*) Only II follows
(*d*) Only I and III follow (*e*) All follow

9. Statement Faced with a serious resource crunch and a depressing overall economic scenario, Orissa is unlikely to achieve the targetted percent compound annual growth rate during the 8th plan.

Courses of action
I. The target growth should be reduced for the next year.
II. The reasons for the failure should be studied.
III. Orissa's performance should be compared with that of other states.

(*a*) None follows (*b*) Only I follows (*c*) Only II and III follow
(*d*) Only I and III follow (*e*) All follow

10. Statement Over 27,000 bonded labourers identified and freed are still awaiting rehabilitation.

Courses of action
I. More cases of bonded labourers should be identified.
II. Till the proper rehabilitation facilities are available, the bonded labourers should not be freed.
III. The impediments in the way of speedy and proper rehabilitation of bonded labourers should be removed.

(*a*) None follows (*b*) Only I follows (*c*) Only II follows
(*d*) Only III follows (*e*) Only II and III follow

Questions 11 to 15 **(S.B.I.P.O. 1994)**

11. Statement In the Teacher's Day function, Shri Roy, a state awardee and a retired Principal, had questioned the celebration of Teacher's Day in "today's materialistic world".

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(*a*) None follows (*b*) Only I and III follow (*c*) All follow
(*d*) Only II and III follow (*e*) None of these

Questions 21 to 25 **(Bank P.O. 1995)**

21. Statement Drinking water supply to New Bombay has been suspended till further orders from Maharashtra Pollution Control Board following pollution of Patalganga river, caused by discharge of effluents from some chemical industries.

Courses of action
I. The industries responsible for discharging effluents into the river should be asked to close down immediately.
II. The river water should immediately be treated chemically before resuming supply.
III. The Pollution Control Board should check the nature of effluents being discharged into the river by industries at regular intervals.

(*a*) All follow (*b*) Only I follows (*c*) Only II and III follow
(*d*) Only III follows (*e*) None of these

22. Statement The Department of Education has recommended that the primary level admission to Government and Government aided schools should be done purely by random selection and not by admission tests. This is necessitated as the number of admission seekers are much more than the available seats.

Courses of action
I. The Government should instruct the private schools also to follow the same practice.
II. The Government should set up an independent body to regulate the primary level admissions.
III. The schools should be asked to select students only from those who stay in the neighbouring area of the school.

(*a*) None follows (*b*) Only I and II follow (*c*) Only II and III follow
(*d*) Only II follows (*e*) None of these

23. Statement The vehicular traffic has increased so much in the recent past that it takes at least two hours to travel between the city and the airport during peak hours.

Courses of action
I. Non-airport bound vehicles should not be allowed to ply on the road connecting the city and the airport.
II. The load of vehicular traffic should be diverted through various link roads during peak hours.
III. The departure and arrival of flights should be regulated so as to avoid congestion during peak hours.

(*a*) Only I follows (*b*) Only II follows (*c*) Only I and II follow
(*d*) All follow (*e*) None of these

24. Statement Due to cancellation of a huge export order for not adhering to the time frame, the company is likely to get into incurring losses in the current financial year.

Courses of action
I. The officer in charge of the production should be immediately suspended.

II. The goods manufactured for the export order should be sold to other party.

III. The company should change its machinery to maintain the time frame.

(*a*) None follows (*b*) Only II follows (*c*) Only I and II follow
(*d*) All follow (*e*) None of these

25. Statement A devastating earthquake has ravaged the city killing hundreds of people and rendering many more homeless.

Courses of action

I. The entry of outsiders into the city should be stopped immediately.

II. The civic administration should immediately make alternate temporary housing arrangement for the victims.

III. The affected people should immediately be shifted to a safer place.

(*a*) Only I follows (*b*) Only II and III follow
(*c*) Only III follows (*d*) Only either II or III follows
(*e*) None of these

ANSWERS

1. (*c*)	**2.** (*b*)	**3.** (*a*)	**4.** (*d*)	**5.** (*a*)	**6.** (*b*)	**7.** (*e*)	**8.** (*e*)	**9.** (*c*)	**10.** (*d*)
11. (*e*)	**12.** (*a*)	**13.** (*d*)	**14.** (*d*)	**15.** (*b*)	**16.** (*c*)	**17.** (*b*)	**18.** (*d*)	**19.** (*d*)	**20.** (*d*)
21. (*c*)	**22.** (*a*)	**23.** (*b*)	**24.** (*b*)	**25.** (*b*)					

5. STATEMENT — CONCLUSIONS

'Conclusion' means 'a fact that can be truly inferred from the contents of a given sentence or passage'. The questions in this section thus consist of a statement/group of statements, followed by certain inferences based on the facts contained in the given statements. The candidate is required to analyse the given statements, understand their indirect implications and then decide which of the given conclusions follows logically and for sure, from the given statements.

TYPE 1

In this type of questions, a statement is given followed by two conclusions. The candidate is required to find out which of these conclusions definitely follows from the given statement and choose the answer accordingly.

ILLUSTRATIVE EXAMPLES

Directions : ***In each of the following questions, a statement is given followed by two conclusions I and II. Give answer (a) if only conclusion I follows; (b) if only conclusion II follows; (c) if either I or II follows; (d) if neither I nor II follows and (e) if both I and II follow.***

Ex. 1. Statement : Sealed tenders are invited from competent contractors experienced in executing construction jobs.

Conclusions : I. Tenders are invited only from experienced contractors.

II. It is difficult to find competent tenderers in construction jobs.

Sol. According to the statement, tenders are invited from contractors experienced in executing construction jobs. So, conclusion I follows. The availability of competent tenderers in construction is not mentioned. So, conclusion II does not follow.

Hence, the answer is (a).

Ex. 2. Statement : The distance of 900 km by road between Bombay and Jafra will be reduced to 280 km by sea. This will lead to a saving of Rs 7.92 crores per annum on fuel.

Conclusions : I. Transportation by sea is cheaper than that by road.

II. Fuel must be saved to the greatest extent.

Sol. According to the statement, sea transport is cheaper than road transport in the case of route from Bombay to Jafra, not in all the cases. So, conclusion I does not follow. The statement stresses on the saving of fuel. So, conclusion II follows.

Hence, the answer is (*b*).

Ex. 3. Statement : The manager humiliated Sachin in the presence of his colleagues.

Conclusions : I. The manager did not like Sachin.

II. Sachin was not popular with his colleagues.

Sol. Clearly, none of the given conclusions is either mentioned in or can be drawn from the facts given in the statement.

Hence, the answer is (*d*).

Ex. 4. Statement : Any young man who makes dowry as a condition for marriage discredits himself and dishonours womanhood.

Conclusions : I. Those who take dowry in marriage should be condemned by society.

II. Those who do not take dowry in marriage respect womanhood.

Sol. Clearly, the statement declares dowry as an evil practice and reflects its demerits. Thus, conclusion I follows. Also, it is given that those who take dowry dishonour womanhood. This implies that those who do not take dowry respect womanhood. So, conclusion II follows.
Hence, the answer is (*e*).

EXERCISE 5A

Directions : ***In each of the following questions, a statement is given, followed by two conclusions. Give answer (a) if only conclusion I follows; (b) if only conclusion II follows; (c) if either I or II follows; (d) if neither I nor II follows and (e) if both I and II follow.***

1. **Statement** : Morning walks are good for health.
   Conclusions : I. All healthy people go for morning walks.
   II. Evening walks are harmful.
2. **Statement** : Company X has marketed the product. Go ahead, purchase it if price and quality are your considerations. **(Bank P.O. 1996)**
   Conclusions : I. The product must be good in quality.
   II. The price of the product must be reasonable.
3. **Statement** : The best way to escape from a problem is to solve it.
   Conclusions : I. Your life will be dull if you don't face a problem.
   II. To escape from problems, you should always have some solutions with you.
4. **Statement** : A neurotic is a non-stupid person who behaves stupidly.
   Conclusions : I. Neuroticism and stupidity go hand in hand.
   II. Normal persons behave intelligently.
5. **Statement** : Vegetable prices are soaring in the market.
   Conclusions : I. Vegetables are becoming a rare commodity.
   II. People cannot eat vegatables. **(Assistant Grade, 1995)**
6. **Statement** : India's economy is depending mainly on forests.
   Conclusions : I. Trees should be preserved to improve Indian economy.
   II. India wants only maintenance of forests to improve economic conditions.
7. **Statement** : This world is neither good nor evil; each man manufactures a world for himself. **(Bank P.O. 1997)**
   Conclusions : I. Some people find this world quite good.
   II. Some people find this world quite bad.
8. **Statement** : Video-libraries are flourishing very much these days.
   Conclusions : I. People in general have got a video craze.
   II. It is much cheaper to see as many movies as one likes on videos rather than going to the cinema hall.

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Conclusions : I. Pointed and precise expression comes only through extensive writing.
II. Extensive reading makes a complete man.

26. Statement : Industrial Revolution which first of all started in Europe has brought about modern age. **(Assistant Grade, 1995)**

Conclusions : I. Disparity between rich and poor results in revolution.
II. Revolution overhauls society.

27. Statement : Government has spoiled many top ranking financial institutions by appointing bureaucrats an Directors of these institutions.

Conclusions : I. Government should appoint Directors of the financial institutes taking into consideration the expertise of the person in the area of finance.
II. The Director of the financial institute should have expertise commensurate with the financial work carried out by the institute.

28. Statement : The General Manager asked four managers to either submit their resignations by the next day or face termination orders from service. Three of them had submitted their resignations by that evening. **(Bank P.O. 1996)**

Conclusions : I. The next day, the remaining manager would also resign
II. The General Manager would terminate his services the next day.

29. Statement : No country is absolutely self-dependent these days.

Conclusions : I. It is impossible to grow and produce all that a country needs.
II. Countrymen in general have become lazy.

30. Statement : Today out of the world population of several thousand million, the majority of men have to live under governments which refuse them personal liberty and the right to dissent.

Conclusions : I. People are indifferent to personal liberty and the right to dissent.
II. People desire personal liberty and the right to dissent.
(Bank P.O. 1996)

31. Statement : To cultivate interest in reading, the school has made it compulsory from June 96 for each student to read two books per week and submit a weekly report on the books.

Conclusions : I. Interest in reading can be created by force.
II. Some students eventually will develop interest in reading.
(S.B.I.P.O. 1996)

32. Statement : The use of non-conventional sources of energy will eliminate the energy crisis in the world.

Conclusions : I. Modern technology is gradually replacing the conventional sources of energy.
II. The excessive exploitation of environment has led to depletion of conventional sources of energy.

33. Statement : Adversity makes a man wise. **(Hotel Management, 1991)**

Conclusions : I. The poor are wise.

II. Man learns from bitter experience.

34. Statement : The T.V. programmes, telecast specially for women are packed with a variety of recipes and household hints. A major portion of magazines for women also contains the items mentioned above.

Conclusions : I. Women are not interested in other things.

II. An average woman's primary interest lies in home and specially in the kitchen.

35. Statement : The standard of education in private schools is much better than municipal and Zila parishand-run schools.

Conclusions : I. The municipal and Zila parishad should make serious efforts to improve standard of their schools.

II. All municipal and Zila parishad schools should be closed immediately. **(Bank P.O. 1997)**

36. Statement : About 50 per cent of the animal by-products — hair, skin, horns *etc.*, is edible protein. American chemists have developed a method of isolating 45 per cent of this protein. They used an enzyme developed in Japan to break down soya protein.

Conclusions : I. Americans have not been able to develop enzymes.

II. Animal by-products protein has the same composition as soya protein.

37. Statement : Although the education system has progressed from the point of view of the number of schools, most of them are ill-equipped and have not achieved excellence in imparting education.

Conclusions : I. In future, we should provide good teachers and equipment to these schools.

II. We need not open any more schools in the future.

(Bank P.O. 1996)

38. Statement : All those political prisoners were released on bail who had gone to jail for reasons other than political dharnas. Bail was not granted to persons involved in murders.

Conclusions : I. No political prisoner had committed murder.

II. Some politicians were not arrested.

39. Statement : The best evidence of India's glorious past is the growing popularity of Ayurvedic medicines in the west. **(S.B.I.P.O. 1997)**

Conclusions : I. Ayurvedic medicines are not popular in India.

II. Allopathic medicines are more popular in India.

40. Statement : Players who break various records in a fair way get special prizes. Player X broke the world record but was found to be under the influence of a prohibited drug.

Conclusions : I. X will get the special prize.

II. X will not get the special prize.

41. Statement : People who speak too much against the dowry are those who had taken it themselves. **(Assistant Grade, 1995)**

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58. Statement : Nation X faced growing international opposition for its decision to explode eight nuclear weapons at its test site.

Conclusions : I. The citizens of the nation favoured the derision.

II. Some powerful countries do not want other nations to become as powerful as they are.

59. Statement : Money plays a vital role in politics.

Conclusions : I. The poor can never become politicians.

II. All the rich men take part in politics.

60. Statement : Fortune favours the brave. **(Hotel Management, 1991)**

Conclusions : I. Risks are necessary for success.

II. Cowards die many times before their death.

61. Statement : I know nothing except the fact of my ignorance.

Conclusions : I. Writer's knowledge is very poor.

II. The world of knowledge is too vast to be explored by a single person.

62. Statement : A man must be wise to be a good wrangler. Good wranglers are talkative and boring. **(I. Tax & Central Excise, 1995)**

Conclusions : I. All the wise persons are boring.

II. All the wise persons are good wranglers.

63. Statement : Monitoring has become an integral part in the planning of social development programmes. It is recommended that Management Information System be developed for all programmes. This is likely to give a feedback on the performance of the functionaries and the efficacy with which services are being delivered.

Conclusions : I. All the social development programmes should be evaluated.

II. There is a need to monitor the performance of workers.

64. Statement : It is almost impossible to survive and prosper in this world without sacrificing ethics and morality. **(S.B.I.P.O. 1996)**

Conclusions : I. World appreciates some concepts but may not uphold it.

II. Concept of ethics and morality are not practicable in life.

65. Statement : Quality has a price tag. India is allocating lots of funds to education. **(Assistant Grade, 1994)**

Conclusions : I. Quality of education in India would improve soon.

II. Funding alone can enhance quality of education

66. Statement : The average number of persons per household is 5 in urban areas whereas it is 7 in rural areas. The national average is 6.

Conclusions : I. The population per unit area in the rural areas is higher than in the urban areas.

II. More persons live in the same household in the rural areas as compared to those in the urban areas.

67. Statement : The interview panel may select a candidate who neither possesses the desired qualifications nor the values and attributes.

(Bank P.O. 1996)

Conclusions : I. The inclusion of specialists on the interview panel does not guarantee that the selection will be proper.
II. The interview test has certain limitations in the matter of selection of candidates.

68. Statement : Inspite of the claim of the government of terrorism being under check, killing continues.

Conclusions : I. The terrorists have not come to an understanding with the government.
II. The government has been constantly telling a lie.

69. Statement : Modern man influences his destiny by the choice he makes unlike in the past. **(S.B.I.P.O. 1996)**

Conclusions : I. Earlier there were less options available to man.
II. There was no desire in the past to influence the destiny.

70. Statement : Leaders, who raise much hue and cry about the use of Hindi, generally send their children to English medium schools.

Conclusions : I. India lacks good Hindi medium schools.
II. There is a world of difference between preaching and practising.

ANSWERS

1. (*d*) : The statement mentions that morning walks improve health. But this does not mean that all healthy people go for morning walks. So, I does not follow. Also, nothing is mentioned about evening walks in the statement. So, II does not follow.

2. (*e*) : It is mentioned in the statement that one who considers price and quality before buying a product should buy the product of company X. So, both I and II follow.

3. (*d*) : Clearly, both I and II do not follow from the given statement.

4. (*a*) : It is mentioned in the statement that a neurotic is a person who behaves stupidly. So, I follows. The behaviour of normal persons cannot be deduced from the given statement. So, II does not follow.

5. (*d*) : The availability of vegetables is not mentioned in the given statement. So, I does not follow. Also, II is not directly related to the statement and so it also does not follow.

6. (*a*) : It is mentioned in the statement that India's economy depends mainly on forests. This means that forests should be preserved. So, I follows. But, that only preservation of forests can improve the economy, cannot be said. So, II does not follow.

7. (*e*) : The statement mentions that the world for a man is as he makes it himself. So, some people might find it good and some quite bad. Thus, both I and II follow.

8. (*e*) : Since both I and II provide suitable explanations to the given statement, so both follow.

9. (*b*) : Clearly, the statement talks of company X only and no other company. So, I does not follow. Also, it is mentioned that one can take a good shot even in bad weather conditions with a camera of company X. So, II follows.

10. (*d*) : The statement mentions the problem of increased migration of children to cities. But the ways to deal with the problem cannot be deduced from it. So, neither I nor II follows.

11. (*b*) : The statement talks of jade plants only and not 'all plants with thick leaves'. So. I does not follow. Also, since jade plants require little water, so they can be grown in place where water is not in abundance. So, II follows.

12. (*e*) : The statement mentions that after the amendment, no child below 14 years will be engaged in hazardous employment. This means that before the amendment, the practice of employing children below 14 years was in vogue. This in turn means that employers will have to abide by the amendment. So, both I and II follow.

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51. (*d*) : No other section of society except farmers has been talked about in the statement. So, neither I nor II follows.

52. (*b*) : The statement stresses the need to adopt a new method of examination. So, I does not follow. However, II directly follows from the given statement.

53. (*b*) : The workers in the organised sector are not being talked about in the statement. So, I does not follow. It is mentioned that some workers in the unorganised sector are engaged in sundry jobs. This means that they have fixed income. So, II follows.

54. (*a*) : Clearly, I directly follows from the statement. However, II is not directly related to the given statement and so does not follow.

55. (*b*) : Whether the national norm is appropriate or not cannot be said. So I does not follow. However, more number of beds per thousand population are available in the state. So, II follows.

56. (*d*) : According to the statement, 80% of the total runs were made by spinnners. So, I does not follow. Nothing about the opening batsmen is mentioned in the statement. So, II also does not follow.

57. (*d*) : Pakistan's ability to manufacture arms is not being talked about in the statement. So, I does not follow. The fact in II cannot be deduced from the given statement. So, II also does not follow.

58. (*d*) : Neither the citizens' response to the decision nor the reason for opposition by other nations can be deduced from the statement. So, neither I or II follows.

59. (*d*) : Neither the poor nor the rich, but only the role of money in politics is being talked about in the statement. So, neither I nor II follows.

60. (*a*) : According to the statement, only those who tackle situations bravely achieve success. So, I follows. However, II is vague with regard to the given statement and so does not follow.

61. (*b*) : The statement is a symbolic one and only II correctly explains it.

62. (*d*) : According to the statement, good wranglers are wise men. But it doesn't mean that all wise men are good wranglers. So, neither I nor II follows.

63. (*e*) : According to the statement, monitoring and evaluation of social development programmes — their function, performance and efficiency — is absolutely essential. So, both I and II follow.

64. (*b*) : Clearly, I is vague and so does not follow. However, II directly follows from the given statement.

65. (*a*) : According to the statement, funding is necessary to improve quality and India is allocating funds to education. This means that quality of education will improve in India. So, I follows. But funding alone is sufficient to enhance quality, is not true. So, II does not follow.

66. (*b*) : The population per household and not the population per unit area is being talked about in the statement. So, only II follows while I does not.

67. (*e*) : Clearly, both I and II correctly explain the given statement. So, both follow.

68. (*a*) : The statement implies that the government is continuously making efforts to curb terrorism, but it still continues to prevail. Thus, I follows while II does not.

69. (*a*) : Clearly, I directly follows from the statement while II cannot be deduced from it.

70. (*c*) : Clearly, either I or II could be the reason for the situation expressed in the statement.

OTHER MISCELLANEOUS TYPES

EXERCISE 5B

Directions (*Questions 1 to 27*) : *In each of the following questions, a statement / group of statements is given followed by some conclusions. Choose the conclusion which logically follows from the given statements.*

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18. Statements :

1. Shyam is not the father of Hari.
2. Hari is the son of Suresh.
3. Suresh has three sons.

Conclusions :

(*a*) Shyam is the son of Suresh. (*b*) Hari is the brother of Shyam.
(*c*) Suresh is the father of Hari. (*d*) Shyam has no children.

19. Statements : **(I.A.S. 1998)**

1. All members of Mohan's family are honest.
2. Some members of Mohan's family are not employed.
3. Some employed persons are not honest.
4. Some honest persons are not employed.

Conclusions :

(*a*) All members of Mohan's family are employed.
(*b*) The employed members of Mohan's famil are honest.
(*c*) The honest members of Mohan's family are not employed.
(*d*) The employed members of Mohan's family are not honest.

20. Statement : **(S.B.I.P.O. 1995)**

The data given by the U.S. Labour Ministry indicate that till the year 2000, there will be a shortage of 100,000 programmers. A spokesman from the industry said, "We should understand this thoroughly America needs Indian programmers. This is not only the question of investment but also of the talent with which the Indian programmers are equipped."

Conclusions :

(*a*) In other sectors also, there will be shortage of the talented labour till the year 2000.
(*b*) Indian programmers are the most talented in the world.
(*c*) Indian programmers are available on comparatively less salary in comparison to the programmers from other countries.
(*d*) Inspite of entering with huge capital in the Software Training Sector, U.S. could not be able to meet its own needs fully.
(*e*) The Indian Software Market is well equipped to send programmers to other countries.

21. Statements : **(S.C.R.A. 1993)**

1. Only students can participate in the race.
2. Some participants in the race are females.
3. All female participants in the race are invited for coaching.

Conclusions :

(*a*) All participants in the race are invited for coaching.
(*b*) All participants in the race are males.
(*c*) All students are invited for coaching.
(*d*) All participants in the race are students.

22. Statement : **(I. Tax & Central Excise, 1993)**

All scientists working in America are talented. Some Indian scientists are working in America.

Conclusions :

1. None of Indian scientists is talented.
2. Some talented Indian scientists have migrated to America.
3. All talented scientists are Indians.
4. Some Indian scientists are talented.

The conclusion(s) correctly drawn is/are

(*a*) 2 and 3 (*b*) 1 only (*c*) 2 and 4 (*d*) 2 only

23. Statement : **(S.C.R.A. 1994)**

Few shops on this road have neon lights, but they all have signboards.

Conclusions :

1. Some shops have either signboards or neon lights.
2. Some shops have both signboards and neon lights.
3. Some shops have no neon lights.
4. Some shops have no signboards.

The conclusion(s) correctly drawn is/are

(*a*) 1 alone (*b*) 1 and 4 (*c*) 2 alone (*d*) 2 and 3

24. Statement :

Amit and Subhash are friends. Subhash is friendly with all. Amit has many enemies. Rahul and Amit do not like each other.

Conclusions :

1. Amit, Rahul and Subhash form a clique.
2. Rahul and Subhash are friends.
3. Subhash is friendly with Amit's friends.
4. Amit and Rahul are both friends of Subhash.

The conclusion(s) correctly drawn is/are

(*a*) 3 and 4 (*b*) 2 and 3 (*c*) 1 and 2 (*d*) 2, 3 and 4

25. Statement : **(Central Excise, 1993)**

All watches sold in that shop are of high standard; some of the HMT watches are sold in that shop.

Conclusions :

1. All watches of high standard were manufactured by HMT.
2. Some of the HMT watches are of high standard.
3. None of the HMT watches is of high standard.
4. Some of the HMT watches of high standard are sold in that shop.

The conclusion(s) correctly drawn is/are

(*a*) 1 and 2 (*b*) 1 and 3 (*c*) 1 and 4 (*d*) 2 and 4

26. Statement :

A wise man saves for a rainy day.

A rainy day signifies adversity.

Conclusions :

1. A fool squanders everything.
2. A wise man is likely to get into adversity.
3. A clear day signifies prosperity.

The conclusion(s) correctly drawn is/are

(*a*) 1 only (*b*) 1 and 2 (*c*) 2 only (*d*) 1 and 3

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35. Statements :

1. Some very effective medicines are made from spider venom.
2. Poison of snake is also used for curing certain diseases.

Conclusion : All poisons cure some or the other disease.

The conclusion drawn

(*a*) definitely follows from the given statements

(*b*) does not follow from the given statements

(*c*) is probably true (*d*) Can't say

36. Statements : **(I. Tax & Central Excise, 1993)**

1. Water boils at 100°C.
2. Water freezes at 0°C.

Conclusion : At low pressure, water boils at lower temperatures.

The conclusion drawn is

(*a*) definitely true (*b*) definitely false

(*c*) either probably true or probably false (*d*) irrelevant

37. Statements :

1. During volcanic eruptions, molten lava oozes out in a stream.
2. The lava comes from under the crust of the earth.

Conclusion : The inside of the earth must be very hot.

The conclusion drawn is

(*a*) definitely true (*b*) probably true (*c*) definitely false (*d*) irrelevant

38. Statements : **(I. Tax & Central Excise, 1994)**

1. Oxygen is a gas.
2. This cylinder contains gas.

Conclusion : This cylinder contains oxygen.

The conclusion drawn is

(*a*) irrelevant (*b*) definitely true

(*c*) either probably true or probably false (*d*) definitely false

39. Statements :

1. Pyramids date back to about 300 B.C.
2. Lots of gold and other valuables were found in them.
3. China has no pyramids.

Conclusion : China cannot claim a rich past.

The conclusion

(*a*) follows from the given statements

(*b*) does not follow from the given statements

(*c*) is probably true (*d*) is probably false

40. Statements :

1. Persons of modest means try to have a house of their own.
2. Since buying or constructing a house is an expensive affair, they try to save money in all possible ways.
3. After years of saving, they realise that although they have saved the amount they had planned to save, it is not sufficient now for constructing a house.

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6. DERIVING CONCLUSIONS FROM PASSAGES

In this section of logical deduction, the question consists of a brief passage followed by certain inferences based on it. The candidate is required to analyse the passage and grasp the desirable facts from it. Then, he has to consider each inference in context of the given passage, decide upon its degree of truth or falsity and then choose the best alternative provided accordingly.

ILLUSTRATIVE EXAMPLES

Directions : ***Read the following passage and examine each inference given below it in the context of this passage.***

Mark your answer as :

(*a*) ***if the inference is 'definitely true';***
(*b*) ***if the inference is 'probably true';***
(*c*) ***if the 'data provided is inadequate';***
(*d*) ***if the inference is 'probably false'; and***
(*e*) ***if the inference is 'definitely false'.***

Ex. 1. The space exploration has been done mainly by using unmanned satellites called space probes containing a large variety of latest scientific instruments on board. These space probes have provided us the close up pictures and other data about planets and other bodies in the outer space. The climax of the intensive American space programme came when Neil Armstrong became the first man to set foot on the moon on July 20, 1969. Originally, the artificial satellites were launched for studying the upper atmosphere of earth.

1. The space probes have increased our knowledge about space and the bodies in it.
2. Space probes are meant to study the upper atmosphere of earth only.
3. Neil Armstrong was the first man to go into space.
4. Space probes are provided with computers.
5. Moon has been explored by man.

Solution :

1. (*a*) : It is mentioned in the passage that the space probes have provided pictures and certain data of the outer space and the heavenly bodies. Thus, they have helped us increase our knowledge of outer space and the bodies in it.

2. (*e*) : According to the passage, the space probes were first designed to study the upper atmosphere of earth. But at present, they are also used to explore outer space and obtain more information about it.

3. (*c*) : It is given in the passage that Neil Armstrong was the first man to step foot on moon. But the first man to go into space is not being talked out.

4. (*b*) : According to the passage, space probes are provided with large variety of latest scientific instruments. Thus, computers may also be present.

5. (*a*) : The fact mentioned in the passage that Neil Armstrong was the first man to set foot on the moon clearly proves that moon has been explored by man.

Ex. 2. Ministry of environment and forest has granted environmental clearance to the Karkatla open-cast expansion project of the Central Coal Fields Ltd. in Bihar that envisages exploitation of non-cocking coal reserves. The present production level of 0.8 million tonnes is proposed to be expanded to 1.5 million tonnes per annum at an estimated cost of 67.82 crores under the project. The total land area requirement for the proposed mining activities is about 651 hectares which includes about one-sixth of it as foreign land.

1. The expansion plan would require about 100 hectares of forest land.
2. Karkatla open-cast mine is the only one of non-cocking coal in the country.
3. There is no demand for non-cocking coal.
4. The production cost of one tonne of non-cocking coal from Karkatla mine will be about Rs 450.
5. Environmental concern gets less priority over the need of the coal.

Solution :

1. (*a*) : According to the passage, land required for expansion plan = 651 hectares.

   Forest land $= \left(\frac{1}{6} \times \text{total land}\right) = \frac{1}{6} \times 651 = 108.5 = 100$ hectares (approximately).

2. (*c*) : It is mentioned only that Karkatla mine deals with exploitation of non-cocking coal reserves. But, it is not given that it is the only such mine.

3. (*a*) : The granting of environmental clearance to Karkatla mine shows that there is a demand for non-cocking coal.

4. (*a*) : Total estimated production = 1.5 million tonnes = (1.5×10^6) tonnes

   Total estimated cost = Rs 67.82 crores = Rs (67.82×10^7)

   Cost per tonne of coal = Rs. $\left(\frac{67.82 \times 10^7}{1.5 \times 10^6}\right)$ = Rs 452.13 = Rs 450 (approximately)

5. (*c*) : The given fact is neither mentioned in nor can be derived from the passage.

Ex. 3. A radical new surgery procedure, laughed at not long ago, is holding out fresh hope for patients of cardiac myopathy, or enlargement of the heart. The technique, now in India, allows patients to go home two weeks after the operation, to lead a near-normal sedantary life. Cardiac myopathy is a condition that has a variety of causative factors. An attack from one of the 20 identified viruses, parasite infection, long-term alcohol abuse and blood pressure could bring it on, and in rare cases, it could follow child birth and is even known to run in families. The condition is marked by an increase in the size of the heart's chambers and a decrease in the efficiency of pumping. **(Bank P.O. 1997)**

1. Cardiac myopathy is hereditary.
2. The new technique was never tried in India in the past.
3. The cardiac myopathy slows down the heart beat.
4. Earlier the patients suffering from cardiac myopathy were required to travel abroad for such operation.
5. The efficiency of the heart is inversely proportional to the size of the heart.

Solution :

1. (*b*) : It is mentioned in the passage that in certain cases, cardiac myopathy was 'known to run in families'. So, it might be possible that it is hereditary.

2. (*a*) : The given conclusion can be clearly inferred from the line 'The technique, now in India, ...' which clearly means that the technique was previously not there in India.

3. (*a*) : It is clearly mentioned in the passage that cardiac myopathy is marked by 'a decrease in the efficiency of pumping'. This means that the heart beat is slowed down.

4. (*c*) : Nothing is mentioned about the time before the introduction of the new technique.

5. (*a*) : The given inference directly follows from the last line of the passage 'the condition is marked by an increase in the size of the heart's chambers and a decrease in the efficiency of pumping'.

Ex. 4. Though the state cultivates only 3.2 lakh tonnes of mangoes, they are of premium quality and with mangoes becoming second most consumed fruit in the world after grapes, the government has been trying exporting it through sea route which is cheaper. An experiment which was done in this regard last year has proved successful. **(Bank P.O. 1993)**

1. Quality of mangoes is an important factor in exports.
2. The state also exports good quality grapes.
3. There are some problems in exporting mangoes through sea route.
4. Most of the other exports are through sea routes which is cheaper.
5. The state also cultivates a large number of medium quality of mangoes.

Solution :

1. (*a*) : It is given in the passage that mangoes cultivated in the state are of good quality and the government is trying to export them. This implies the given fact.

2. (*c*) : Nothing about the production and export of grapes by the state is mentioned in the passage.

3. (*e*) : According to the passage, the government is trying to export mangoes through sea route which is cheaper. This clearly means that exporting mangoes through sea route does not entail any problems.

4. (*b*) : According to the passage, the government considers sea route a cheaper medium of export. Perhaps the other exports through sea route have given them this experience.

5. (*e*) : According to the passage, the state cultivates 3.2 lakh tonnes of mangoes, all of which are of premium quality.

EXERCISE 6A

Directions : ***In each question below is given a passage followed by several inferences. You have to examine each inference separately in the context of the passage and decide upon its degree of truth or falsity.***

Mark your answer as :

(*a*) ***if the inference is 'definitely true' i.e., it directly follows from the facts given in the passage;***

(*b*) ***if the inference is 'probably true' though not definitely true in the light of the facts given;***

(*c*) ***if you think the data are inadequate i.e., from the facts given you cannot say whether the inference is likely to be true or false;***

(*d*) ***if you think the inference is 'probably false' though not definitely false in the light of the facts given; and***

(*e*) ***if you think the inference is 'definitely false' i.e., it contradicts the given facts.***

Questions 1 to 5 **(Bank P.O. 1996)**

A recent survey shows that India has the lowest death rate for blood cancer. China, Thailand and Myanmar (countries that have taste for spices) also have low rates. Higher rates are found in U.S.A. where spices are not used. The typical American food remains chicken rolls, butter and beef.

1. Americans are unorthodox in their food habits.
2. Americans dislike spices.
3. Spices prevent blood cancer.
4. Spices promote forms of cancer other than blood cancer.
5. Chicken rolls, butter and beef promote cancer.

Questions 6 to 10

The basic thrust of the Government's policy is to provide price incentives to farmers to make them produce more food. But is a price-incentive system always efficient in ensuring incremental yields ? Our contention is that this incentive works only in persuading farmers to shift cultivation from one crop to another depending on which crop is more profitable at the given prices. But it would not be a sufficient condition in ensuring incremental output of all crops which is what is required.

6. This passage is taken from an article written by an expert on agricultural finance.
7. The author is advocating for more yield of various crops.
8. The Government is not ready to increase the procurement price of crops.
9. According to the passage, the farmers are not income-conscious.
10. Recently there was an agitation by farmers for increase in procurement price of crops.

Questions 11 to 16 **(Bank P.O. 1998)**

Urban services have not expanded fast enough to cope with urban expansion. Low investment allocations have tended to be underspent. Both public (*e.g.* water and sewage) and private (*e.g.* low-income area housing) infrastructure quality has declined. This impact of the environment in which children live and the supporting services available to them when they fall ill, seems clear. The decline in average food availability and the rise in absolute poverty point in the same unsatisfactory direction.

11. There is nothing to boast about urban services.
12. The public transport system is in the hands of private sector.
13. Birth rate is higher in urban areas as compared to rural areas.
14. Low-cost urban housing is one of the priorities.
15. The environment around plays an important role on the health status.
16. Though adequate provisions of funds were made but they remained unspent.

Questions 17 to 20

A tiger, when killing its natural prey, which it does either by stalking or lying in wait for it, depends for the success of its attack on its speed and, to a lesser extent, on the condition of its teeth and claws. When, therefore, a tiger is suffering from one or more painful wounds or when its teeth are missing or defective and its claws worn down, and it is unable to catch animals it has been accustomed to eating, it is driven by the necessity to killing human beings.

17. Human beings are the natural prey of tigers.
18. Sharp claws are needed by the tigers to kill animals in the forest.

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20. (*a*) : According to the passage, a tiger takes to killing man only when certain wounds render it incapable to kill its natural prey — the animals in the forest.

21. (*a*) : It is mentioned that Gujarat was uptil now not involved in manufacturing of castor oil, but was only a big trading centre. This implies that it used to supply castor seeds rather than processing them.

22. (*c*) : The given fact is neither mentioned in nor can be derived from the given passage.

23. (*a*) : The given fact directly follows from the last sentence of the passage.

24. (*a*) : It is mentioned that business prospects in the field of castor oil are good and the number of castor seed processing units is increasing. This implies the given fact.

25. (*a*) : It is mentioned that Gujarat has shifted from trading in castor seeds to manufacturing castor oil. This implies the given fact.

26. (*c*) : No mention of the land to be irrigated in India is there in the passage.

27. (*a*) : It is given in the passage that 'we can make full use of our water resources by building of dams'.

28. (*e*) : It is mentioned that much of our water resources are wasted due to floods.

29. (*a*) : It is mentioned that wastage of water takes place due to their unwise use for domestic purposes.

30. (*a*) : It is given in the passage that underutilisation of the water resources of our country is due to lack of capital or funds.

31. (*c*) : The given fact is neither mentioned in nor can be derived from the given passage.

32. (*a*) : It is mentioned in the passage that maximum losses suffered by the smaller units are because of lack of proper opportunities for recycling waste. This clearly implies the given fact.

33. (*b*) : From the first sentence of the passage, it is quite probable that operating on a large scale might make the pesticide units economically viable.

34. (*a*) : The fact directly follows from the sentence 'In view of the loss... waste minimisation techniques' in the passage.

35. (*b*) : It is mentioned in the passage that the profit margins of small units are low and so small adverse conditions land them in trouble. Thus, it is quite probable that lack of funds compels these units to ignore house keeping.

36. (*b*) : According to the passage the ignorance of the consumer is exploited in the countryside. So, it is quite probable that the consumer movement has not spread to the countryside.

37. (*b*) : It is mentioned in the passage that the ignorance of the consumer in the countryside is exploited by unscrupulous traders. So, it is probable that not much care has been taken to take any action against such traders.

38. (*c*) : Nothing is mentioned about the consumer movement in other countries in the passage.

39. (*b*) : It is mentioned in the passage that people need to be encouraged to enlist themselves in consumer cooperatives. So, it is quite probable that people do not have much interest in it.

40. (*b*) : It is mentioned in the passage that 'outbreaks in South and South-east Asia have been rapidly rising mostly due to falling environmental and public health standards during urbanisation. Thus, the fact in the question is quite probable.

41. (*e*) : The passage talks of outbreak of dengue during the past 15 years. This contradicts the fact given in the question.

42. (*c*) : The passage mentions the outbreak of dengue in Asian countries only and not the European countries.

43. (*a*) : It is mentioned in the passage that cases of outbreak of dengue are rapidly rising in South Asian countries since the last 15 years. This means that adequate steps to combat dengue have not been taken.

44. (*c*) : Nothing about the effect of DSS type dengue is mentioned in the passage.

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recent policy decisions taken by the Government to make women self-reliant. The states have been asked to end discrimination against the fair sex so far new jobs are concerned. The same wage for women workers should also be strictly adhered to, it has been emphasised.

36. More job opportunities are being created for women to eradicate poverty among them.

37. The women have been benefited much by this government policy.

38. The Government emphasises on equality of men and women.

39. The Indian Government has arranged for proper education of women so that they can get good jobs.

40. Women should be given higher wages than men to make them self-reliant.

Questions 41 to 45 **(Bank P.O. 1991)**

The Haldia project, after being in a planning stage for many years, will ultimately become a reality with the joint participation of the Government of West Bengal and the House of Tatas. The letter of intent has been received in November 1991. The project will fulfill a long-felt need of modernisation of industry in Eastern India. The economic development of this region has also suffered a lot.

41. The planning of Haldia project started in the year 1984.

42. There is no industry in Eastern India.

43. Apart from West Bengal, other neighbouring states will also be benefited by the project.

44. Implementation work on the project has started.

45. The cost of the project would be equally shared by the Government of West Bengal and the House of Tatas.

Questions 46 to 50

The domestic market for electronic hardware in the country is likely to grow from Rs 1800 crore to about Rs 6500 crore per annum in the next few years. The Government is likely to further restrict foreign exchange needed for imports. So far, India has been importing about 80 percent of the components required for manufacturing electronics gadgets. The country produced only 'passive components' like resistors, capacitors and conductors. Even integrated circuits (ICs) are being produced in a small way at high cost. Semi-conductors have remained India's weak spot.

46. Government is considering to further restrict foreign exchange needed for imports.

47. In India many manufacturers are reluctant to produce semi-conductors.

48. India does not have expertise in producing passive components like resistors, capacitors etc.

49. An increase of about 250 percent in India's domestic electronic market is predicted during the next few years.

50. All the integrated circuits required for India are imported from U.S.A.

Questions 51 to 55 **(Bank P.O. 1997)**

In 1994-95, India consumed 65.3 million tonnes (mt) of petro products, out of which consumption of diesel was 28.3 million tonnes. The annual increase in diesel consumption from 1990-91 has been 8.5 percent as against 4.7 percent for all petro products.

As per 1993-94 data, 11 percent of diesel consumption is by industry, plantation etc., 8 percent by road transport, 5.5 percent by the railways and 75 percent by

unspecified users. The consumption by farmers for tractors and irrigation pumps has been roughly 5.7 million tonnes valued at about Rs 5,500 crore. The agricultural produce in 1994-95 was valued at Rs 2,23,076 crore.

The consumption of diesel in 1995-96 is estimated at 32 million tonnes whereas consumption of petrol accounts for 14 percent of diesel consumption.

51. If the cost of diesel is increased along with small matching increase in procurement price, the farmer may be marginally affected.

52. The percentage increase in the consumption of diesel in India is equal to that of all petro products.

53. One rupee increase in diesel price will generate as much revenue as roughly seven rupee increase in petrol price.

54. The consumption of petrol by farmers for agricultural purpose is approximately 50 percent less than use of diesel.

55. The consumption of petrol for 1995-96 can be estimated to be in the range of 14 million tonnes.

ANSWERS

1. (*a*) : It is mentioned that taking into considerations the changes at the international level, India has to evolve a long term import and export policy. This clearly implies the given fact.

2. (*a*) : It is given in the passage that 'a scheme for providing free flow of credit to all those who are engaged in sericulture' is necessary. This implies the given fact.

3. (*c*) : Nothing about the management of silk industries in China and Korea is mentioned in the passage.

4. (*a*) : The statement is evident from the sentence '...the emerging trends...Korea' in the passage.

5. (*e*) : The passage talks of formulating 'a new National Silk Policy'. This means that one already existed.

6. (*e*) : It is clearly mentioned in the passage that the idea of privatisation has been sweeping both the developed and the developing world for more than a decade.

7. (*c*) : The passage does not contain any mention of U.S.A.

8. (*a*) : It is mentioned clearly in the passage that the idea of privatisation has been gathering momentum in India.

9. (*a*) : The passage says that earlier nationalisation was considered the remedy of socio-economic ills whereas at present, the idea of privatisation failed to improve the socio-economic situations of some countries.

10. (*e*) : It is clearly mentioned that the idea of privatisation is being promoted all over the world and has not been successfully transplanted in India.

11. (*b*) : According to the passage, even after the nomination form has been filled up by the deceased, the nominee faces difficulty in acquiring property, from the legal heirs. So, the given fact is quite probable.

12. (*a*) : It is mentioned in the passage that the nominee may face some problem from the legal heirs in acquiring a property. This clearly implies the given fact.

13. (*a*) : Clearly, such a training is necessary for people to justify nomination and overcome the problems faced by legal heirs.

14. (*c*) : Nothing about how cooperative movement started is mentioned in the passage.

15. (*c*) : The passage talks of similarity in laws of cooperative societies in all states and not the property related laws.

16. (*a*) : Since the plant set up in Orissa is the largest in Asia, it is evident that it is also the largest in India.

17. (*e*) : Not aluminium, but its ore is exported to Japan and European countries.

18. (*b*) : Since the largest bauxite producing plant is in Orissa, it is much possible that Orissa is the largest producer of bauxite.

19. (*e*) : The plant set up in Orissa uses French technology; it was not set up by financial aid from France.

20. (*a*) : Total reserves of bauxite = 270 million tonnes.
High quality reserves = 73 million tonnes.
Percentage of high quality reserves $= \left(\frac{73}{270} \times 100\right)\% = 27\%$.

21. (*c*) : The passage talks of the children in the age group of 6 to 12 years only.

22. (*c*) : The passage mentions the attitude of white men only regarding adoption of a child and not that of black families.

23. (*e*) : According to the passage, only three U.S. states promote race matching in adoption, while 40 others favour the practice. This contradicts the fact given in the question.

24. (*a*) : According to the passage, among the adoptable children, 44% are white and 43% are black. Thus, the remaining *i.e.* 13% are neither black nor white.

25. (*c*) : It is mentioned that 67% of the families willing to adopt a child are white, but the percentage of white families willing to adopt a black child, is not given in the passage.

26. (*a*) : The given fact can be instantly derived from the first sentence of the passage.

27. (*c*) : Nothing is mentioned about the contribution of agricultural sector in recent years, in the passage.

28. (*e*) : It is given in the passage that agriculture accounts for the largest share to the national income. It implies that certain other activities contribute to the national income of India, too.

29. (*a*) : It is clearly mentioned in the passage that the contribution of agricultural sector increased from 40 percent at the time of independence to 50 percent during the next decade.

30. (*a*) : It is clear from the passage that agricultural sector is the largest contributor to national income. This implies the fact given in the question.

31. (*c*) : The given fact is neither mentioned in nor can be deduced from the passage.

32. (*d*) : It is mentioned that public sector enterprises lack the necessary funds to provide for the increasing need of power capacity.

33. (*e*) : The fact that private industries can contribute 1000 MW to 2000 MW of power, contradicts the fact given in the question.

34. (*a*) : According to the passage, the capacity of power generation ought to be increased every year and the funds must be collected by regulating the tariff accordingly. This implies the given fact.

35. (*a*) : The given fact is clearly evident from the first two sentences in the passage.

36. (*e*) : It is mentioned in the passage that more job opportunities are being provided to women to make them self-reliant.

37. (*c*) : Only the policy of the Government is mentioned in the passage and not the consequences.

38. (*a*) : It is given in the passage that the Central Government has asked the states to end the discrimination on grounds of sex.

39. (*c*) : Nothing is mentioned about the efforts of the Government as regards education of women, in the passage.

40. (*e*) : It is mentioned in the passage that men and women should be given equal wages for equal work.

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that there is a vast potential for developing wind as an alternative source of energy. The wind survey has four components — direction, duration, speed and distribution. On this basis U.P. hill areas have been found an ideal place for setting up aerogenerators. In U.P. hills alone, as many as 58 sites have been identified.

1. Only the hilly areas of U.P. were surveyed for setting up aerogenerators.
(*a*) Data inadequate (*b*) Definitely true (*c*) Probably false
(*d*) Definitely false (*e*) Probably true

2. The survey was conducted under the government of U.P.
(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Definitely false (*e*) Probably false

3. Wind, as a source of energy, can replace exhaustible sources of energy.
(*a*) Definitely false (*b*) Data inadequate (*c*) Probably true
(*d*) Probably false (*e*) Definitely true

4. Energy by wind is a comparatively new emerging field.
(*a*) Probably true (*b*) Probably false (*c*) Definitely true
(*d*) Data inadequate (*e*) Definitely false

5. 58 sites identified in U.P. did not have electricity.
(*a*) Definitely true (*b*) Definitely false (*c*) Data inadequate
(*d*) Probably true (*e*) Probably false

Questions 6 to 10 **(Bank P.O. 1995)**

Indian granite industry is in peril in the absence of a uniform policy from the State Governments, despite the thrust given by liberalisation policies of the Union Government in the last two years. Compared to the remarkable progress in the field during the last three years, the absence of matching policies by State Governments had put granite quarry owners and others involved in the industry on the verge of collapse in the international market. The policies differed from state to state, had created problems as far as loyalty, dead rent and duration of lease were concerned.

6. The granite production is largely controlled by individuals.
(*a*) Data inadequate (*b*) Definitely true (*c*) Probably true
(*d*) Probably false (*e*) Definitely false

7. The granite produced in India does not match with the quality of international level.
(*a*) Definitely false (*b*) Definitely true (*c*) Probably false
(*d*) Probably true (*e*) Data inadequate

8. The Union Government's liberalisation policy became applicable to granite industry only during the last two years.
(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Probably false (*e*) Definitely false

9. Each state having granite quarry has set up its own rules which are contrary to the interest of the industry.
(*a*) Probably true (*b*) Data inadequate (*c*) Probably false
(*d*) Definitely false (*e*) Definitely true

10. Till three years ago, granite production in India was not profitable.
(*a*) Data inadequate (*b*) Probably true (*c*) Definitely false
(*d*) Probably false (*e*) Definitely true

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20. People prefer status quo.

(*a*) Probably true (*b*) Probably false (*c*) Definitely true
(*d*) Definitely false (*e*) Data inadequate

Questions 21 to 25

Dryland farming is the only way to not only combat recurring drought but also meet the increasing food requirements of India. About 45% of India's total crop production now comes from drylands. By the end of this century, this will have to increase to 60% if India is to provide adequate food for projected population of one billion by the turn of the century.

21. Dryland farming is important for India.

(*a*) Data inadequate (*b*) Definitely true (*c*) Probably true
(*d*) Probably false (*e*) Definitely false

22. The per acre crop production in more in drylands than others.

(*a*) Definitely false (*b*) Definitely true (*c*) Probably false
(*d*) Probably true (*e*) Data inadequate

23. India is self-sufficient in food production.

(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Probably false (*e*) Definitely false

24. At present, India gets larger food production from wetlands.

(*a*) Probably true (*b*) Data inadequate (*c*) Probably false
(*d*) Definitely false (*e*) Definitely true

25. In India, the rate of growth of population is 15 percent per year.

(*a*) Data inadequate (*b*) Probably true (*c*) Definitely true
(*d*) Probably false (*e*) Definitely false

Questions 26 to 30 **(S.B.I.P.O. 1995)**

In the context of computers, the hardware specialities like the tendency of research connected with human factors, the design of the work stations, key boards, visual display etc. are being concentrated, though the literature connected with interface and software problems has recently been on the increase. There are two reasons for it. The first reason in the light of the increasing power of computers is that the designers have got an opportunity to select and organise that technique which the user follows in communicating the message. The second is that the human factors research organisations have deviated from physical specialities of self improving work-system and gone to the psychological dimensions of the man-machine interaction.

26. In the field of computers, a change has taken place in the approach of the human factors research organisations.

(*a*) Data inadequate (*b*) Definitely true (*c*) Probably true
(*d*) Definitely false (*e*) Probably false

27. The human factors research organisations do not help in designing the software system. They help only in the evaluation of ultimate production.

(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Probably false (*e*) Definitely false

28. There has been a systematic progress in the basic computer technique.

(*a*) Probably true (*b*) Probably false (*c*) Definitely false
(*d*) Data inadequate (*e*) Definitely true

29. The tools and methods of human research organisations have also undergone a change.

(*a*) Definitely true (*b*) Definitely false (*c*) Probably false
(*d*) Data inadequate (*e*) Probably true

30. The human research organisations in the field of computers, had been started two decades ago.

(*a*) Probably false (*b*) Probably true (*c*) Definitely true
(*d*) Definitely false (*e*) Data inadequate

Questions 31 to 35

The caffeine in one morning's coffee or tea may improve the complex reasoning ability of extroverts but has the opposite effect on introverts. More than 700 people were given caffeine equal to no more than three cups of coffee and then tested on word analogies, sentence completion, and identification of antonyms. The researchers believe that the caffeine was beneficial to the extroverts in the morning because they take longer to wake up. Introverts are more alert in the morning and become over-stimulated by the drug which interferes with their reasoning power.

31. The adverse effect on the reasoning power of introverts is not due to caffeine.

(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Probably false (*e*) Definitely false

32. Caffeine has greater effect early in the morning.

(*a*) Definitely false (*b*) Definitely true (*c*) Probably false
(*d*) Probably true (*e*) Data inadequate

33. Extroverts do not find caffeine beneficial in the evening.

(*a*) Data inadequate (*b*) Definitely true (*c*) Definitely false
(*d*) Probably true (*e*) Probably false

34. Complex reasoning ability is made up of word analogies, sentence completion and identification of antonyms.

(*a*) Probably false (*b*) Probably true (*c*) Definitely true
(*d*) Data inadequate (*e*) Definitely false

35. Caffeine affects reasoning ability of people who drink tea or coffee.

(*a*) Probably true (*b*) Definitely true (*c*) Probably false
(*d*) Definitely false (*e*) Data inadequate

Questions 36 to 40 **(U.T.I. 1993)**

A survey in India indicated that in the core section of the companies, which were analysed, the compensation package for executives was divided into several fringe benefit groups. The number of items included in it rose as one ascended the management hierarchy. In many companies, provision was made for transportation and medical and housing assistance. A few companies also provided for children's education or permitted family allowance. Some of them have now adopted a specialised approach called the "cafeteria approach" in salary fixation. What is sought here is that the benefits must meet an executive's needs. Therefore, an appropriate selection has to be made of the benefits in terms of his needs after consulting him. Thus, this approach would individualise the system as the final choice is left to the executive concerned.

36. There is a standard universal compensation package for executives in most companies.

(*a*) Definitely true (*b*) Definitely false (*c*) Probably true
(*d*) Probably false (*e*) Data inadequate

37. Fringe benefits offered by many companies take care of most of the basic physiological needs of the executives.

(*a*) Data inadequate (*b*) Probably true (*c*) Definitely true
(*d*) Probably false (*e*) Definitely false

38. While designing the compensation package for executives, certain companies try to establish a match between needs and benefits.

(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Probably false (*e*) Definitely false

39. Nowadays, most of the companies in India are designing their compensation packages on the lines of such packages offered by the companies in foreign countries.

(*a*) Definitely false (*b*) Data inadequate (*c*) Probably false
(*d*) Definitely true (*e*) Probably true

40. The survey conducted in India on compensation package included employees working at different levels, including executives.

(*a*) Probably false (*b*) Definitely false (*c*) Probably true
(*d*) Definitely true (*e*) Data inadequate

Questions 41 to 45

There is more bad news on food front. It now appears certain that there will be a shortfall of about 9 million tonnes in the food production in the current kharif season, which in turn means five million tonnes less than the production achieved in the last kharif season. However, rice procurement may only be partially affected since West Bengal and Andhra Pradesh have had sufficient rainfall while Punjab, the major contributor to the central pool is less dependent on rainfall. Still, the overall availability of rice may go down by more than four million tonnes. There may be worst news ahead.

41. There is no canal water facility in West Bengal and Andhra Pradesh.

(*a*) Definitely false (*b*) Probably false (*c*) Data inadequate
(*d*) Probably true (*e*) Definitely true

42. The procurement price of rice will increase this year.

(*a*) Data inadequate (*b*) Definitely true (*c*) Probably true
(*d*) Definitely false (*e*) Probably false

43. Rice is mainly produced in kharif season.

(*a*) Definitely true (*b*) Probably false (*c*) Definitely false
(*d*) Data inadequate (*e*) Probably true

44. In the last year, there was a deficit production of rice by five million tonnes.

(*a*) Probably true (*b*) Probably false (*c*) Definitely false
(*d*) Definitely true (*e*) Data inadequate

45. It is likely that production of rice will be below the normal level in the next year.

(*a*) Probably false (*b*) Definitely false (*c*) Data inadequate
(*d*) Definitely true (*e*) Probably true

Questions 46 to 50 **(Bank P.O. 1997)**

Rabies is a disease transmitted to man and animals through the bite of a rabies-infected animal, most commonly by dogs. It is caused by a virus present in the saliva of the infected animal which gets deposited in the wound of the bite victim, multiplies

and travels towards brain and spinal cord. If not treated, about half of such cases develop rabies. Symptoms of the disease start one to three months after the bite. Very few laboratory tests are available for the diagnosis of rabies in India. Precautionary measures include prompt washing of the dog bite wound with soap and water. The wound is also treated with cetavion : tincture of iodine or spirit.

46. The governments and local bodies should expedite measures to catch and kill stray dogs as a preventive measure.

(*a*) Definitely false (*b*) Definitely true (*c*) Probably false
(*d*) Probably true (*e*) Data inadequate

47. Rabies can be transmitted from any animal to the other through open cuts and wounds.

(*a*) Data inadequate (*b*) Probably true (*c*) Probably false
(*d*) Definitely true (*e*) Definitely false

48. The bite of rabies-infected animal to a healthy animal definitely results in spread of rabies.

(*a*) Definitely true (*b*) Probably true (*c*) Data inadequate
(*d*) Definitely false (*e*) Probably false

49. The saliva of the house dogs should be periodically tested for the detection of rabies.

(*a*) Probably true (*b*) Probably false (*c*) Definitely true
(*d*) Data inadequate (*e*) Definitely false

50. Western countries have well equipped laboratory tests to detect rabies.

(*a*) Definitely false (*b*) Data inadequate (*c*) Probably true
(*d*) Definitely true (*e*) Probably false

ANSWERS

1. (*c*) : It is mentioned in the passage that the wind survey showed that there is a vast potential for harnessing wind energy. This means that an overall survey must have been made and not only of the hilly areas of U.P.

2. (*b*) : It may be true that the survey was conducted under the U.P. government as the areas of U.P. were also surveyed.

3. (*e*) : According to the passage, wind is an inexhaustible source of energy and efforts are being made to develop wind as an alternative source of energy. This clearly implies the given fact.

4. (*c*) : In the passage, it is given that not much has been done in the field of wind energy and efforts are on. Thus, it is clear that wind energy is a comparatively new emerging field.

5. (*c*) : In the passage, it is not mentioned whether the 58 sites identified in U.P. had the facility of electricity or not.

6. (*b*) : It is mentioned in the passage that the absence of matching policies by State Governments has put 'granite quarry owners' on the verge of collapse. This implies the given fact.

7. (*e*) : Nothing about the quality of granite produced in India is mentioned in the passage.

8. (*a*) : It is mentioned in the passage that the liberalisation policies of Union Government gave a thrust to the granite industry in the last two years. This clearly implies the given fact.

9. (*e*) : The given fact directly follows from the last sentence of the passage.

10. (*a*) : Nothing about profitability of granite industry three years ago is mentioned in the passage.

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41. (*e*) : According to the passage, the rice production in West Bengal and Andhra Pradesh would not be affected since they had sufficient rainfall. This implies that the farming there is dependent mainly on rain and no other irrigation facilities are available.

42. (*c*) : It is mentioned in the passage that rice production has gone down. This may lead to a rise in procurement price of rice.

43. (*a*) : The fact is clearly evident from the given passage.

44. (*c*) : According to the passage, there is a deficit production of rice by five million tonnes in the present year.

45. (*e*) : It is said in the passage : 'There may be worst news ahead'. There is no surety about the given fact. But it appears to be true according to the present trends.

46. (*e*) : It is not mentioned in the passage whether the bite of only stray dogs causes rabies. So, the given fact cannot be deduced from the passage.

47. (*d*) : The fact directly follows from the given passage.

48. (*a*) : The given fact directly follows from the first sentence of the passage.

49. (*d*) : The given fact is neither mentioned in nor can be derived from the passage.

50. (*b*) : Nothing about the laboratory tests in Western countries is mentioned in the passage.

7. THEME DETECTION

In this type of questions, a paragraph is given followed by certain statements which may or may not be inferred from the passage. The candidate is required to choose that statement which contains the jist or the theme of the passage *i.e.*, the idea that it conveys.

Example : Through advertising, manufacturing exercises a high degree of control over consumer's desires. However, the manufacturer assumes enormous risks in attempting to predict what consumers will want and in producing goods in quantity and distributing them in advance of final selection by the consumers. **(S.B.I.P.O. 1995)**

The paragraph best supports the statement that manufacturers —

(*a*) distribute goods directly to the consumers.
(*b*) can eliminate the risk of overproduction by advertising.
(*c*) always take moderate and calculated risk.
(*d*) can predict with great accuracy the success of any product they put on the market.
(*e*) must depend upon the final consumers for the success of their undertakings.

Solution : According to the passage, it is very difficult for the manufacturer to predict the consumers' response to his products. But by advertising, he can stimulate the consumers to buy his product. So, the theme of the paragraph is best mentioned in (*b*). Hence, (*b*) is the answer.

(*a*) is incorrect because it is mentioned in the paragraph that manufacturers distribute goods in advance of their demands and not directly to the consumers.
(*c*) is wrong because according to the passage, manufacturers take 'enormous' and not 'moderate' risks.
(*d*) is wrong because it is mentioned in the passage that manufacturers take great risk in predicting what the consumers want.
(*e*) is a true statement but it does not depict the complete theme of the passage.

EXERCISE 7

Directions : ***Each of the following questions contains a small paragraph followed by a question on it. Read each paragraph carefully and answer the question given below it :***

1. The virtue of art does not allow the work to be interfered with or immediately ruled by anything other than itself. It insists that it alone shall touch the work in order to bring it into being. Art requires that nothing shall attain the work except through art itself. **(Bank P.O. 1996)**

This passage best supports the statement that :

(*a*) art is governed by external rules and conditions.
(*b*) art is for the sake of art and life.
(*c*) art is for the sake of art alone.
(*d*) artist realises his dreams through his artistic creation.
(*e*) artist should use his art for the sake of society.

2. Though the waste of time or the expenditure on fashions is very large, yet fashions have come to stay. They will not go, come what may. However, what is now required is that strong efforts should be made to displace the excessive craze for fashion from the minds of these youngsters.

The passage best supports the statement that :

(*a*) fashion is the need of the day.
(*b*) the excessive craze for fashion is detrimental to one's personality.
(*c*) the hoard for fashion should be done away with so as not to let down the constructive development.
(*d*) work and other activities should be valued more than the outward appearance.

3. Due to enormous profits involved in smuggling, hundreds of persons have been attracted towards this anti-national activity. Some of them became millionaires overnight. India has a vast coastline both on the Eastern and Western Coast. It has been a heaven for smugglers who have been carrying on their activities with great impunity. There is no doubt, that from time to time certain seizures were made by the enforcement authorities, during raids and ambush but even allowing these losses the smugglers made huge profits.

The passage best supports the statement that :

(*a*) smuggling hampers the economic development of a nation.
(*b*) smuggling ought to be curbed.
(*c*) authorities are taking strict measures to curb smuggling.
(*d*) smuggling is fast increasing in our country owing to the quick profit it entails.

4. The only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself. Through these demands he is stimulated to act as a member of a unity, to emerge from his original narrowness of action and feeling, and to conceive himself from the standpoint of the welfare of the group to which he belongs.

The passage best supports the statement that real education —

(*a*) will take place if the children imbibe action and feeling.
(*b*) will take place if the children are physically strong.
(*c*) is not provided in our schools today.
(*d*) comes through the interaction with social situations.
(*e*) comes from the self-centred approach of the students. **(Bank P.O. 1996)**

5. Emerson said that the poet was landlord, sealord, airlord. The flight of imagination made the poet master of land, sea and air. But a poet's dream of yesterday becomes today an actual achievement and a reality for all men. Even those who invented, improved and perfected the aeroplane could hardly have dreamt of the possibility of flight into outer space.

The passage best supports the statement that :

(*a*) seemingly impossible imaginations make one a good poet.
(*b*) all imaginations become a reality some day.
(*c*) what man imagined has never been impossible; he has always turned it a reality through his conception of ideas and sheer hard labour.
(*d*) man has reached the climax of technological development with his exploration into outer space.

6. The prevention of accidents makes it necessary not only that safety devices be used to guard exposed machinery but also that mechanics be instructed in safety

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(*c*) a nation's economy strengthens with the increase in exports.

(*d*) English trade has continually increased since the Second World War.

10. Throughout the ages the businessman has helped build civilisation's great cities, provided people with luxuries and artists with patronage, and lift his fellow citizens to understand the standard of living. In the last few centuries the businessman has seeded the Industrial Revolution around the world.

The passage best supports the statement that the businessman —

(*a*) is accountable to the society.

(*b*) lives luxurious and comfortable life.

(*c*) is the beneficiary of the Industrial Revolution.

(*d*) is capable of raising his standard of living.

(*e*) has contributed to the growth of civilisation. **(S.B.I.P.O. 1995)**

11. Industrial exhibitions play a major role in a country's economy. Such exhibitions, now regularly held in Delhi, enable us to measure the extent of our own less advanced industrial progress and the mighty industrial power and progress of countries like the U.K., U.S.A. and Russia whose pavilions are the centres of the greatest attention and attractions.

The passage best supports the statement that industrial exhibitions —

(*a*) greatly tax the poor economies.

(*b*) are more useful for the developed countries like U.S.A. whose products stand out superior to those of the developing countries.

(*c*) are not of much use to the countries who are industrially backward.

(*d*) boost up production qualitatively and quantitatively by analytical comparison of a country's products with those of the developed countries.

12. Satisfaction with co-workers, promotion opportunities, the nature of work, and pay goes with high performance among those with strong growth needs. Among those with weak growth needs, no such relationship is present — and, in fact, satisfaction with promotion opportunities goes with low performance.

This passage best supports the statement that :

(*a*) satisfaction is an inevitable organisational variable.

(*b*) job satisfaction and performance are directly and closely related.

(*c*) relationship between job satisfaction and performance is moderated by growth need.

(*d*) every organisation has few employees having weak growth need.

(*e*) high performance is essential for organisational effectiveness.

13. The attainment of individual and organisational goals is mutually interdependent and linked by a common denominator — employee work motivation. Organisational members are motivated to satisfy their personal goals, and they contribute their efforts to the attainment of organisational objectives as means of achieving these personal goals. **(S.B.I.P.O. 1995)**

The passage best supports the statement that motivation —

(*a*) encourages an individual to give priority to personal goals over organisational goals.

(*b*) is crucial for the survival of an individual and organisation.

(*c*) is the product of an individual's physical and mental energy.

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8. QUESTION — STATEMENTS

This section consists of problems in which a particular question is given followed by certain statements containing facts providing clues to answer the question. The candidate is required to find out which of the given statements is/are sufficient to answer the given question.

If the answer can be derived from statement I alone, we write (*a*); if the answer can be derived from statement II alone, we write (*b*); if the answer can be derived from either of the statements I and II, we write (*c*); if the answer cannot be derived even from both the statements taken together, we write (*d*); and if the answer can be derived from both the statements taken together, we write (*e*).

Ex. Has decrease in infant mortality rate increased the life span of human beings ?

I. The average life span of tribals is 85 years.

II. Women outlive men in younger age groups.

Sol. Clearly, none of the statements I and II alone or together lead to the answer to the question. So, the answer is (*d*).

EXERCISE 8

Directions : ***Each question given below has a problem and two statements numbered I and II giving certain information. You have to decide if the information given in the statements is sufficient for answering the problem. Indicate your answer as***

(*a*) ***if the data in statement I alone are sufficient to answer the question;***

(*b*) ***if the data in statement II alone are sufficient to answer the question;***

(*c*) ***if the data either in I or II alone are sufficient to answer the question;***

(*d*) ***if the data even in both the statements together are not sufficient to answer the question; and***

(*e*) ***if the data in both the statements I and II are needed to answer the question.***

1. Why haven't Indian scientists made much headway in any field after independence ?

I. Indian scientists are not provided with up-to-date laboratory facilities.

II. Indian scientists regard that knowledge of western science advances is enough for a nation to advance. **(U.D.C. 1995)**

2. What time does the office start working ? **(Bank P.O. 1995)**

I. Some employees reach office at 9.30 a.m.

II. Some employees reach office at 4.30 p.m.

3. Is Srikant eligible for an entry pass to the company premises ?

I. The company does not allow strangers to enter the company.

II. All employees are eligible to get a pass.

4. Is Nitin entitled to free studentship ? **(S.B.I.P.O. 1994)**

I. The school offers free studentship to those who are under 12 years of age and have secured 60 percent marks in the last final examination.

II. Nitin has secured 85 percent marks in the last final examination.

5. How many children in a room are boys ?

I. 50% of the children are in white dress.

II. Only boys are in white dress.

6. Did Arvind lose money in the school ? **(Assistant Grade, 1992)**

I. Children are not expected to carry money with them in the school.

II. His father gave him money in the morning.

7. What is the exact duration of the course ? **(S.B.I.P.O. 1997)**

I. It has three semesters but there is internship in between second and third semester.

II. Duration of the internship varies as per the report of the professor.

8. Who is the best salesman in the company ?

I. Rohit sold maximum number of air conditioners this summer.

II. The company made the highest profit this year.

9. Is exercise good for health ?

I. Most of the people, who exercise regularly, keep fit.

II. Health is worth preserving.

10. There were 54 members of a cooperative society. How many members attended the recent Annual General Meeting (AGM) ? **(Bank P.O. 1996)**

I. Normally two-third members attend the meeting.

II. One-sixth of the members were out of the town on AGM's day.

11. How many matches will be played between A and B in this tournament ?

I. A has already won three matches against B and with this third win he has won the tournament.

II. The fifth match will be played next week.

12. Out of A, B, C and D, who was selected by the interview panel ?

I. C's interview was much better than A and D.

II. B had better qualification and experience than the remaining three.

(Bank P.O. 1998)

13. Who is a better artist — Abid or Hussain ?

I. Abid had more art exhibitions.

II. The number of paintings sold by Hussain is more.

14. Is cigarette smoking injurious to health ?

I. Non-smokers have a longer life-span.

II. The incidence of heart attacks is more in smokers.

15. Did the author of this novel die before 1956 ?

I. Transistors were invented in 1957.

II. There is a reference to transistors in this novel.

16. How many flats are there in this housing complex ? **(Bank P.O. 1997)**

I. Each wing has 16 flats which is incidentally equal to the total number of buildings.

II. Each building has 4 wings — A, B, C and D.

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30. A ground plus four storeyed residential building has 3 wings namely A, B and C. How many flats are there in the building ? **(Bank P.O. 1996)**

I. Each floor has equal number of flats.

II. All the three flats on the ground floor of wing A are unoccupied.

31. Why is it that most of the eminent music maestros are Muslims ?

I. Religions other than Islam do not encourage fine arts.

II. Muslims did not go in for western type of education. **(U.D.C. 1995)**

32. How many cups of tea did Satish take yesterday in office ? (Presume that he paid for the tea taken by him.)

I. He paid Rs 15 for the day for tea and snacks.

II. Tea in his office costs Re 1 per cup.

33. A girl had to pass in both English and Mathematics to be promoted. Was any girl promoted ?

I. 40 girls passed in English and 30 girls passed in Mathematics.

II. There were totally 60 girls in the class.

34. Does investment in education guarantee a bright future ?

I. Educated people are generally better off.

II. Educated people are better employed than uneducated.

(Assistant Grade, 1992)

35. How old is Tarun ? **(Bank P.O. 1998)**

I. Tarun could not appear for the final examination because he was short by two months for the stipulated 18 years of age in January this year.

II. He will become eligible for casting his vote, where minimum age limit is 18, in March this year.

36. How many doctors are practising in this town ? **(Bank P.O. 1997)**

I. There is one doctor per seven hundred residents.

II. There are 16 wards with each ward having as many doctors as the number of wards.

ANSWERS

1. (*a*)	**2.** (*d*)	**3.** (*d*)	**4.** (*d*)	**5.** (*d*)	**6.** (*d*)	**7.** (*d*)	**8.** (*a*)	**9.** (*a*)	**10.** (*d*)
11. (*e*)	**12.** (*d*)	**13.** (*b*)	**14.** (*c*)	**15.** (*e*)	**16.** (*e*)	**17.** (*a*)	**18.** (*d*)	**19.** (*d*)	**20.** (*e*)
21. (*d*)	**22.** (*d*)	**23.** (*d*)	**24.** (*e*)	**25.** (*d*)	**26.** (*b*)	**27.** (*e*)	**28.** (*d*)	**29.** (*c*)	**30.** (*d*)
31. (*d*)	**32.** (*d*)	**33.** (*e*)	**34.** (*e*)	**35.** (*c*)	**36.** (*b*)				

9. MISCELLANEOUS LOGICAL PUZZLES

Directions (Questions 1 to 3): In each of the following questions, examine the given statements carefully and find out which two of the statements cannot be true simultaneously, but can both be false.

1. 1. All animals are carnivorous.
   2. Some animals are not carnivorous.
   3. Animals are not carnivorous.
   4. Some animals are carnivorous. **(S.C.R.A. 1993)**
   (a) 1 and 2 (b) 2 and 3 (c) 1 and 3 (d) 3 and 4
2. 1. All children are inquisitive.
   2. Some children are inquisitive.
   3. No children are inquisitive.
   4. Some children are not inquisitive. **(I.A.S. 1995)**
   (a) 1 and 3 (b) 1 and 4 (c) 2 and 3 (d) 3 and 4
3. 1. Some nations wish for peaceful coexistence.
   2. All nations wish for peaceful coexistence.
   3. Some nations are not wishing for peaceful coexistence.
   4. No nations are wishing for peaceful coexistence.
   (*a*) 1 and 2 (*b*) 1 and 3 (*c*) 2 and 4 (*d*) 3 and 4
4. Examine the following statements regarding a set of balls
   1. All balls are black.
   2. All balls are white.
   3. Only some balls are black.
   4. No balls are black.: **(I.A.S. 1997)**

   Assuming that the balls can only be black or white, which of the two statements given above can both be true, but cannot both be false?
   (*a*) 1 and 3 (*b*) 1 and 4 (*c*) 2 and 3 (*d*) 2 and 4

Directions (Questions 5 to 9): In each of the following questions, there are several statements which are followed by a conclusion. Read the statements and the conclusion carefully and indicate your answer as:

(a) if the conclusion follows from the given statement;

(b) if the conclusion contradicts the given statement;

(c) if the conclusion neither follows from nor contradicts the given statement. **(M.B.A. 1997)**

5. No experienced engineer is incompetent.
Rohan is always blundering.
No competent person is always blundering.
Therefore, Rohan is not an engineer.

6. No one takes in 'The Times' unless he is well educated.
No hodgepogs can read.
Those who cannot read are not well educated.
Therefore all hodgepogs take in 'The Times'.

7. Boys are illogical.
Nobody is despised who can manage a dog.
Illogical persons are despised.
Therefore, boys cannot manage dogs.

8. Everyone who is sane can do logic.
No lunatics are fit to serve on the jury.
None of your sons can do logic.
Therefore, none of your sons are fit to serve on a jury

9. My plates are the only things I have that are made of glass.
I find all your presents very useful.
None of my plates are of the slightest use.
Therefore, your presents to me are made of glass.

10. Try this coaching class and you will not repent later. Which of the following, if true, would support and strengthen this statement? **(Bank P.O. 1997)**
(*i*) The class is centrally located.
(*ii*) Some teachers who teach in the class have good background.
(*iii*) All the teachers in the class teach the subject very well.
(*iv*) Students get personal attention and feedback.
(*v*) The class gifts a calculator to first 100 students.
(*a*) Only (*i*), (*ii*) and (*iii*) (*b*) Only (*i*) and (*ii*)
(*c*) Only (*i*), (*ii*) and (*v*) (*d*) Only (*iii*) and (*iv*)
(*e*) Only (*iv*) and (*v*)

11. Which of the following statements are facts?
1. Peacock is a beautiful bird.
2. There are seven stages of human life.
3. There are seven days in a week.
4. A thing of beauty is a joy for ever. **(Asstt. Grade, 1994)**
(*a*) 1 and 3 (*b*) 3 only (*c*) 3 and 4 (*d*) All four

Directions (Questions 12 to 16): The following four statements are about the composition of participants in five different get-togethers: **(M.B.A. 1997)**
(a) The number of male participants is the same as the number of female participants but is not quite so large as the number of child participants.
(b) The number of male participants is larger than both the number of female and that of the child participants.

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S. CHAND'S BOOKS FOR COMPETITIONS

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R.S. Aggarwal

Advanced Objective General Knowledge

S. Chand's Question Bank in General Studies

C.S. Bedi

S. Chand's General Studies for Central Civil Services

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For Railways, Banks, Insurance, Police, Forest,

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An Advanced Approach to Data Interpretation

Arithmetic (Subjective and Objective for Competitive Examinations)

अंक गणित: प्रतियोगी परीक्षाओं के लिए (वस्तुनिष्ठ प्रश्नों सहित)

प्रतियोगी परीक्षाओं के लिए वस्तुनिष्ठ अंक गणित (पूर्ण हल सहित)

संख्यात्मक अभिरुचि (प्रतियोगी परीक्षाओं के लिए)

REFERENCE BOOKS

Vishnoo Bhagwan and Vidya Bhusan

Indian Administration

A Textbook of Public Administration

LANGUAGE

T. Saran

Precis Writing and Drafting

R.S. Aggarwal & Monika Aggarwal

Objective General English

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I.I.T. Chemistry(For All Engineering Examinations)

J.N. Gurtu, R. Kapur, V.B. Rana & A. Kapur

Numerical Chemistry (For Entrance Examinations of I.I.T. (JEE), Roorkee, MLNREC, Aligarh, AFMC, AIIMS, BHU & allother Engineering & Medical Competitive Examinations, U.P. Board, CBSE, ISC

1. SERIES

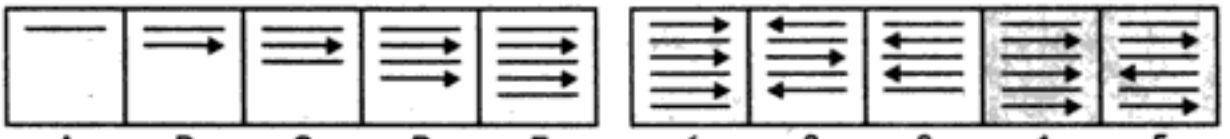
This chapter deals with the problems based upon continuation of figures. There are various types of problems on series, but the theme in each of these is the same. There is a sequence of figures depicting a change step by step. Either one of these figures is out of order and has to be omitted or a figure has to be selected from a separate set of figures, which would continue the sequence.

TYPE 1 : FIVE FIGURE SERIES

This type of problems on series consist of five figures numbered A, B, C, D, and E forming the problem Set, followed by five other figures numbered 1, 2, 3, 4 and 5 forming the Answer Set. The five consecutive problem figures form a definite sequence and it is required to choose one of the figures from the Answer Set which will continue the same sequence.

In each of the following examples find the figure from the Answer Set (i.e. figs. 1, 2, 3, 4 and 5) which will continue the series given in the Problem Set (i.e. figs. A, B, C, D, and E).

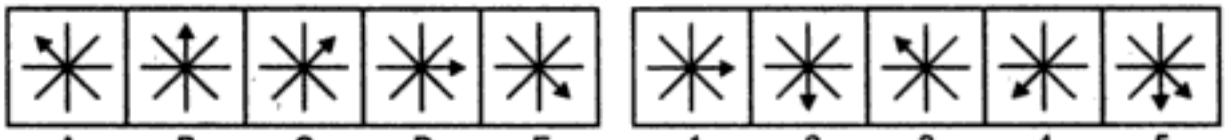
Example 1 : PROBLEM FIGURES ANSWER FIGURES



A B C D E 1 2 3 4 5

Solution : Clearly, arrows and straight lines are added alternately to get subsequent figures. Also all the arrows point towards the right. Hence, fig. (4) is the answer.

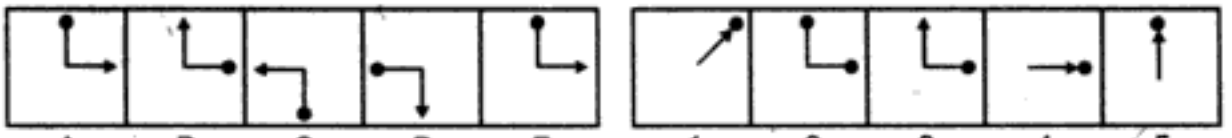
Example 2 : PROBLEM FIGURES ANSWER FIGURES



A B C D E 1 2 3 4 5

Solution : Here, the arrow rotates one step clockwise in every subsequent figure.
∴ The answer is fig. (2).

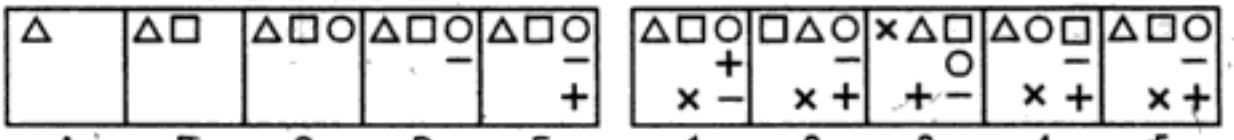
Example 3 : PROBLEM FIGURES ANSWER FIGURES



A B C D E 1 2 3 4 5

Solution : In this case, the pin rotates 90° clockwise and the arrow rotates 90° anticlockwise in each step.
Hence, the answer is fig. (3).

Example 4 : PROBLEM FIGURES ANSWER FIGURES



A B C D E 1 2 3 4 5

Solution : New symbols are added in each step in a set order.
Hence, the answer is fig. (5).

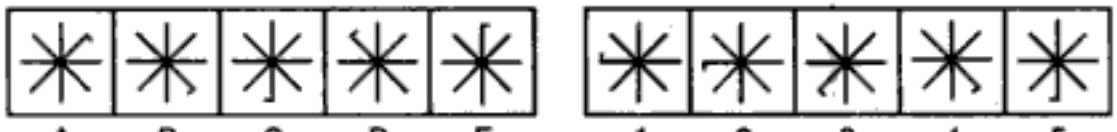
EXERCISE 1A

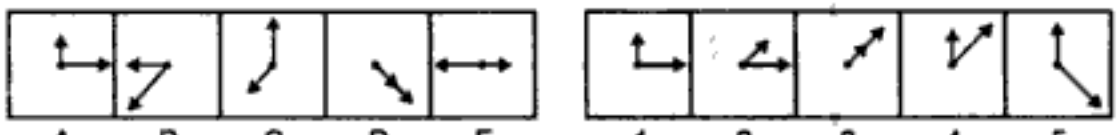
Directions : ***Each of the following questions consists of five figures marked A, B, C, D and E called the Problem Figures followed by five other figures marked 1, 2, 3, 4 and 5 called the Answer Figures. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.***

Problem Figures **Answer Figures**

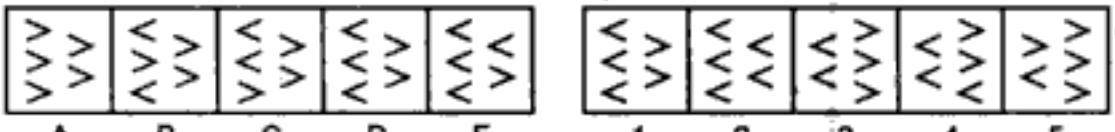
1. 
A B C D E 1 2 3 4 5

(B.S.R.B. 1992)

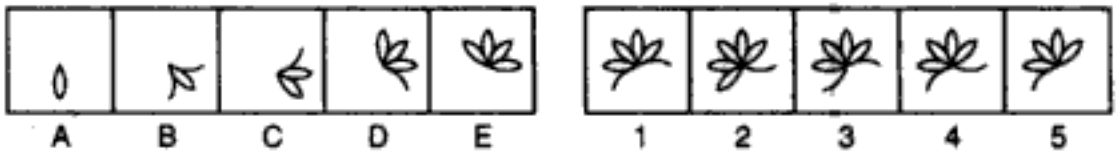
2. 
A B C D E 1 2 3 4 5

3. 
A B C D E 1 2 3 4 5

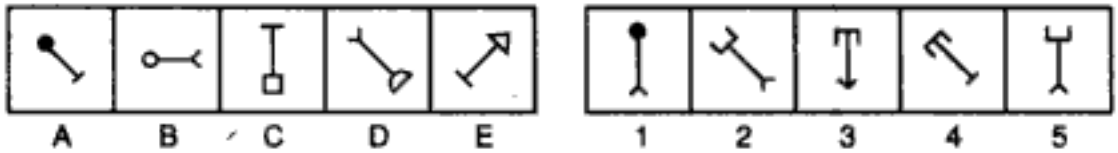
(B.S.R.B. 1994)

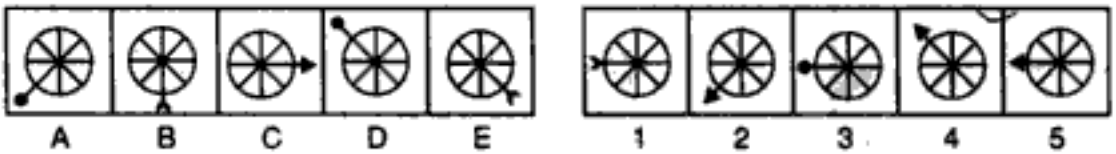
4. 
A B C D E 1 2 3 4 5

5. 
A B C D E 1 2 3 4 5

6. 
A B C D E 1 2 3 4 5

(S.B.I. P.O. 1991)

7. 
A B C D E 1 2 3 4 5

8. 
A B C D E 1 2 3 4 5

9. 
A B C D E 1 2 3 4 5

(NABARD, 1991)

Problem Figures **Answer Figures**

10.

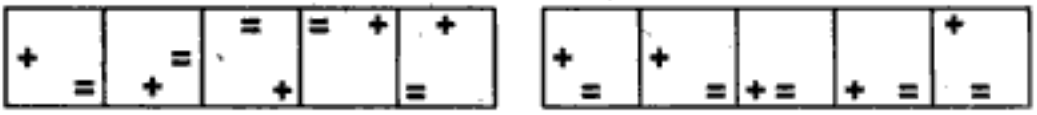
A B C D E 1 2 3 4 5

11.

A B C D E 1 2 3 4 5

(B.S.R.B. 1992)

12.



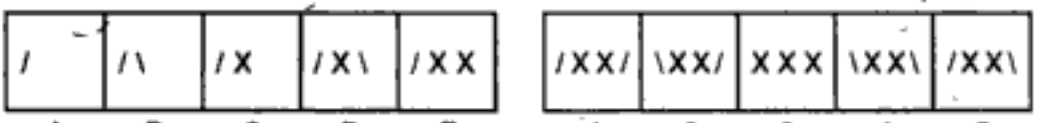
A B C D E 1 2 3 4 5

13.

A B C D E 1 2 3 4 5

(Bank P.O. 1993)

14.



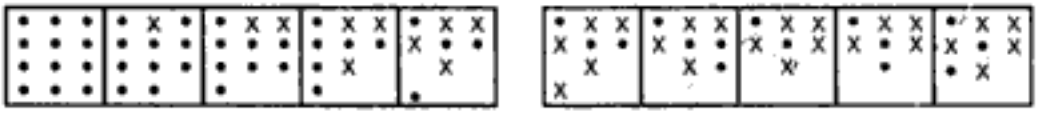
A B C D E 1 2 3 4 5

15.

A B C D E 1 2 3 4 5

(S.B.I. P.O. 1992)

16.



A B C D E 1 2 3 4 5

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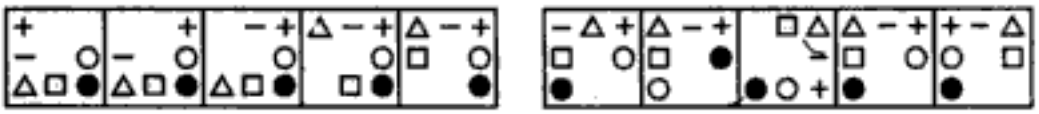

A B C D E 1 2 3 4 5

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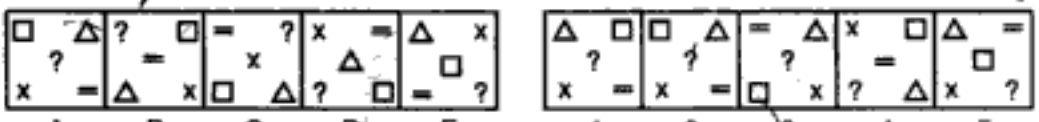

A B C D E 1 2 3 4 5

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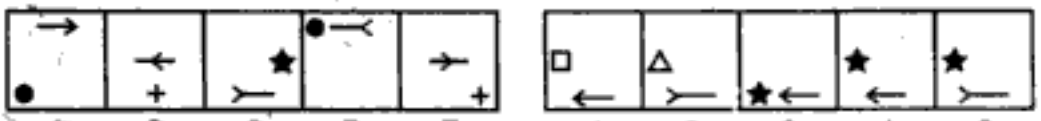
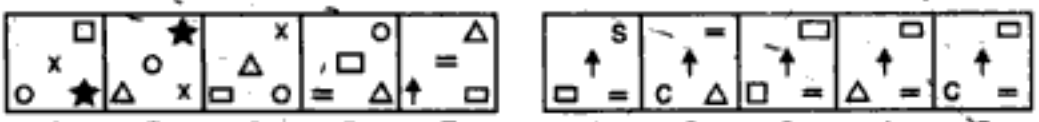


A B C D E 1 2 3 4 5

(Bank P.O. 1994)

20.



A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

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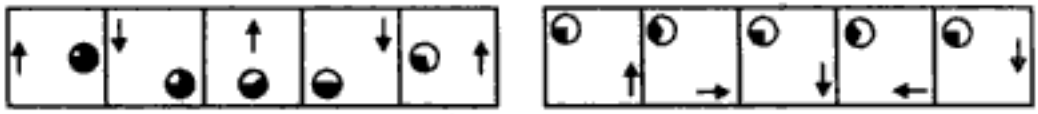

A B C D E 1 2 3 4 5

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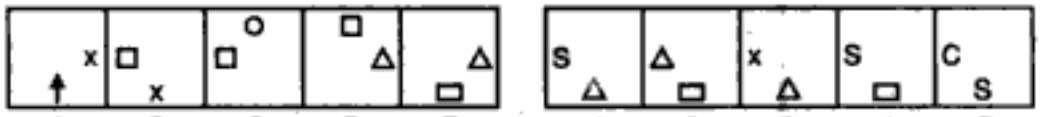

A B C D E 1 2 3 4 5

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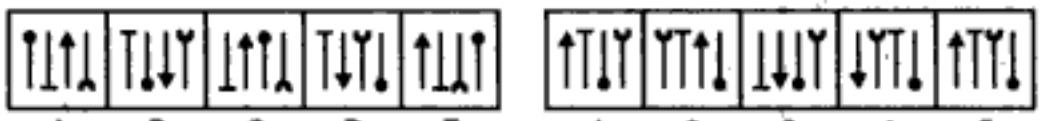


A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

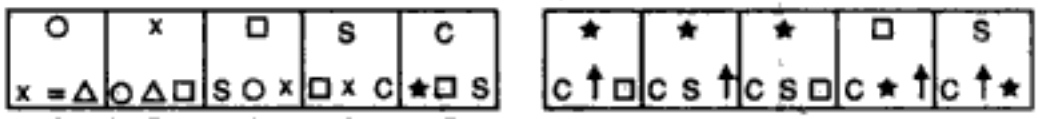
24.

A B C D E 1 2 3 4 5

25.

A B C D E 1 2 3 4 5

26.



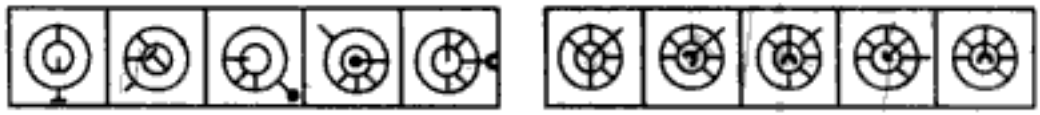
A B C D E 1 2 3 4 5

(Bank P.O. 1993)

27.

A B C D E 1 2 3 4 5

28.



A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

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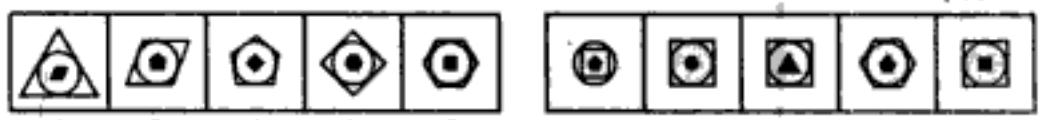

A B C D E 1 2 3 4 5

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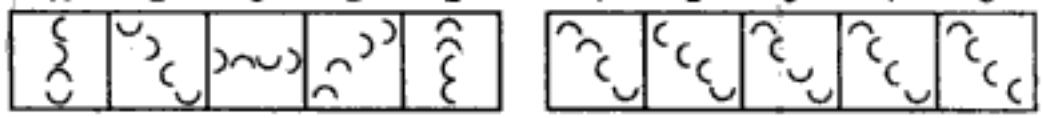


A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

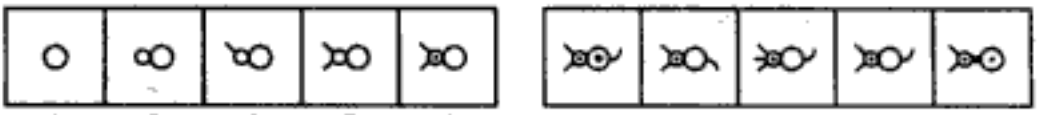
31.

A B C D E 1 2 3 4 5

(NABARD, 1991)

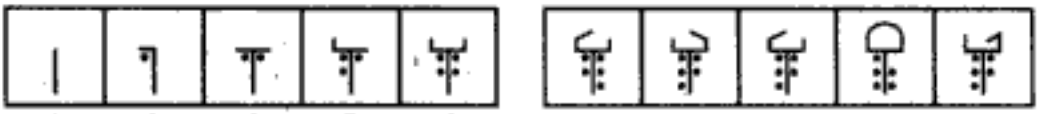
Problem Figures **Answer Figures**

32.



A B C D E 1 2 3 4 5

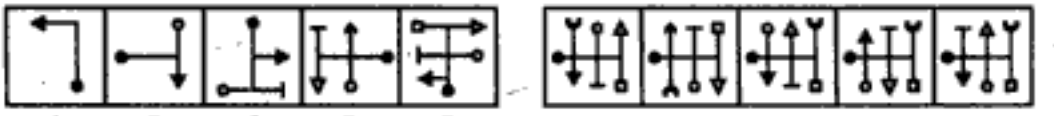
33.



A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

34.



A B C D E 1 2 3 4 5

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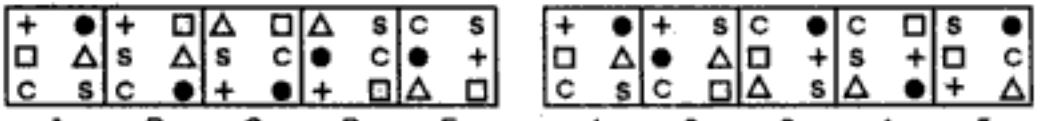


A B C D E 1 2 3 4 5

(Bank P.O. 1993)

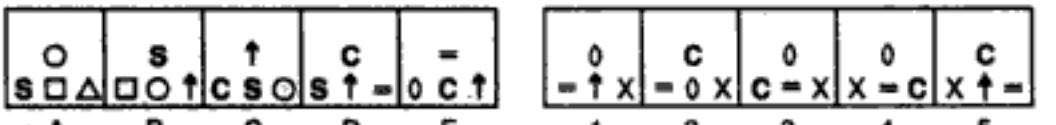
36.

A B C D E 1 2 3 4 5

37.

A B C D E 1 2 3 4 5

38.



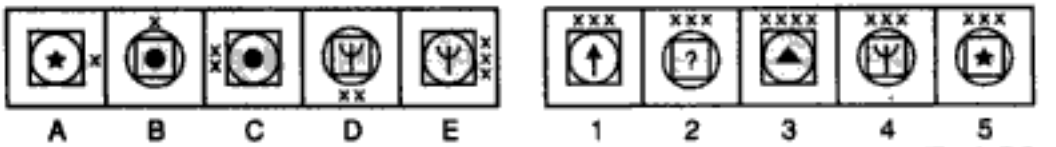
A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

39.

A B C D E 1 2 3 4 5

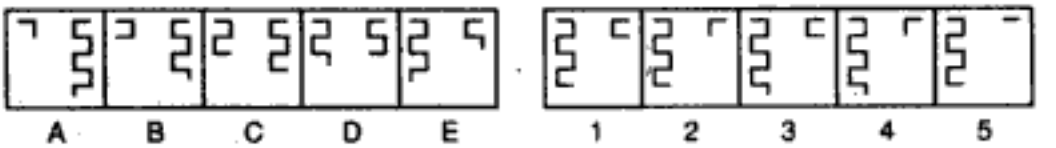
40.



A B C D E 1 2 3 4 5

(Bank P.O. 1992)

41.



A B C D E 1 2 3 4 5

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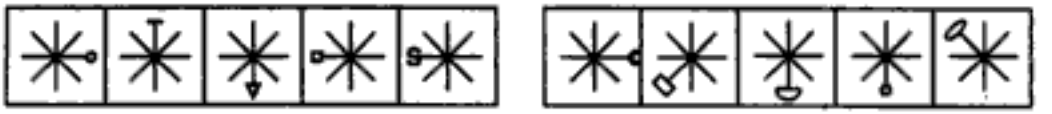
Problem Figures **Answer Figures**

53.



A B C D E 1 2 3 4 5

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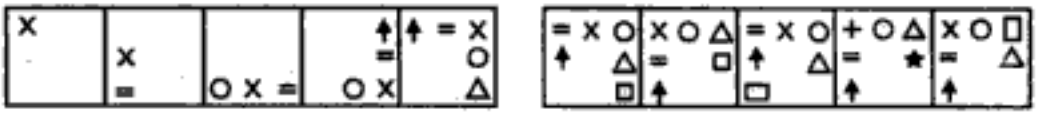


A B C D E 1 2 3 4 5

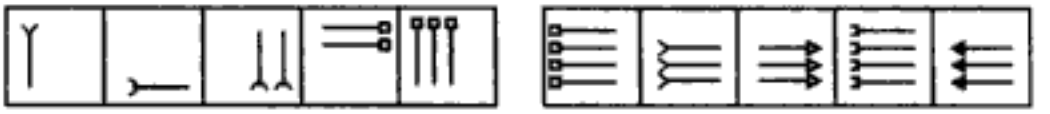
(S.B.I.P.O. 1991)

55.

A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

56.



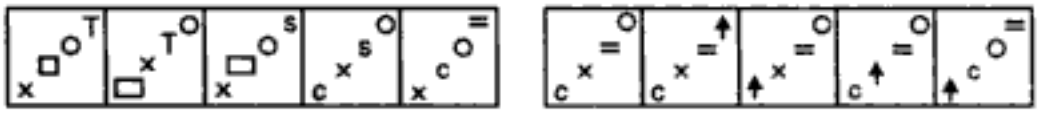
A B C D E 1 2 3 4 5

57.

A B C D E 1 2 3 4 5

(Bank P.O. 1994)

58.



A B C D E 1 2 3 4 5

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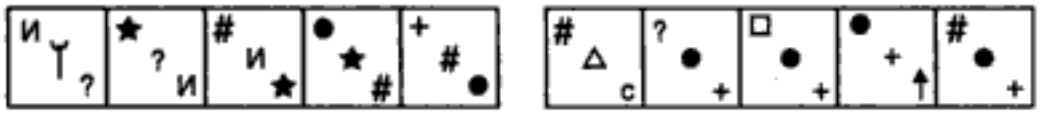

A B C D E 1 2 3 4 5

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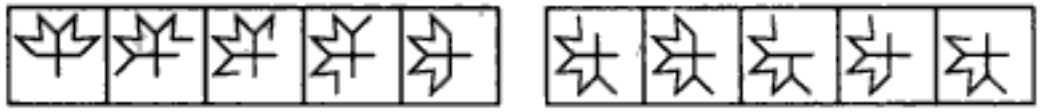
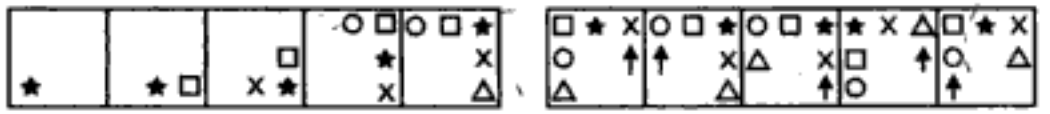


A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

61.



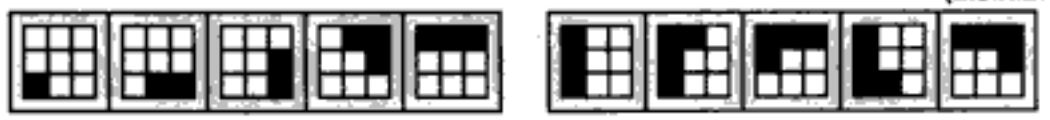
A B C D E 1 2 3 4 5

62.

A B C D E 1 2 3 4 5

(B.S.R.B. 1992)

63.



A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

64.

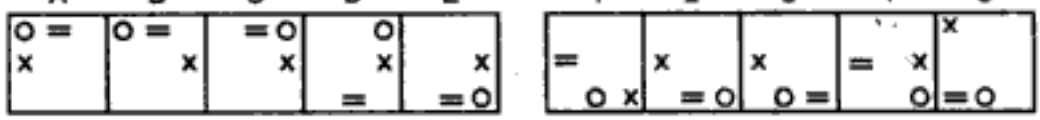
A B C D E 1 2 3 4 5

(Bank P.O. 1993)

65.

A B C D E 1 2 3 4 5

66.



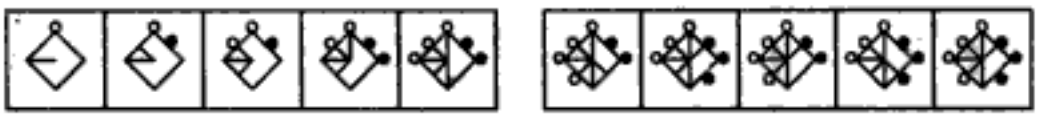
A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

67.

A B C D E 1 2 3 4 5

68.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

69.

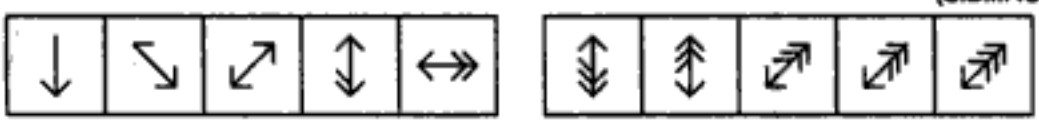
A B C D E 1 2 3 4 5

70.

A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

71.



A B C D E 1 2 3 4 5

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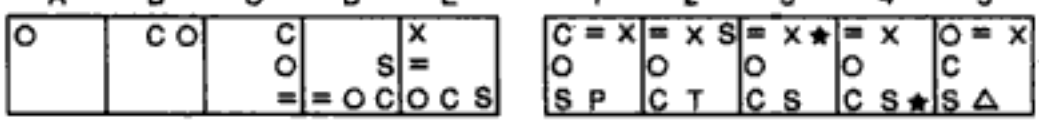


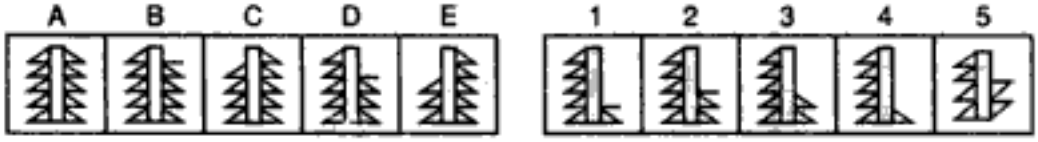
A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

73.

A B C D E 1 2 3 4 5

74.



A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

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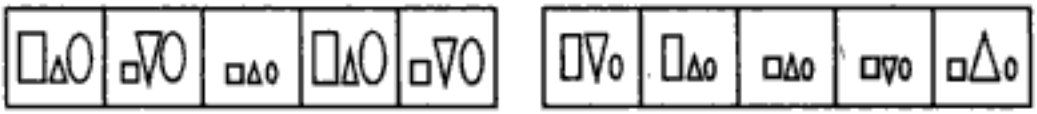
Problem Figures **Answer Figures**

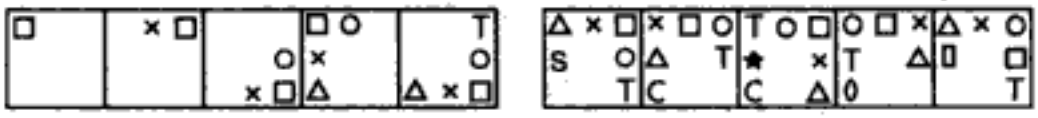
86.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

87.



A B C D E 1 2 3 4 5

(Bank P.O. 1996)

88.

A B C D E 1 2 3 4 5

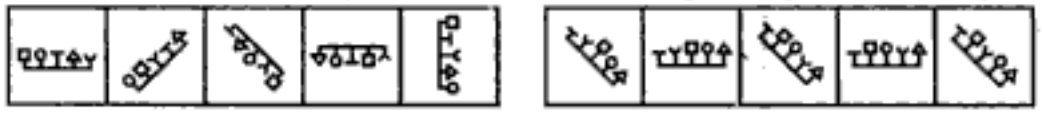
89.

A B C D E 1 2 3 4 5

90.

A B C D E 1 2 3 4 5

91.



A B C D E 1 2 3 4 5

(Bank P.O. 1994)

92.

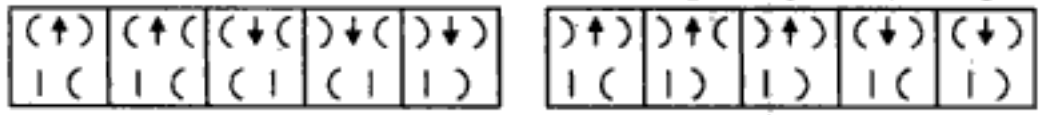
A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

93.

A B C D E 1 2 3 4 5

94.



A B C D E 1 2 3 4 5

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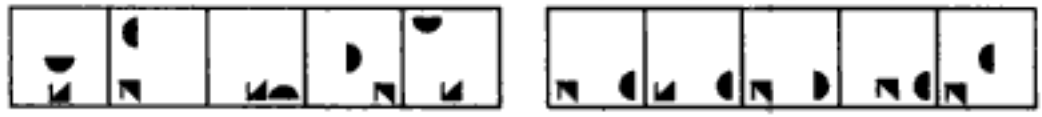
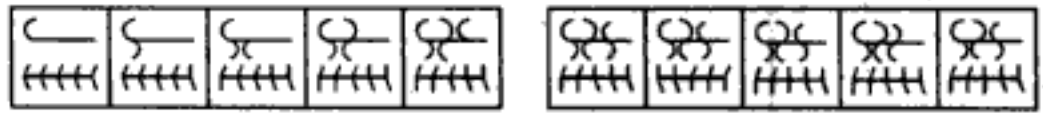


A B C D E 1 2 3 4 5

(Bank P.O. 1992)

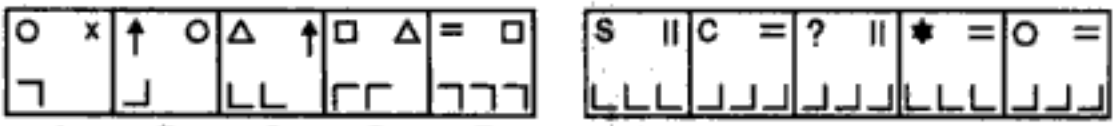
96.



A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

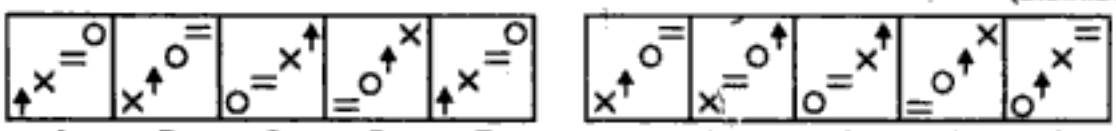
97.



A B C D E 1 2 3 4 5

(B.S.R.B. 1992)

98.



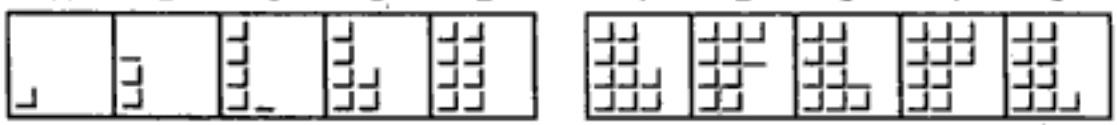
A B C D E 1 2 3 4 5

(S.B.I.P.O. 1991)

99.

A B C D E 1 2 3 4 5

100.



A B C D E 1 2 3 4 5

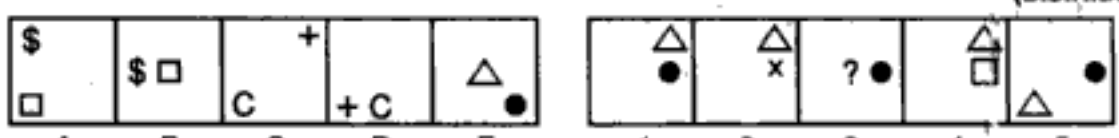
(B.S.R.B. 1995)

101.

A B C D E 1 2 3 4 5

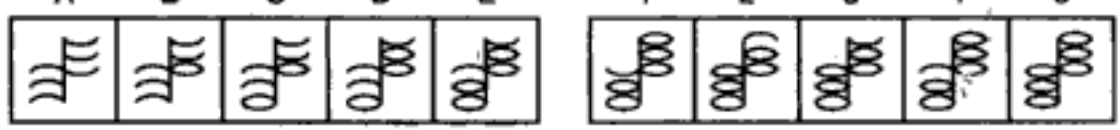
(B.S.R.B. 1994)

102.



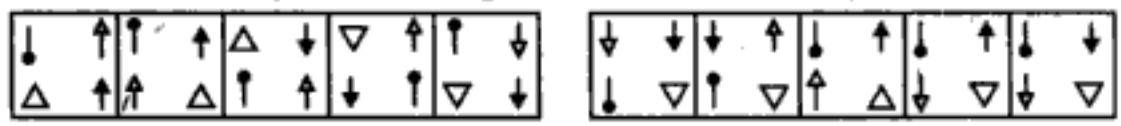
A B C D E 1 2 3 4 5

103.



A B C D E 1 2 3 4 5

104.



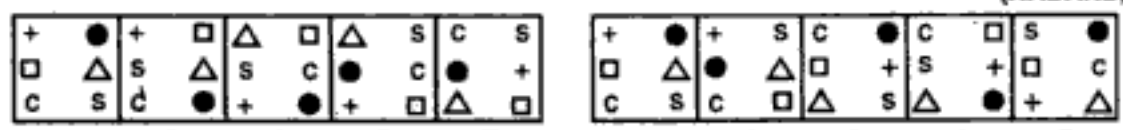
A B C D E 1 2 3 4 5

105.

A B C D E 1 2 3 4 5

(NABARD, 1991)

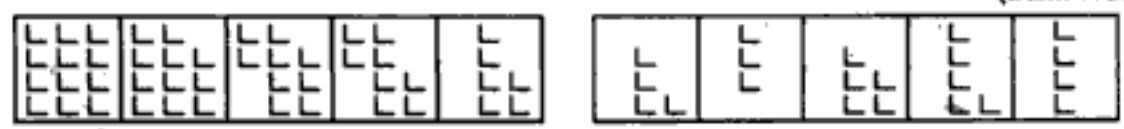
106.



A B C D E 1 2 3 4 5

(Bank P.O. 1993)

107.



A B C D E 1 2 3 4 5

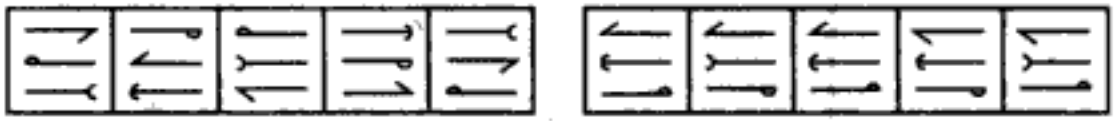
Problem Figures **Answer Figures**

108.

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

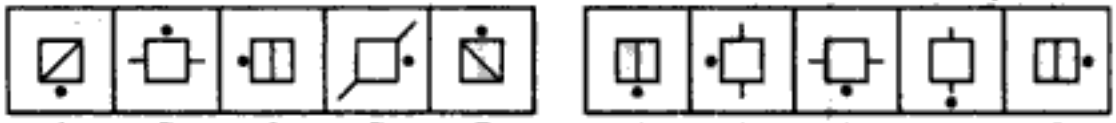
109.



A B C D E 1 2 3 4 5

(Bank P.O. 1996)

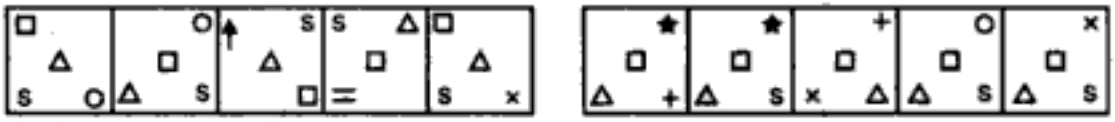
110.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

111.



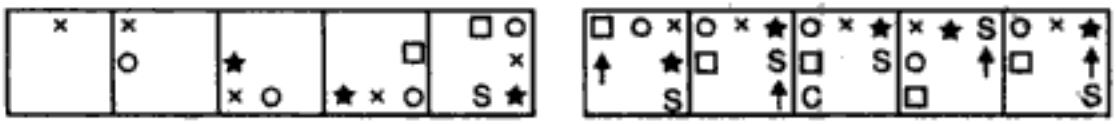
A B C D E 1 2 3 4 5

(Bank P.O. 1993)

112.

A B C D E 1 2 3 4 5

113.



A B C D E 1 2 3 4 5

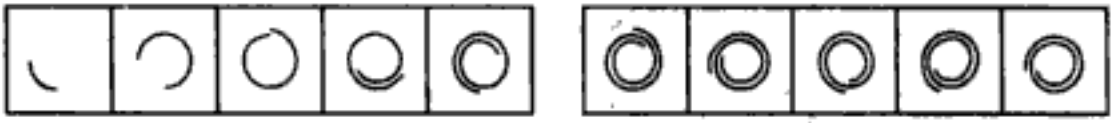
(B.S.R.B. 1994)

114.

A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

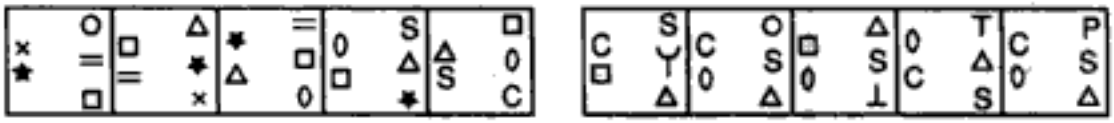
115.



A B C D E 1 2 3 4 5

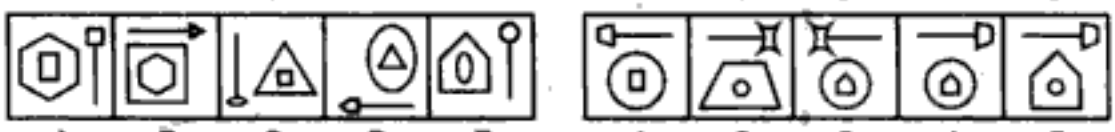
(B.S.R.B. 1994)

116.



A B C D E 1 2 3 4 5

117.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

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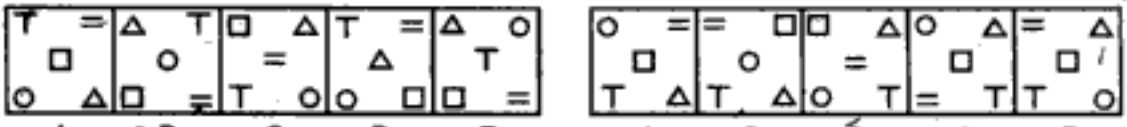
Problem Figures **Answer Figures**

183.

A B C D E 1 2 3 4 5

(Bank P.O. 1992)

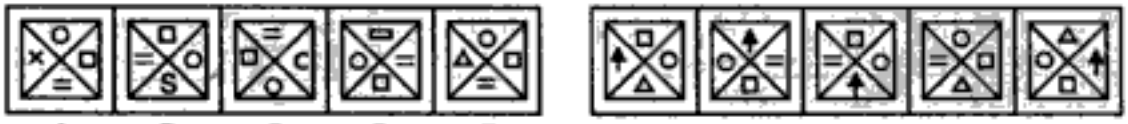
184.



A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

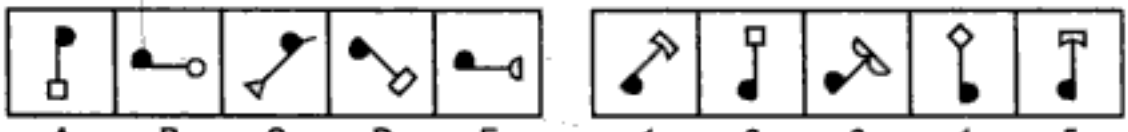
185.



A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

186.



A B C D E 1 2 3 4 5

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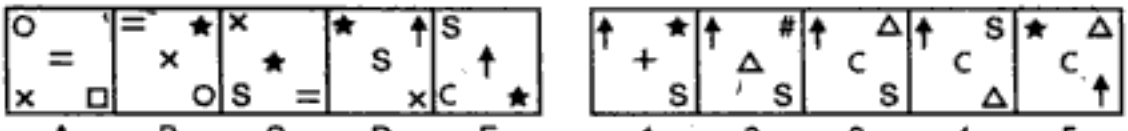


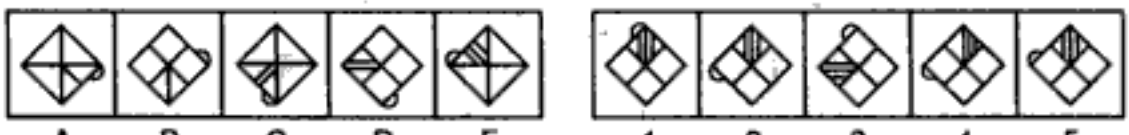
A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

188.

A B C D E 1 2 3 4 5

189.



A B C D E 1 2 3 4 5

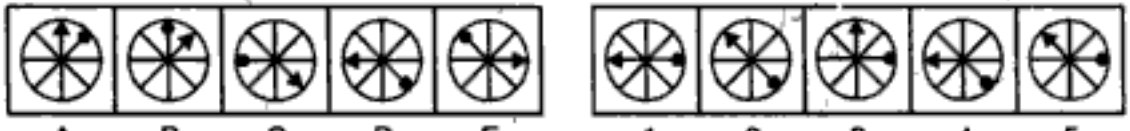
(B.S.R.B. 1995)

190.

A B C D E 1 2 3 4 5

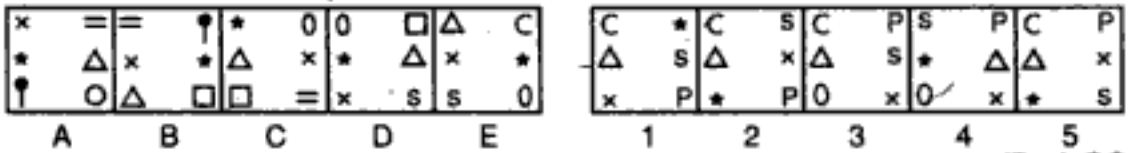
(Bank P.O. 1993)

191.



A B C D E 1 2 3 4 5

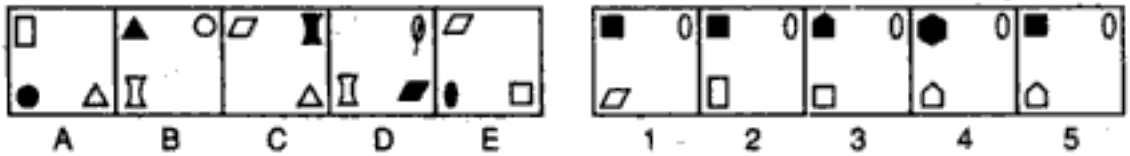
192.



A B C D E 1 2 3 4 5

(Bank P.O. 1994)

193.



A B C D E 1 2 3 4 5

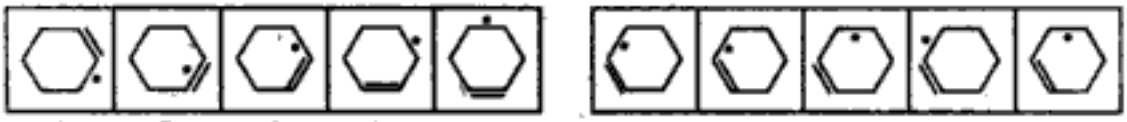
Problem Figures **Answer Figures**

194.

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

195.



A B C D E 1 2 3 4 5

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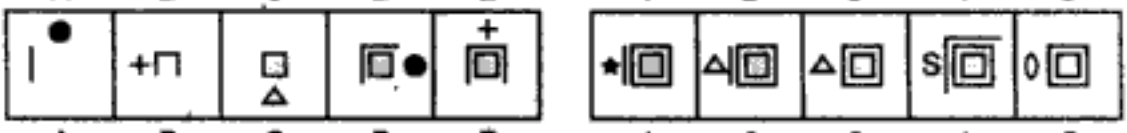


A B C D E 1 2 3 4 5

(Bank P.O. 1994)

197.

A B C D E 1 2 3 4 5

198.

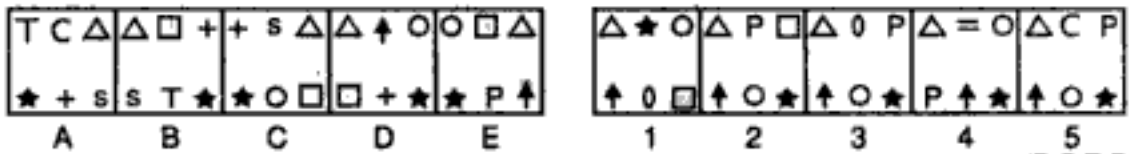
A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

199.

A B C D E 1 2 3 4 5

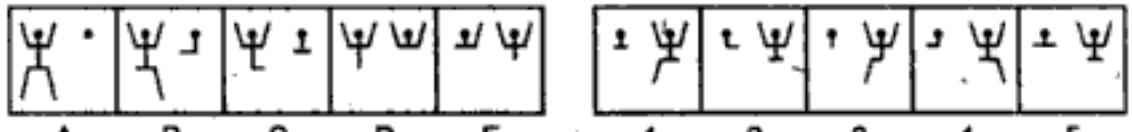
200.



A B C D E 1 2 3 4 5

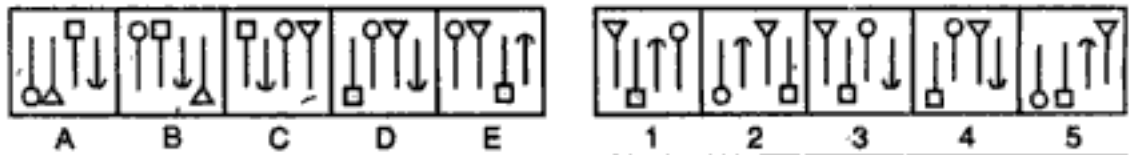
(B.S.R.B. 1995)

201.



A B C D E 1 2 3 4 5

202.



A B C D E 1 2 3 4 5

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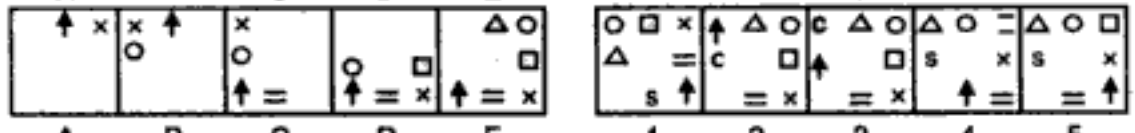
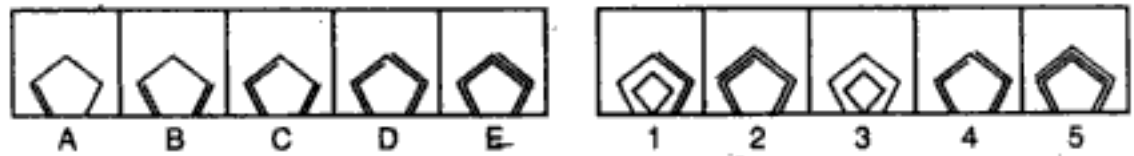


A B C D E 1 2 3 4 5

(B.S.R.B. 1992)

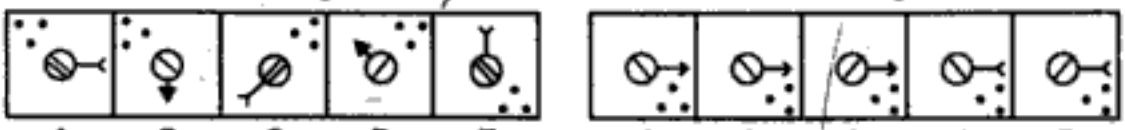
204.



A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

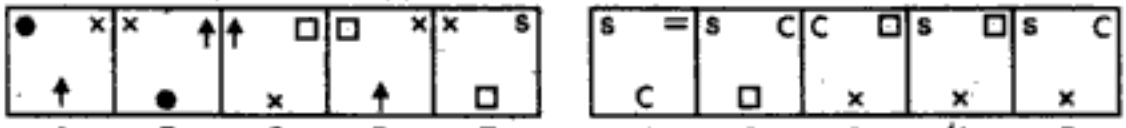
205.



A B C D E 1 2 3 4 5

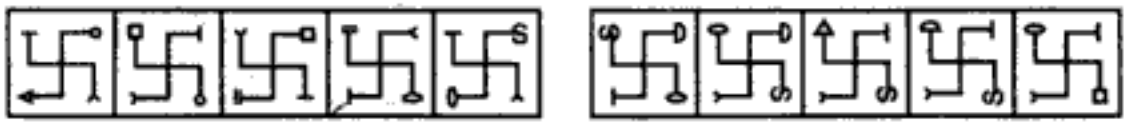
(B.S.R.B. 1994)

206.



A B C D E 1 2 3 4 5

207.



A B C D E 1 2 3 4 5

208.

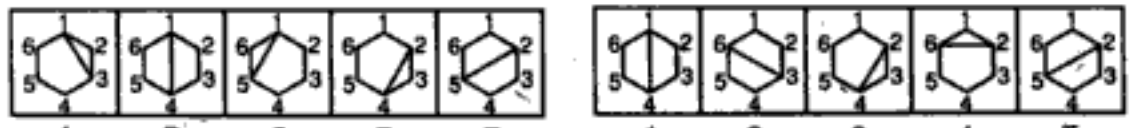
A B C D E 1 2 3 4 5

(Bank P.O. 1992)

209.

A B C D E 1 2 3 4 5

210.



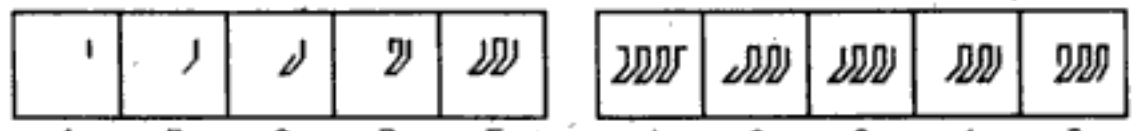
A B C D E 1 2 3 4 5

211.

A B C D E 1 2 3 4 5

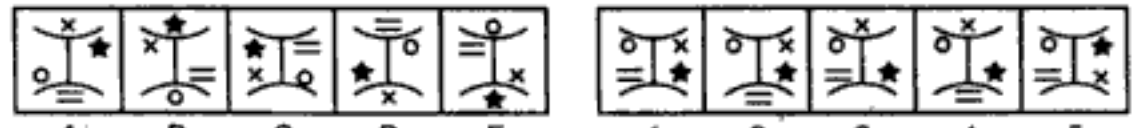
(NABARD, 1991)

212.



A B C D E 1 2 3 4 5

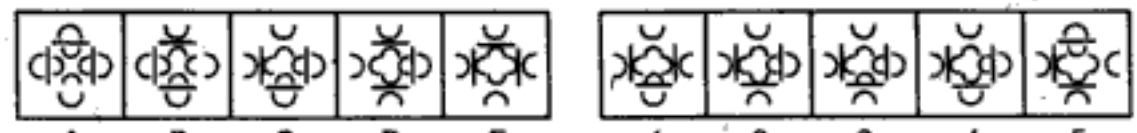
213.



A B C D E 1 2 3 4 5

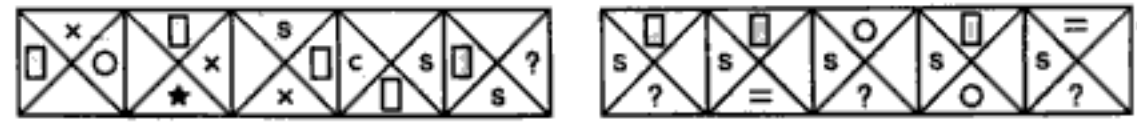
(B.S.R.B. 1995)

214.



A B C D E 1 2 3 4 5

215.



A B C D E 1 2 3 4 5

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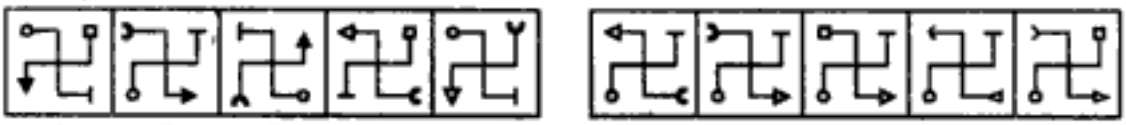
Problem Figures **Answer Figures**

238.



A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

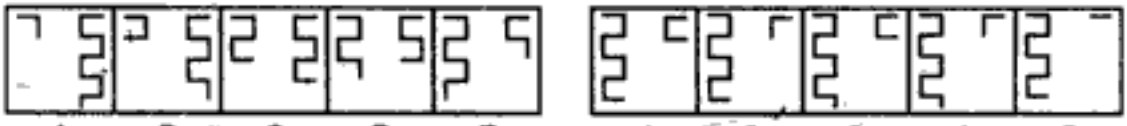
239.

A B D E 1 2 3 4 5

240.

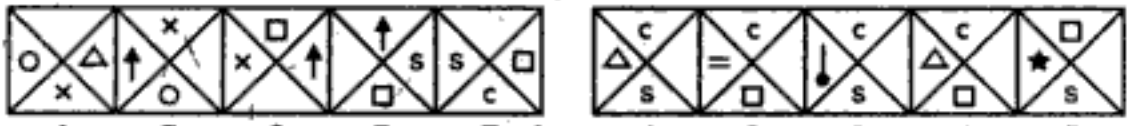
A B C D E 1 2 3 4 5

241.



A B C D E 1 2 3 4 5

242.



A B C D E 1 2 3 4 5

243.

A B C D E 1 2 3 4 5

244.

A B C D E 1 2 3 4 5

(S.B.I. P.O. 1992)

245.

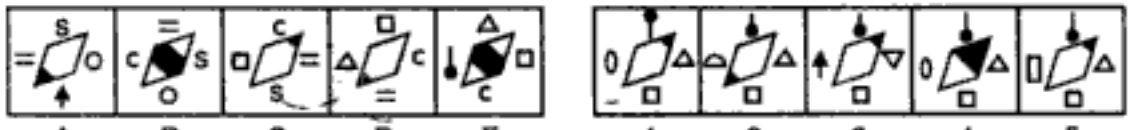
A B C D E 1 2 3 4 5

246.

A B C D E 1 2 3 4 5

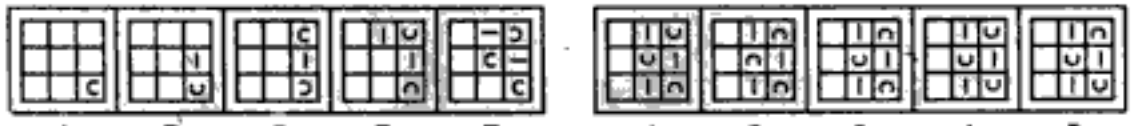
(Bank P.O. 1993)

247.



A B C D E 1 2 3 4 5

248.



A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

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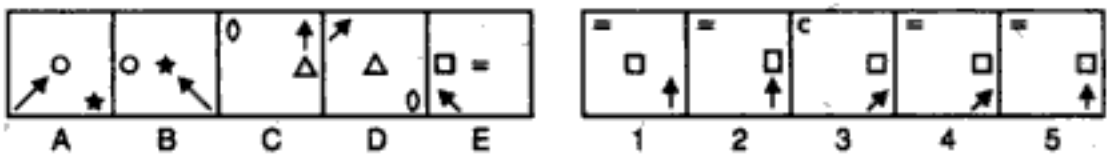
Problem Figures **Answer Figures**

282.



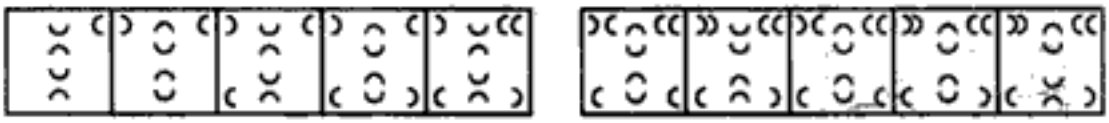
A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

283.

A B C D E 1 2 3 4 5

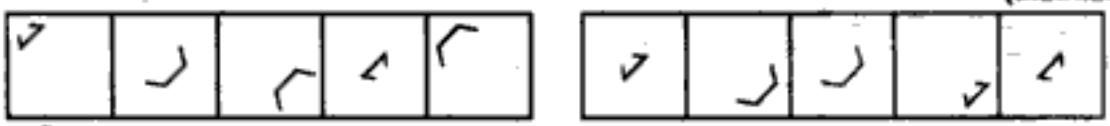
284.



A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

285.



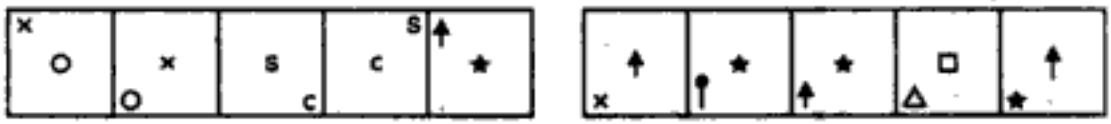
A B C D E 1 2 3 4 5

286.

A B C D E 1 2 3 4 5

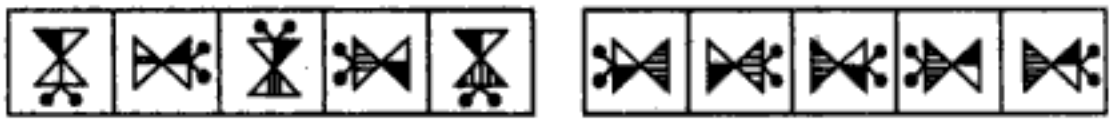
(NABARD, 1991)

287.



A B C D E 1 2 3 4 5

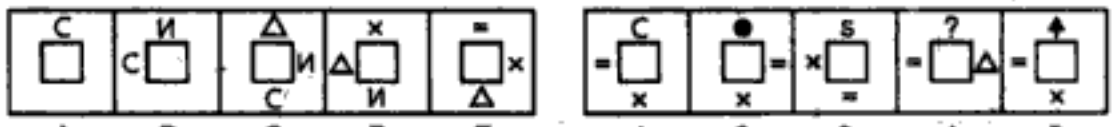
288.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

289.



A B C D E 1 2 3 4 5

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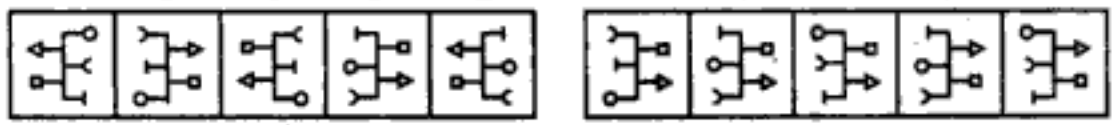


A B C D E 1 2 3 4 5

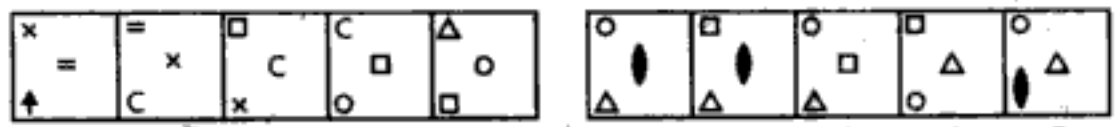
(B.S.R.B. 1994)

291.

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

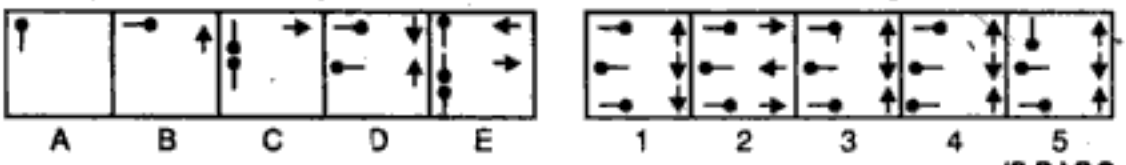
292.



A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

293.



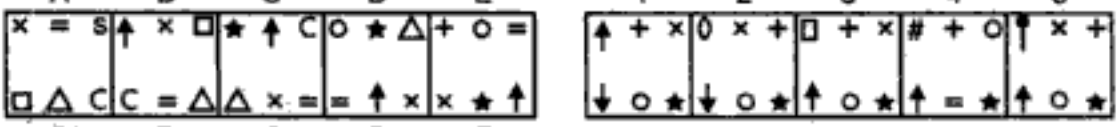
A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

294.

A B C D E 1 2 3 4 5

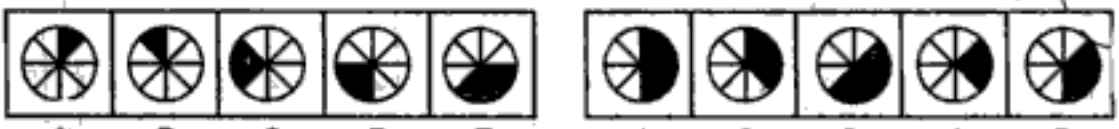
295.



A B C D E 1 2 3 4 5

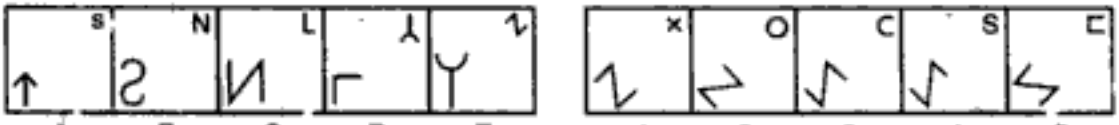
(B.S.R.B. 1994)

296.



A B C D E 1 2 3 4 5

297.



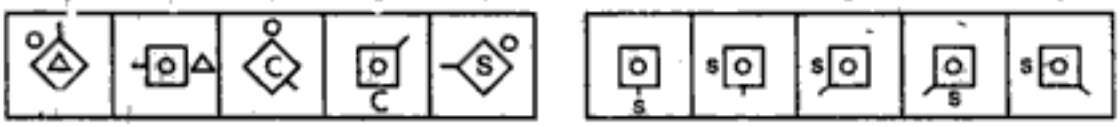
A B C D E 1 2 3 4 5

(Bank P.O. 1993)

298.

A B C D E 1 2 3 4 5

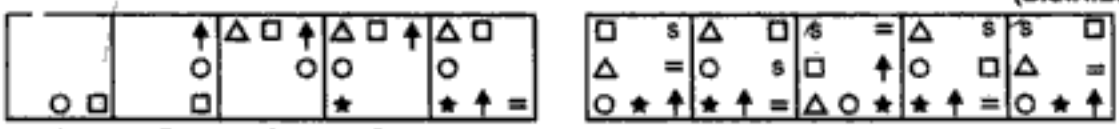
299.



A B C D E 1 2 3 4 5

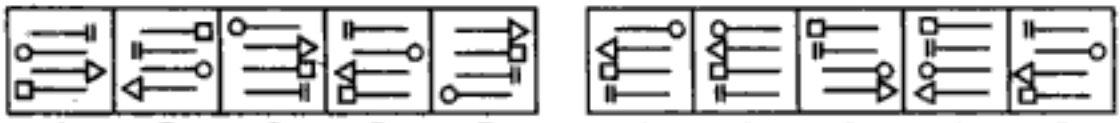
(B.S.R.B. 1996)

300.



A B C D E 1 2 3 4 5

301.



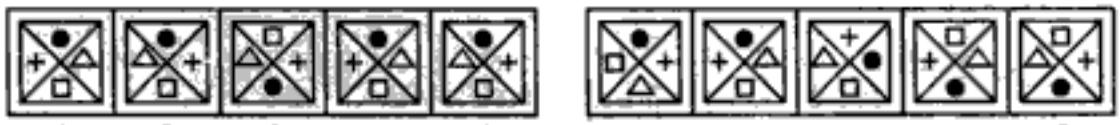
A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

302.

A B C D E 1 2 3 4 5

303.

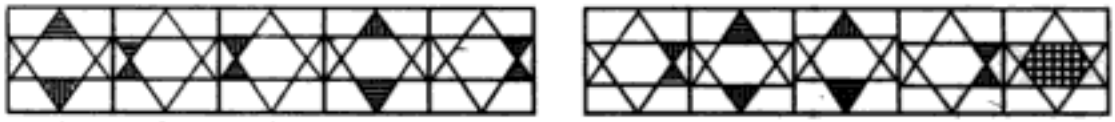


A B C D E 1 2 3 4 5

(NABARD, 1991)

Problem Figures **Answer Figures**

304.



A B C D E 1 2 3 4 5

305.

A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

306.

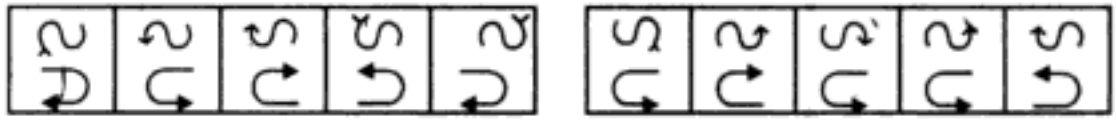
A B C D E 1 2 3 4 5

307.

A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

308.



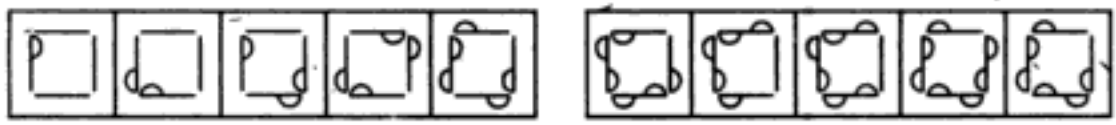
A B C D E 1 2 3 4 5

309.

A B C D E 1 2 3 4 5

(Bank P.O. 1994)

310.



A B C D E 1 2 3 4 5

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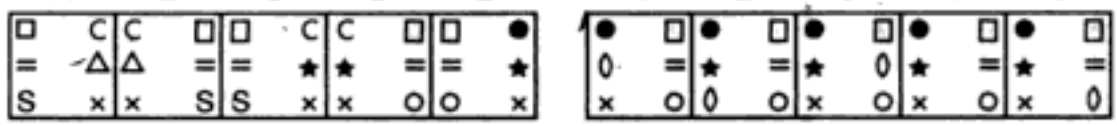
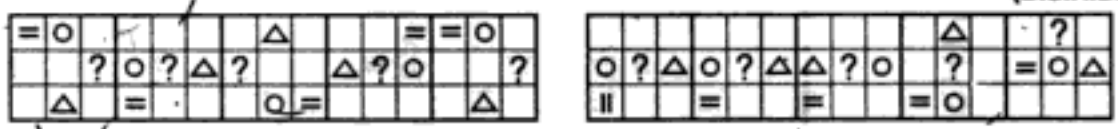


A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

312.



A B C D E 1 2 3 4 5

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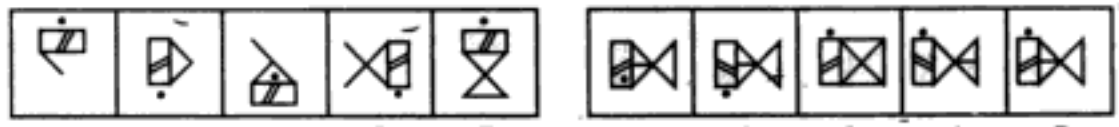


A B C D E 1 2 3 4 5

(Bank P.O. 1993)

314.

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

Problem Figures **Answer Figures**

315.

A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

316.

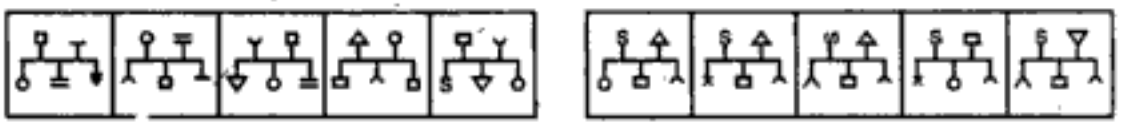
A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

317.

A B C D E 1 2 3 4 5

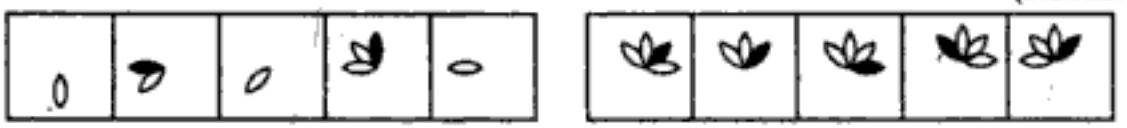
318.



A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

319.



A B C D E 1 2 3 4 5

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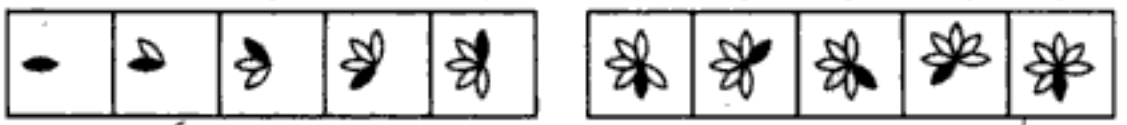
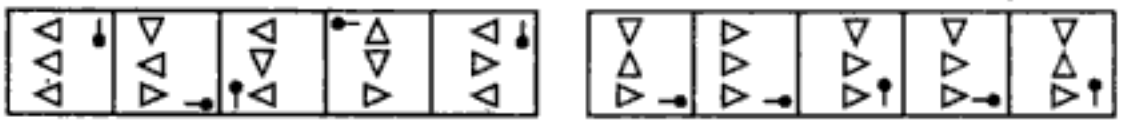


A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

321.



A B C D E 1 2 3 4 5

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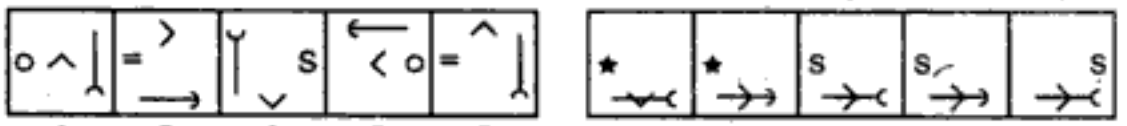
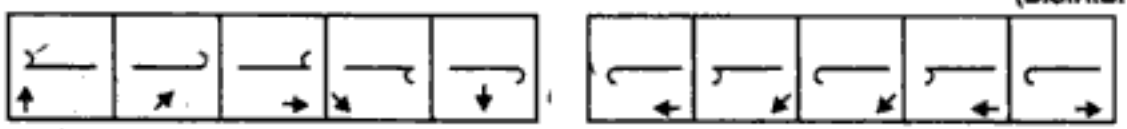


A B C D E 1 2 3 4 5

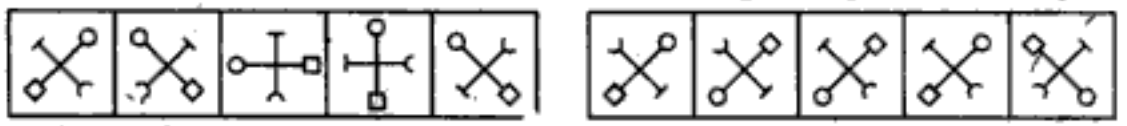
(B.S.R.B. 1996)

323.



A B C D E 1 2 3 4 5

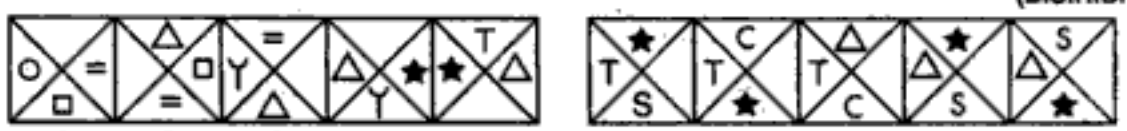
324.



A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

325.



A B C D E 1 2 3 4 5

(Bank P.O. 1996)

Problem Figures **Answer Figures**

326.

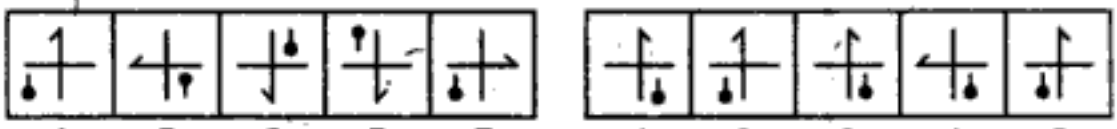
A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

327.

A B C D E 1 2 3 4 5

328.



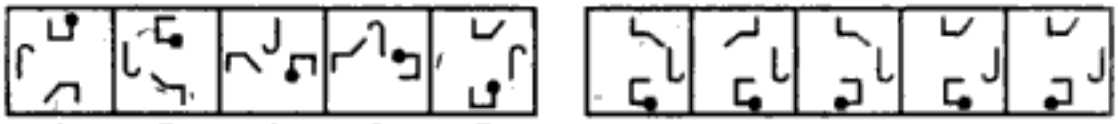
A B C D E 1 2 3 4 5

(NABARD, 1991)

329.

A B C D E 1 2 3 4 5

330.



A B C D E 1 2 3 4 5

(S.B.I.P.O. 1993)

331.

A B C D E 1 2 3 4 5

332.

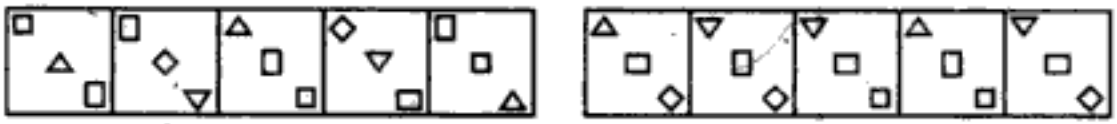
A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

333.

A B C D E 1 2 3 4 5

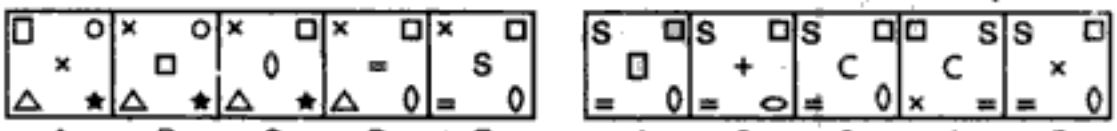
334.



A B C D E 1 2 3 4 5

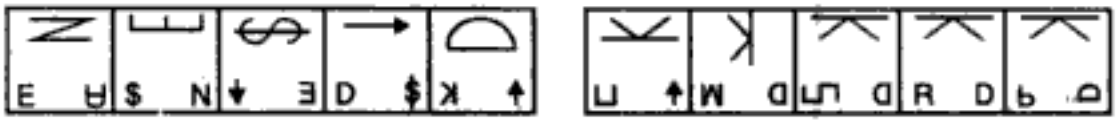
(Bank P.O. 1993)

335.



A B C D E 1 2 3 4 5

336.

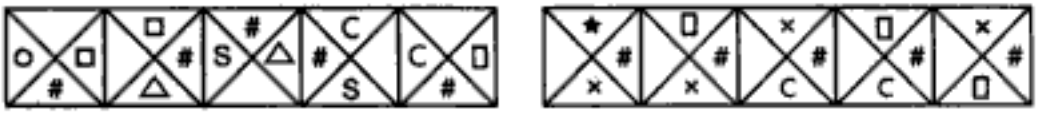


A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

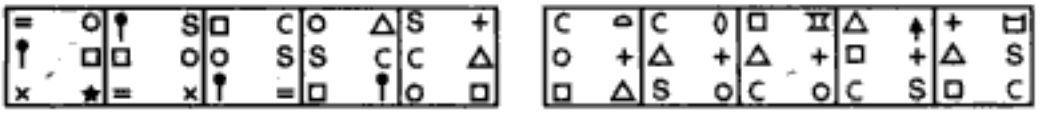
Problem Figures **Answer Figures**

337.



A B C D E 1 2 3 4 5

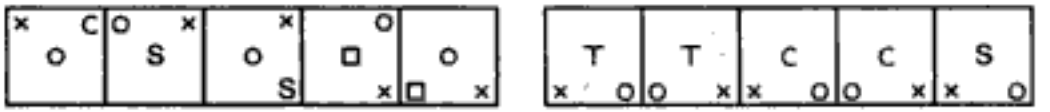
338.



A B C D E 1 2 3 4 5

(Bank P.O. 1994)

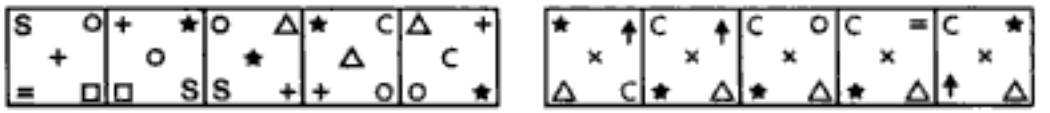
339.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

340.



A B C D E 1 2 3 4 5

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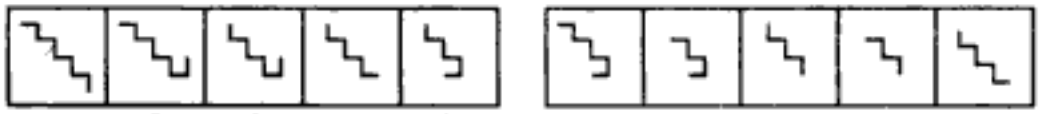
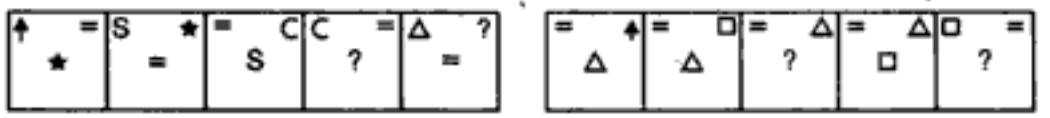


A B C D E 1 2 3 4 5

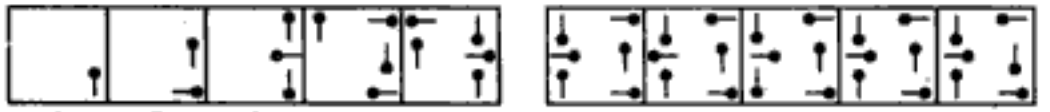
(Bank P.O. 1993)

342.



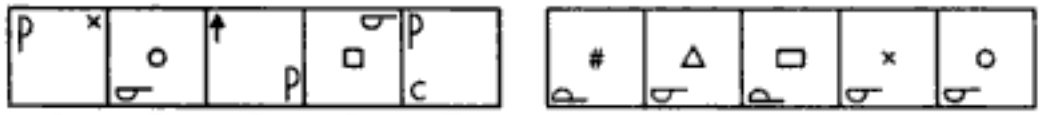
A B C D E 1 2 3 4 5

343.



A B C D E 1 2 3 4 5

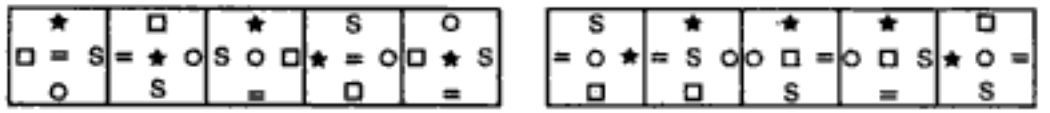
344.



A B C D E 1 2 3 4 5

(S.B.I.P.O. 1992)

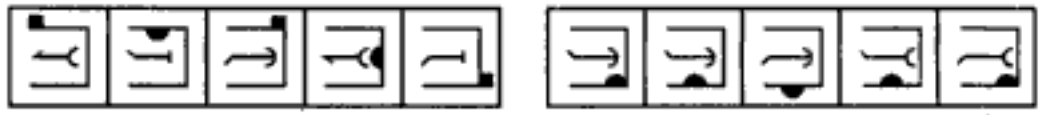
345.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

346.



A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

347.

A B C D E 1 2 3 4 5

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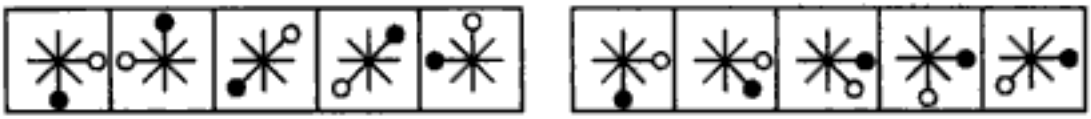
Problem Figures **Answer Figures**

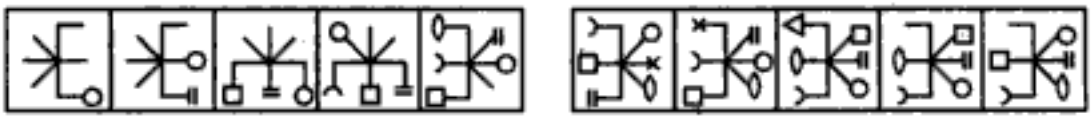
359.



A B C D E 1 2 3 4 5

(Bank P.O. 1993)

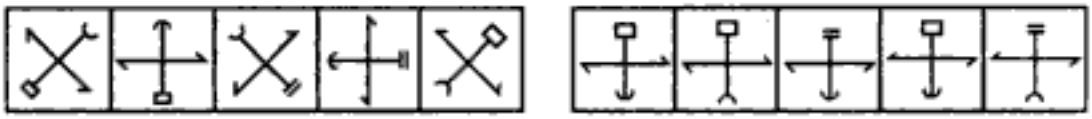
360.



A B C D E 1 2 3 4 5

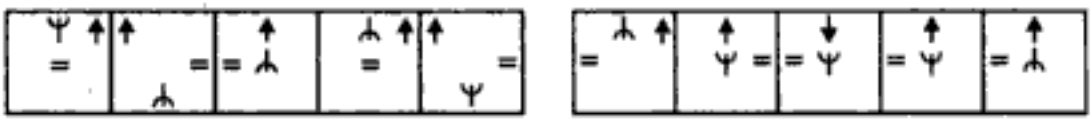
(B.S.R.B. 1996)

361.



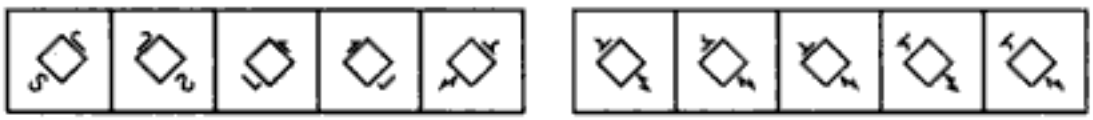
A B C D E 1 2 3 4 5

362.



A B C D E 1 2 3 4 5

363.



A B C D E 1 2 3 4 5

(Bank P.O. 1996)

364.

A B C D E 1 2 3 4 5

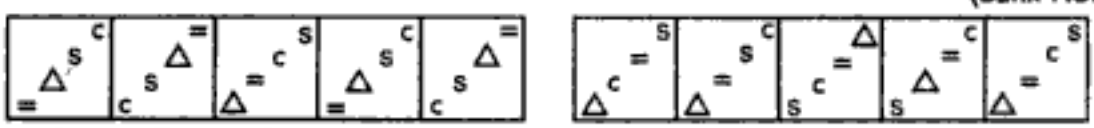
(B.S.R.B. 1994)

365.

A B C D E 1 2 3 4 5

(Bank P.O. 1992)

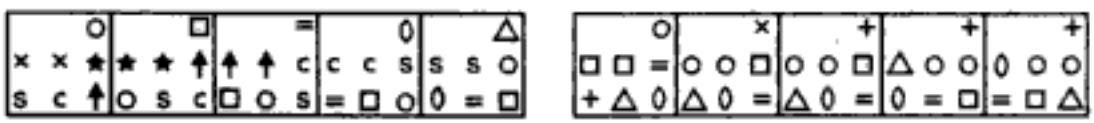
366.



A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

367.



A B C D E 1 2 3 4 5

368.

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

369.

A B C D E 1 2 3 4 5

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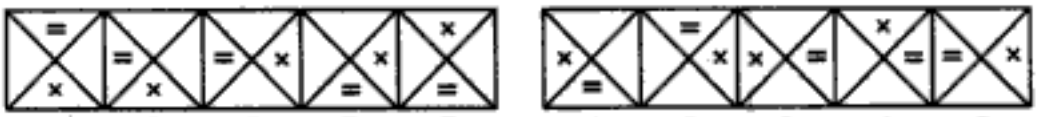
Problem Figures **Answer Figures**

392.



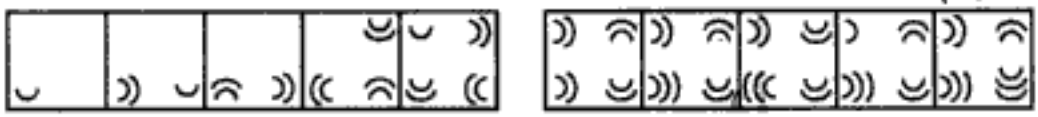
A B C D E 1 2 3 4 5

393.

A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

394.



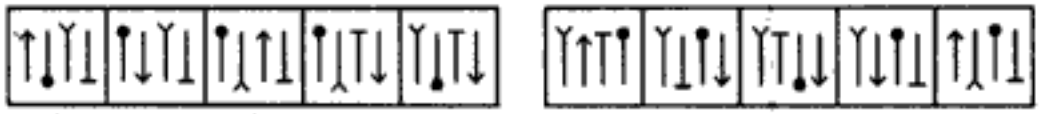
A B C D E 1 2 3 4 5

(Bank P.O. 1996)

395.

A B C D E 1 2 3 4 5

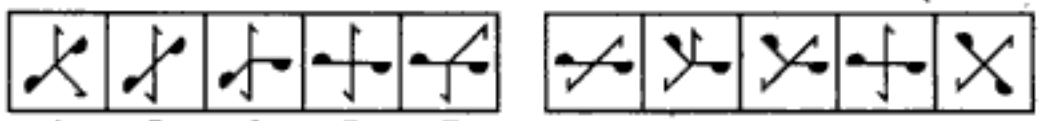
396.



A B C D E 1 2 3 4 5

(Bank P.O. 1993)

397.



A B C D E 1 2 3 4 5

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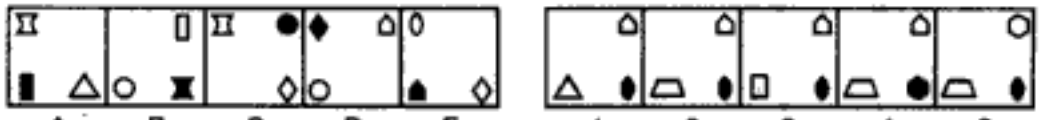
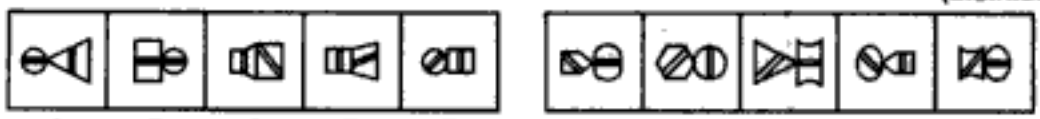


A B C D E 1 2 3 4 5

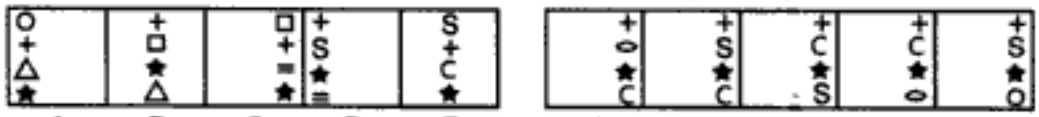
(B.S.R.B. 1996)

399.



A B C D E 1 2 3 4 5

400.



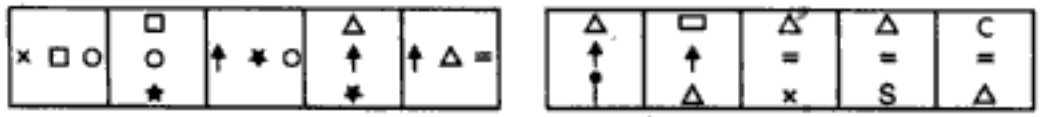
A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

401.

A B C D E 1 2 3 4 5

402.



A B C D E 1 2 3 4 5

(Bank P.O. 1994)

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Problem Figures **Answer Figures**

414.

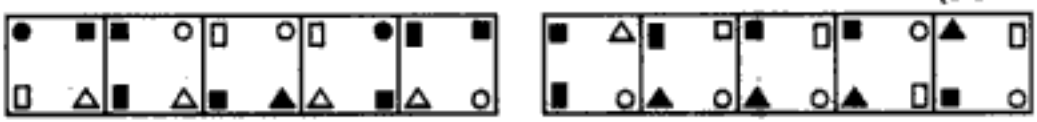
A B C D E 1 2 3 4 5

415.

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

416.



A B C D E 1 2 3 4 5

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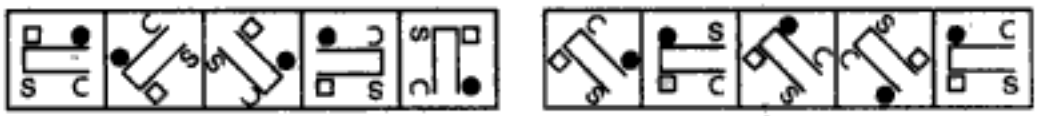
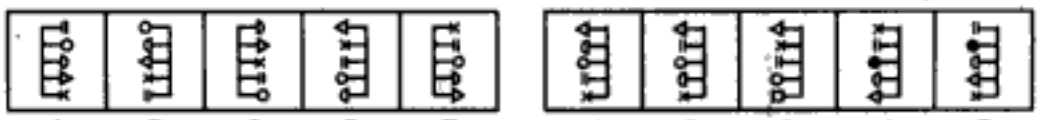


A B C D E 1 2 3 4 5

(Bank P.O. 1994)

418.



A B C D E 1 2 3 4 5

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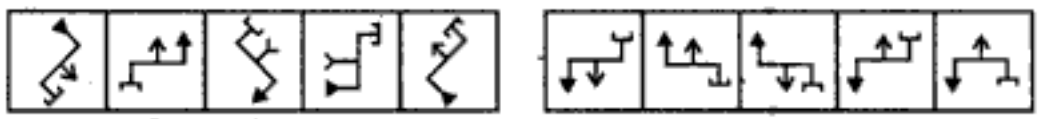
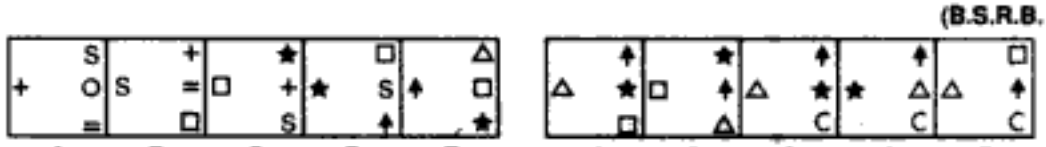


A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

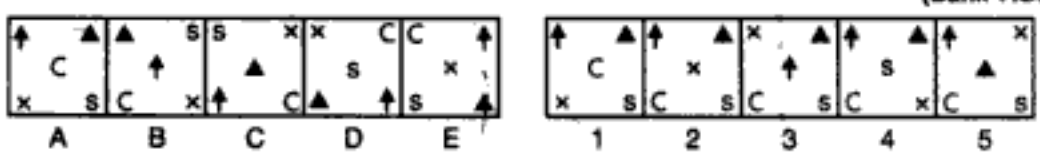
420.



A B C D E 1 2 3 4 5

(Bank P.O. 1993)

421.



A B C D E 1 2 3 4 5

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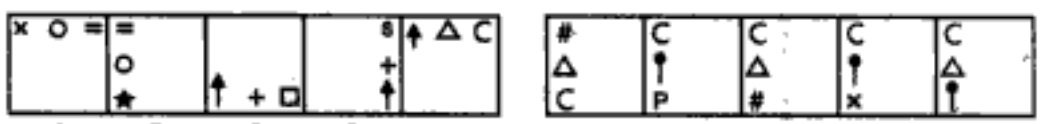


A B C D E 1 2 3 4 5

(NABARD, 1994)

423.

A B C D E 1 2 3 4 5

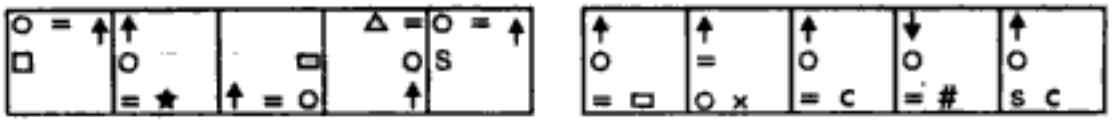
(B.S.R.B. 1995)

424.

A B C D E 1 2 3 4 5

Problem Figures **Answer Figures**

425.



A B C D E 1 2 3 4 5

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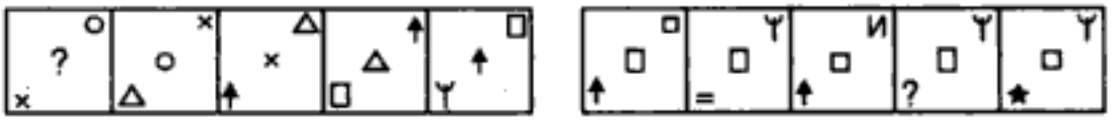

A B C D E 1 2 3 4 5

(Bank P.O. 1992)

427.

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428.

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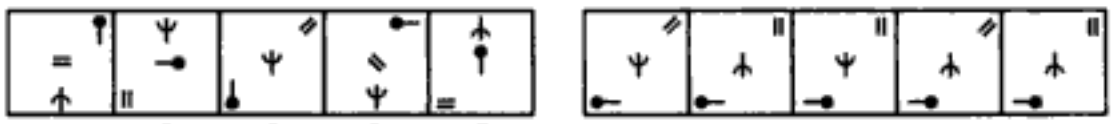
(B.S.R.B. 1995)

429.



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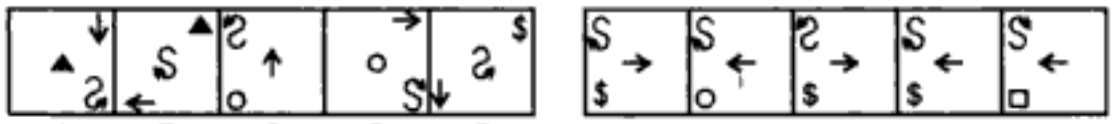

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(B.S.R.B. 1996)

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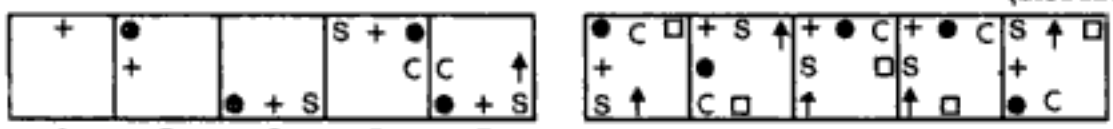

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(Bank P.O. 1993)

432.

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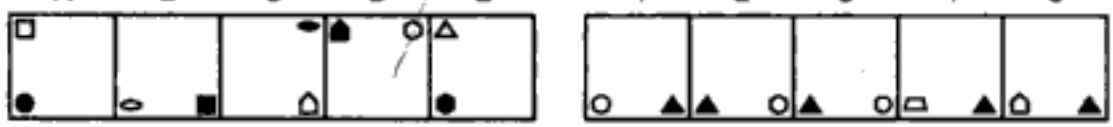

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(Bank P.O. 1993)

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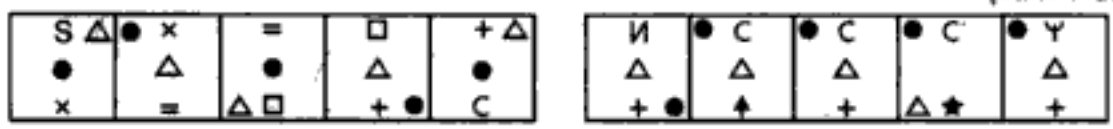

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(B.S.R.B. 1993)

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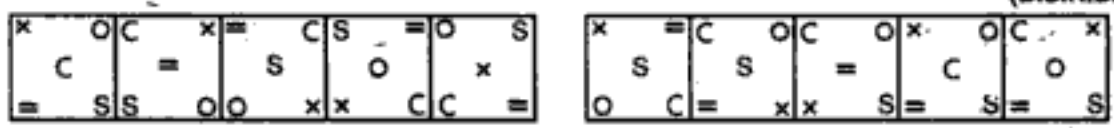

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Problem Figures **Answer Figures**

436.

A B C D E 1 2 3 4 5

(R.B.I. 1993)

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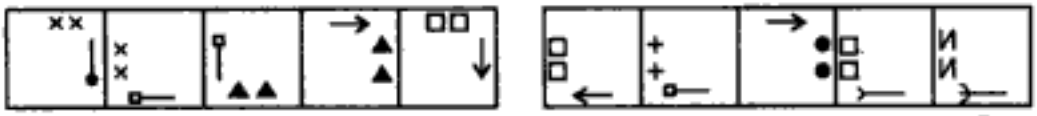

A B C D E 1 2 3 4 5

438.

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(B.S.R.B. 1996)

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(B.S.R.B. 1995)

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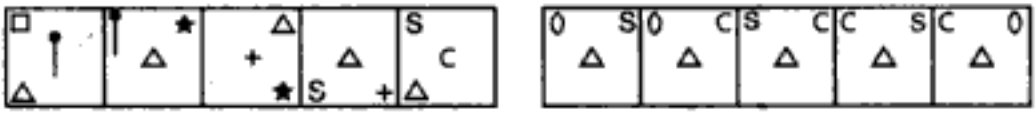

A B C D E 1 2 3 4 5

(Bank P.O. 1994)

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(B.S.R.B. 1994)

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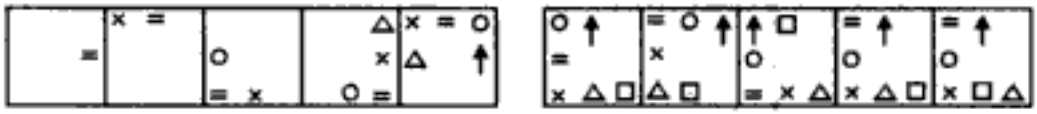

A B C D E 1 2 3 4 5

444.

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(B.S.R.B. 1996)

445.

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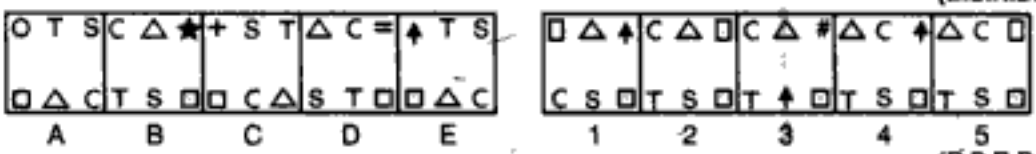
(B.S.R.B. 1995)

446.



A B C D E 1 2 3 4 5

(B.S.R.B. 1996)

Problem Figures **Answer Figures**

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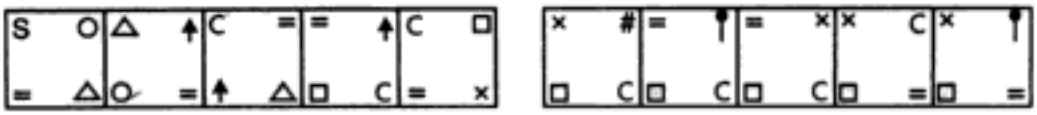

A B C D E 1 2 3 4 5

(NABARD, 1994)

448.

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(Bank P.O. 1993)

449.

A B C D E 1 2 3 4 5

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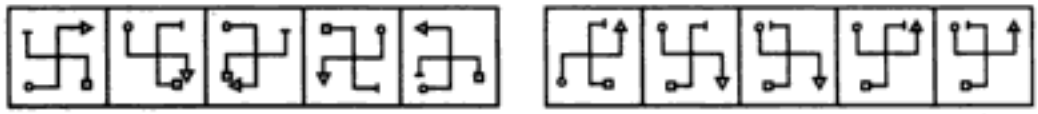

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

451.

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(B.S.R.B. 1995)

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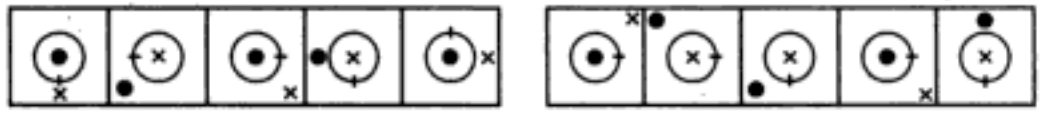

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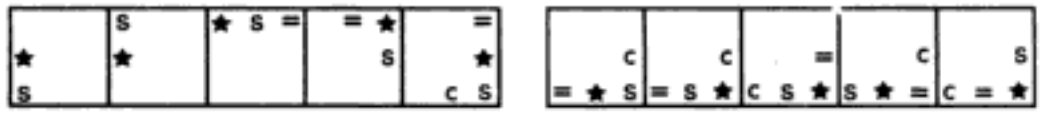

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(B.S.R.B. 1995)

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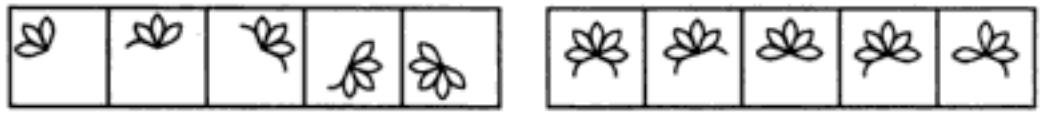

A B C D E 1 2 3 4 5

(Bank P.O. 1996)

456.

A B C D E 1 2 3 4 5

(S.B.I.P.O. 1994)

457.

A B C D E 1 2 3 4 5

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Problem Figures **Answer Figures**

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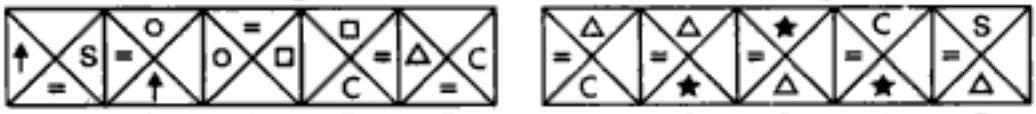

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

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A B C D E 1 2 3 4 5

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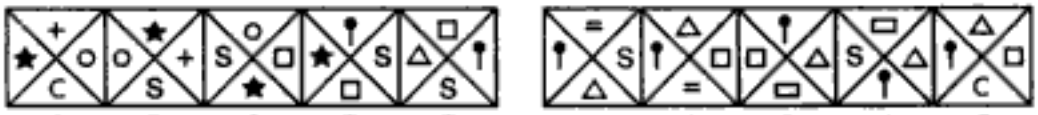

A B C D E 1 2 3 4 5

(Bank P.O. 1995)

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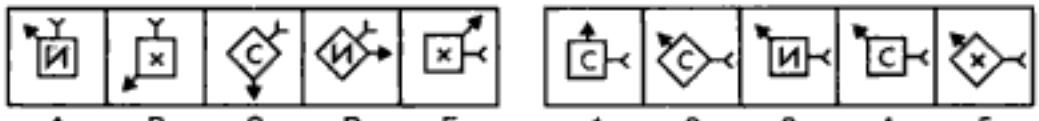

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(B.S.R.B. 1995)

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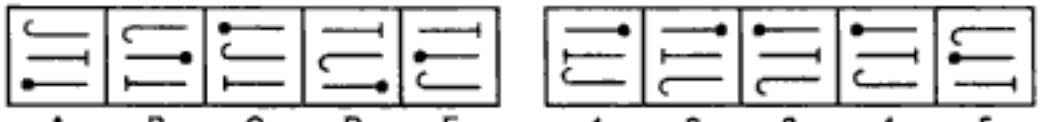

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(S.B.I.P.O. 1994)

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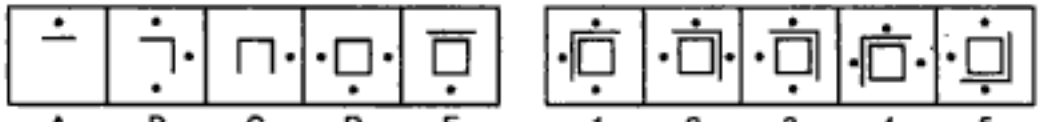

A B C D E 1 2 3 4 5

476.

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(B.S.R.B. 1996)

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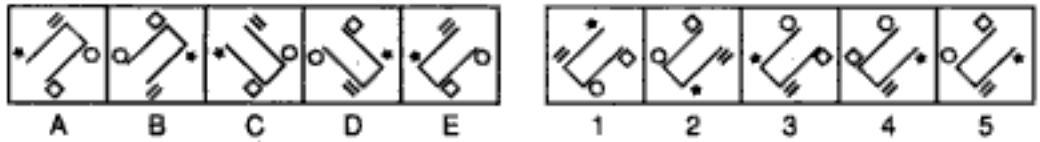

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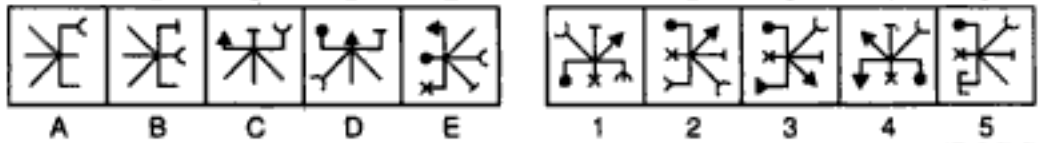

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(B.S.R.B. 1995)

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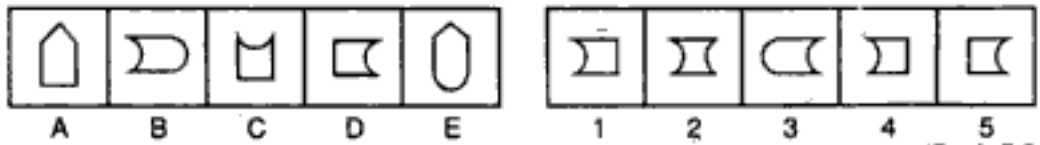

A B C D E 1 2 3 4 5

(Bank P.O. 1996)

Problem Figures **Answer Figures**

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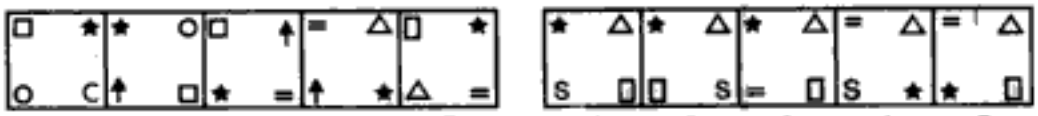

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

481.

A B C D E 1 2 3 4 5

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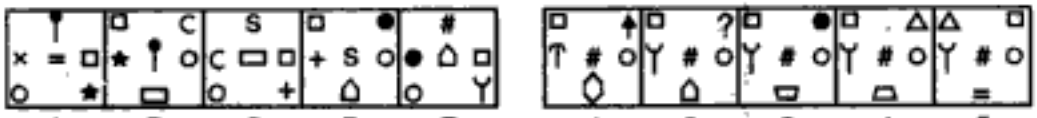

A B C D E 1 2 3 4 5

(Bank P.O. 1995)

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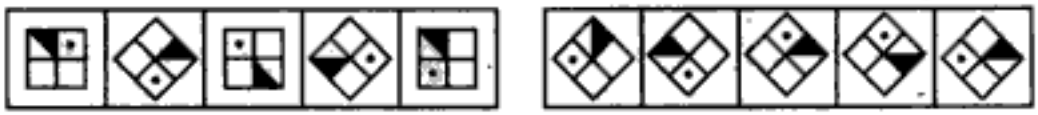

A B C D E 1 2 3 4 5

(B.S.R.B. 1993)

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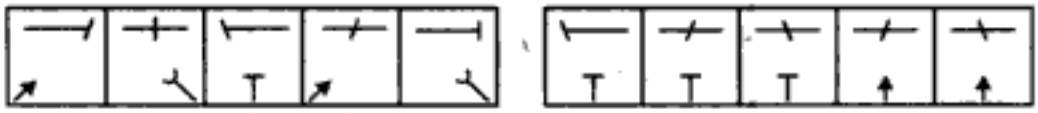

A B C D E 1 2 3 4 5

(S.B.I.P.O. 1994)

485.

A B C D E 1 2 3 4 5

486.

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

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(B.S.R.B. 1996)

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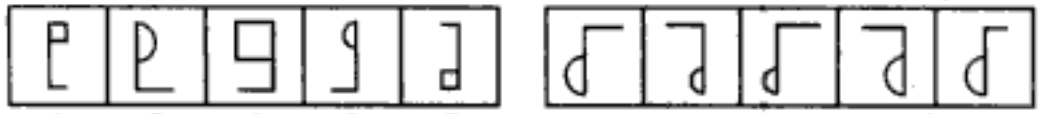

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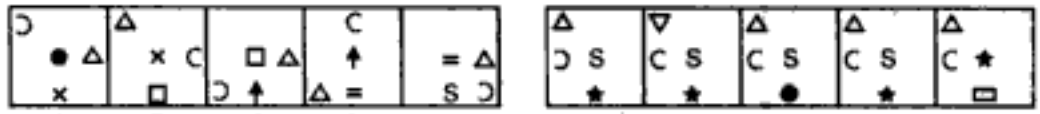

A B C D E 1 2 3 4 5

(S.B.I.P.O. 1994)

Problem Figures **Answer Figures**

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A B C D E 1 2 3 4 5

492.

A B C D E 1 2 3 4 5

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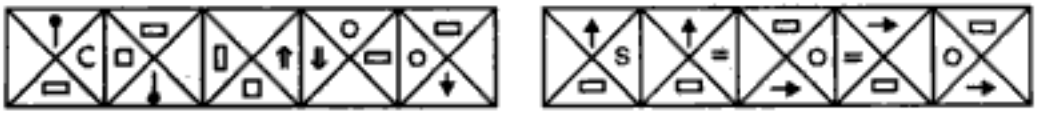

A B C D E 1 2 3 4 5

(B.S.R.B. 1994)

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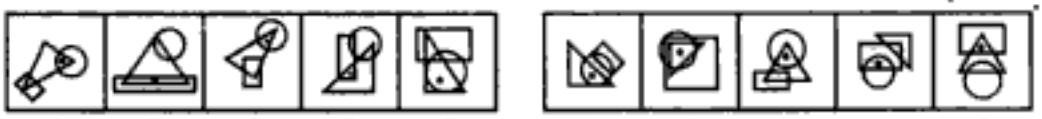

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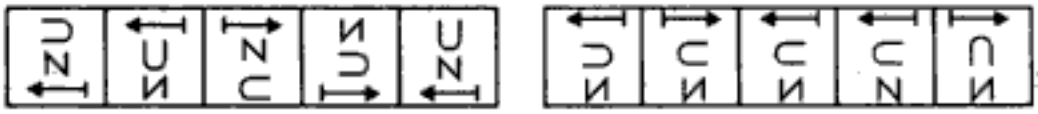

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

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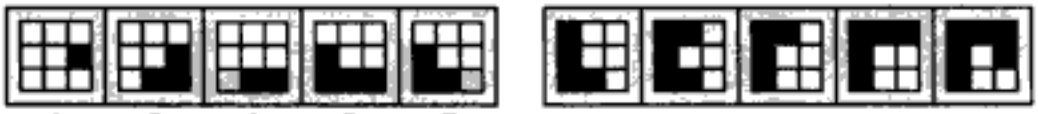

A B C D E 1 2 3 4 5

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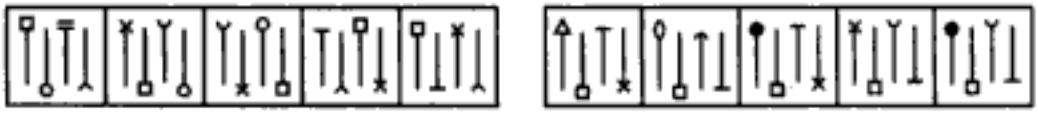

A B C D E 1 2 3 4 5

(Bank P.O. 1995)

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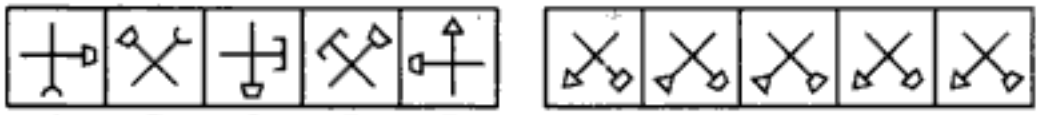

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(B.S.R.B. 1996)

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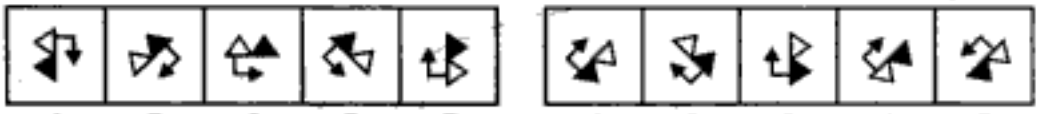

A B C D E 1 2 3 4 5

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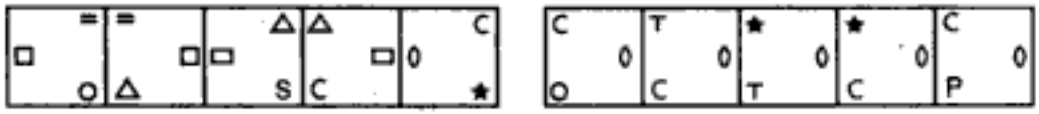

A B C D E 1 2 3 4 5

(B.S.R.B. 1995)

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portion of the figure and two lines are added to the L.H.S. portion. The two steps are repeated alternately.

42. (*2*) : The figure rotates 135° ACW in each step.

43. (*5*) : One of the pins gets inverted in each step.

44. (*3*) : The outer arrow moves ACW and its head gets reversed in each step. The dark rectangle also moves to the adjacent side in ACW direction. The inner triangle first moves to the adjacent side and then to the opposite side.

45. (*4*) : The shading moves CW in every second step. The arc gets laterally inverted in one step and moves to the adjacent side in an ACW direction in the next step.

46. (*4*) : Similar figure reappears in every second step and each time the first figure reappears, it gets rotated in ACW direction while each time the second figure reappears, it gets rotated in CW direction.

47. (*2*) : The arrow moves 45°, 90°, 135°, 180°, ... successively in an ACW direction and also rotates 90° CW in each step.

48. (*4*) : The line inside the rhombus moves ACW in every alternate figure and the symbol moves one step ACW and gets replaced by a new one in alternate figures.

49. (*1*) : All the symbols move CW in each step and the symbols before and after the triangle get replaced by new ones alternately.

50. (*2*) : Arcs and T's are added alternately and in each step the arcs and the T's reverse their directions.

51. (*4*) : Three cups and one cup reverse their directions in alternate steps.

52. (*5*) : One and two lines are added to the figure alternately.

53. (*3*) : The symbol moves 2, 4, 6, ... steps ACW sequentially and is replaced by a new symbol in each turn.

54. (*3*) : The '×' moves one step and two steps ACW alternately and a new symbol is added once before and once after the pre- existing lines.

55. (*2*) : Two and one arcs reverse their directions alternately.

56. (*5*) : The arrows move ACW in each step and one extra arrow is added after every second step. The arrowheads change after every two steps.

57. (*3*) : The white figure moves to the opposite corner and becomes black while the black figure is replaced by a new white figure. This goes on in each step.

58. (*3*) : In each step, the two upper symbols interchange positions amongst themselves and the two lower symbols interchange positions amongst themselves. The lower most and the uppermost symbols are replaced by new symbols alternately.

59. (*3*) : In each step, all the symbols move upwards; the uppermost symbol reaches the bottom and the symbol that reaches the top gets replaced by a new one.

60. (*1*) : In each step, one line disappears from the upper part of the figure and one line is added to the lower part of the figure.

61. (*5*) : All the symbols move ACW in each step and new symbols are added before and after the pre-existing symbols alternately.

62. (*2*) : The cup-shaped figure moves ACW through an angle of 90° at each step while the arrow moves diagonally and gets inverted at each step.

63. (*2*) : The shaded portions move one step ACW each time and one extra portion gets shaded alternately.

64. (*5*) : The upper and the middle parts of the figure are identical in alternate steps and reverse their directions in every second step. The lower part of the figure repeats itself after every third step.

65. (*5*) : The central figure gets duplicated in one step and gets replaced by a single new figure in the next step. This process repeats. The circle and the square interchange positions in each step.

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88. (*4*) : The two semi circles reverse their directions alternately one after the other. The lower short line rotates 90° ACW in each step while the upper short line rotates 90° CW in alternate steps.

89. (*1*) : The similar figure appears in every third step and each time it reappears a line is added to it.

90. (*4*) : The figure rotates 90° CW in each step and half, one, one & a half, two, ... sides of square are added sequentially.

91. (*3*) : In one step, from the L.H.S., first and second symbols interchange positions and the fifth symbol becomes the third one. In the next step, fourth and fifth symbols interchange positions and the first symbol becomes the third one. The two steps are repeated alternately. Moreover, the figure rotates 45° ACW and 90° ACW alternately.

92. (*4*) : One, two, two, three, three, ... sides of the hexagon are missing sequentially. The sides which are missing in any of the figures lie alternately to the R.H.S. and L.H.S. of the sides missing in the preceding figure. Moreover, one extra dot is added to the figure in every second step and the pre-existing dots move clockwise.

93. (*1*) : Two half leaves are added in first, third, fifth, ... steps and the figure rotates 45° CW in each step.

94. (*3*) : In the upper part of the figure first the L.H.S. arc gets laterally inverted, then the arrow gets inverted and then the R.H.S. arc gets laterally inverted and the three steps are then repeated. In the lower part of the figure, the same position is retained in two consecutive figures.

95. (*1*) : The semicircle rotates 90° CW in each step and moves along the diagonal. The other figure gets inverted in each step and moves horizontally.

96. (*1*) : In each step, one of the lines in the lower part of the figure becomes vertical and an arc is added to the upper part of the figure which is curved in a direction opposite to the last curve.

97. (*2*) : The L-shaped figure gets rotated CW through 90° and increases in number by one in each alternate step. The figure in the top left corner replaces the figure in the top right corner and a new figure appears in the top left corner at each step.

98. (*1*) : Once the signs in pairs (O, =) and (↑, ×) interchange their positions and then both the pairs interchange positions.

99. (*3*) : Similar figure appears alternately and each time it reappears it gets rotated through 135° ACW and the shading moves one step.

100. (*3*) : Three and four line segments are added alternately to from L's in a set order.

101. (*4*) : One extra arrow is added above the pre-existing arrows in every alternate step and the pre-existing arrows reverse their directions in each second alternate figure.

102. (*1*) : One of the symbols moves ACW and the other moves diagonally in each step. The symbols are replaced by new ones after every second step.

103. (*4*) : Half leaves are added to the upper and lower part of the figure alternately.

104. (*5*) : In the first step, the symbol in the top left corner gets inverted and all other symbols move ACW. In the second step, the symbol in the top right corner gets inverted and all other symbols move ACW. This goes on alternately.

105. (*3*) : The symbols move in a set order and a new symbol is added in the lower left corner at each step.

106. (*3*) : In one step, the middle symbol on the left side and the upper and lower symbols on the right side move one step CW. In the next step, the other three symbols move one step ACW.

107. (*4*) : One 'L' from the R.H.S. and two L's from the L.H.S. are removed from the figure alternately.

108. (*2*) : The figure rotates 120° CW in one step and in the next step, half of the circle opposite the black part gets black and the shading already present is lost. In the

third step again the figure rotates 120° ACW and in the fourth step, the part opposite the half shaded circle becomes black and the existing shading is lost. This procedure is continued.

109. (*3*) : The first and second symbols; and the second and third symbols interchange positions alternately. The half pin rotates 180° in each step. The half-arrow rotates 180° in one step and gets inverted in the next step. In case of the third symbol, it gets reversed and then its head is inverted in one step and in the next step, only its head gets inverted.

110. (*3*) : Similar figure repeats in every four steps and each time a figure re-appears, it gets inverted.

111. (*2*) : The symbol 'S' moves ACW from corner to corner; the 'Δ' moves up and down along a diagonal, the square moves up and down along the other diagonal. The fourth symbol moves ACW from corner to corner and is replaced by a new symbol in each step.

112. (*5*) : Similar figure appears alternately and each time it reappears the arrow moves to the opposite side of the square and reverses its direction.

113. (*1*) : The '×' moves one step and two steps ACW alternately and a symbol is added once before and then after the cross alternately.

114. (*1*) : A new line is added as a side of each one of the pre-existing parts of squares, a new line appears for a new square and a line appears in the completely formed squares.

115. (*2*) : The figure rotates 90° CW in each step and half and quarter circles are added to it on the inside alternately.

116. (*5*) : In first step, the symbols move in the order  . In the second step, the symbols move in the order  . The two steps are repeated alternately.

117. (*4*) : In each step, the outer bigger figure becomes smaller and is enclosed in a new figure. The arrow rotates 90° CW and moves one step ACW and each time it bears a new figure at its end.

118. (*4*) : The symbols move half a side of the square, in an ACW direction, in each step and the symbols before and after the arrow are alternately replaced by new symbols.

119. (*2*) : The figure rotates 45° ACW and each one of the arcs rotates 90° ACW in each step.

120. (*5*) : In each step, the figure rotates through an angle of 90°. Alternately, one and two lines are added inside the figure.

121. (*3*) : Each of the two symbols moves from corner to corner in an ACW direction. But before any of them comes to occupy a corner, it comes in the centre of the square.

122. (*3*) : Symbols interchange positions once horizontally and then diagonally. Also in each step the symbol in the upper right corner is replaced by a new one.

123. (*1*) : Similar figure appears alternately and each time it appears, it rotates 90° CW.

124. (*2*) : The similar figure repeats in every second step and each time the first figure reappears, it gets rotated 90° CW and each time the second figure reappears it gets rotated 45° CW and an extra leaf is added to it.

125. (*4*) : (A) is rotated 45° CW into (B). The elements at the NW-SE diagonal are interchanged and the elements at the other diagonal are replaced by new ones. (C) is rotated 45° CW into (D). The elements at the NW-SE diagonal are interchanged and the elements at the other diagonal are replaced by new ones. The process is repeated.

126. (*4*) : In one step, the dot moves to the adjacent line in CW direction and in the next step, the entire figure rotates 45° ACW.

127. (*4*) : In the first step, all except the first symbol (from the bottom) reverse in direction. In the second step, all except second and third symbols reverse their directions. In

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177. (*1*) : The 'C' gets inverted in each step and moves to the adjacent side in ACW direction in second, fourth, ... steps. The arrow gets inverted in each step and moves to the adjacent side in ACW direction in first, third, fifth, ... steps.

178. (*2*) : The shading and the lines move in their respective set orders. The number of lines becomes one and two alternately. Since the position of shading in fig. (E) is the same as in fig. (A), so the position in fig. (B) is to be repeated in the answer figure. The position of lines remains the same in two consecutive figures. So, the position in fig. (E) must be repeated in the answer fig. Also the number of lines must be two.

179. (*4*) : Similar figure repeats in every fourth step and each time a fig. reappears, the L.H.S. part remains the same while the half arrow in the R.H.S. part gets rotated through 180°.

180. (*4*) : The symbol at the lower central position becomes the first symbol in ACW direction and a new symbol appears at the lower central position.

181. (*2*) : The trapezium changes its position in each step and gets inverted in all steps while the other symbol at the end of the line changes its position in each step and gets inverted and replaced alternately.

182. (*1*) : An arc is added inside the square in one step and it comes out of the square and reverses its direction in the other step. Also an arrow is added to the figure in one step and it gets reversed.

183. (*5*) : The figure rotates 90° CW in each step. The number of dots decreases by one in first, third, fifth, ... steps and the number of arrows increases by one in second, fourth, ... steps.

184. (*5*) : The symbols move in the order  in the first step; in the order  in the second step; in the order  in the third step; in the order  in the fourth step and so on. Thus, the first step will be repeated as the fifth step.

185. (*3*) : The upper and the right symbols and the lower and the left symbols interchange positions in one step white the upper and the left symbols and the lower and the right symbols interchange positions in the next step. This goes on alternately. Symbols are replaced by new ones ACW.

186. (*5*) : The figure rotates 90° ACW and 135° CW alternately. The white figure is replaced by a new one in each step. In the second step, the black figure reverses its position and in the fourth step the black and the white figures interchange positions.

187. (*3*) : In the first, third, fifth, ... stpes, the symbols move in the order  and the symbol that reaches the top right corner gets replaced by a new one. In the second, fourth, ... steps, the symbols move in the order  and the symbol in the lower left corner gets replaced by a new one.

188. (*1*) : Every second figure is the water image of the previous one.

189. (*2*) : Similar figure appears alternately and each time a fig. reappears, it gets rotated 90° CW and a line gets added to it.

190. (*4*) : The shading moves CW two and three steps alternately.

191. (*5*) : The arrow moves 1, 2, 3, ... steps CW sequentially and the dot moves 1, 2, 3, ... steps ACW sequentially.

192. (*2*) : In the first, third, fifth, ... steps the symbols move in the order  and

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274. (*2*) : Arrows with half, one, one and a half, ... arrow heads are added in each step.

275. (*1*) : The triangle with white circle moves CW in a set order and one extra line is added to the fig. in every second step.

276. (*3*) : The symbols move in the order  in each step. The triangle rotates 90° ACW and the arrow rotates 90° CW in each step. The rectangle gets half shaded in one step; gets inverted in the second step and becomes unshaded in the third step. This process repeats.

277. (*3*) : An arc is added to the fig. in each step and the pre-existing arcs get reversed in direction.

278. (*4*) : The V-shaped symbol moves up and down along the midline and rotates 90° ACW in every second step. The other symbol moves one, two three, ... steps ACW in subsequent turns and gets replaced by a new symbol in each step.

279. (*1*) : The symbols are replaced by new ones step by step in a CW direction.

280. (*2*) : First the arrow interchanges its position with that of the signs placed on its right in three subsequent steps. It is then followed by the pin. Also, as any two signs interchange places both of them get inverted.

281. (*4*) : Starting from the top, the part of the figure get curved stepwise and then again the lines become straight in the same order.

282. (*5*) : The central symbol in the first figure moves towards the left and once it reaches the leftmost position it moves to the rightmost position in the next step. The lower right symbol in the first figure moves upwards along the diagonal & once in the uppermost position it reaches the lowermost position in the next step. It gets replaced by a new symbol in every second step. The arrow moves to the adjacent corner ACW in each step & rotates 90° ACW, 45° CW, 90° ACW, ... sequentially.

283. (*5*) : The star and the rectangle move downwards sequentially along the left boundary, the midline and the right boundary.

284. (*4*) : An arc is added to the figure in each step and all the pre- existing arcs reverse their directions in each step.

285. (*3*) : The cup-shaped figure opens out in two steps and then gets inverted moving diagonally. The process is repeated.

286. (*5*) : The arrow moves ACW alternately and reverses its direction in each step. The triangle moves CW alternately and reverses its direction in each step.

287. (*5*) : The line along which the symbols lie rotates 90° ACW in each step. The symbols interchange positions in one step and are replaced by new symbols in the next step.

288. (*5*) : In one step, the figure rotates 90° CW and in the next step, it returns to its initial position and gets laterally inverted. This process is repeated. Also, the pins get attached to the triangle with lines and the half-shaded triangle alternately. The number of lines in the triangle increases by one at each step.

289. (*5*) : A new element is added at the top in each figure. The first, third, fifth, ... elements move ACW while the second, fourth, ... elements move one step CW. Also, each element appears only thrice and then disappears.

290. (*5*) : Similar figure appears alternately. Each time a fig. reappears, the three symbols on one side of the mid-line move upwards and the upper symbol becomes the lower one. The two symbols on the other side of the line interchange positions.

291. (*2*) : Fig. (A) repeats in (E). So, fig. (B) should repeat after (E) to continue the series.

292. (*5*) : In one step, the two upper symbols interchange positions and a new symbol replaces the one at the lowermost position. In the next step, the two lower symbols interchange positions and the symbol at the uppermost position gets replaced by a new one.

293. (*3*) : The arrows and the pins are added alternately. All the pins and the arrows rotate 90° CW in each step.

294. (*5*) : In one step, a line in the upper part of the figure disappears and a line in the lower part of the figure becomes horizontal and in the next step, a line in the lower part disappears. This process repeats.

295. (*3*) : The symbols move in the order  . In each step, the symbol that reaches the upper left position gets replaced by a new one.

296. (*5*) : The shading moves one step ACW each time. Also, an extra portion gets shaded after every second step.

297. (*3*) : In each step, the upper smaller symbol comes to the lower position, gets enlarged and also gets inverted upside down. The lower, bigger symbol goes to the upper position, reduces in size and gets replaced by a new one.

298. (*2*) : One of the arrows rotates ACW 90° and 45° alternately. The other arrow rotates 45° and 90° ACW alternately. The pin moves CW from corner to corner and also rotates 90° CW in each step.

299. (*2*) : The square rotates through 45° in each step and the line moves 90° and 135° ACW alternately. The symbol outside the square goes inside while the inner symbol comes out in each step. Also, each time the circle comes out it moves CW and each time the other symbol comes out it also moves CW. Moreover, whenever the symbol (other than the circle) goes inside, it gets replaced by a new one.

300. (*4*) : In each step, the last symbol becomes the first and a new symbol is added in front of it.

301. (*1*) : In one step, all the arrows get inverted and the fourth arrow comes to the top and in the next step, except the first arrow all other arrows are inverted and the third and the fourth arrows reach to the top. The two steps are repeated alternately.

302. (*5*) : Similar figure repeats in every fourth step and each time it reappears it rotates through 180°.

303. (*5*) : The symbols interchange positions horizontally in one step, vertically in second step and both horizontally and vertically in third step. This process repeats.

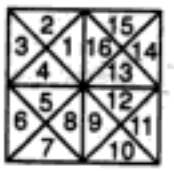
304. (*4*) : Horizontal shading moves ACW while vertical shading moves CW.

305. (*2*) : In each step, the larger sector of the circle rotates 90° CW while the smaller sector rotates 45° ACW.

306. (*3*) : Similar figure repeats in every third step and each time it reappears it rotates 90° ACW and a line detaches from the lower part and adds on to the upper part.

307. (*2*) : In one step, the fourth symbol becomes the first one and all other symbols move one step downwards. In the next step, the first and third, and the second and fourth symbols interchange positions. The pin gets inverted in one step and rotates through 180° in the next step. The arc reverses in direction in one step and the whole arrow gets laterally inverted in the next step. The triangle gets reversed in one step and both the arrow and the triangle get inverted in the next step. The fourth arrow gets inverted in one step and laterally inverted in the next step. The process is repeated.

308. (*4*) : The U-shaped arrow is first laterally inverted and then inverted alternately. In the S-shaped arrow, first the arrowhead is inverted and then the whole arrow is inverted alternately.

309. (*5*) : We first label the figure as shown : 

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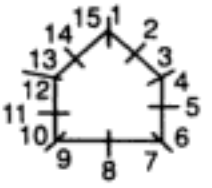
324. (*3*) : The circle interchanges position with the line and the arc interchanges position with the square in one step and the figure rotates 45° ACW in the next step. This goes on alternately.

325. (*1*) : In one step, the first and the second symbols (counting in CW direction) interchange positions and in the next step, the first and the third symbols interchange positions. This goes on alternately. The remaining symbol moves to the vacant portion and gets replaced by a new symbol in each step.

326. (*2*) : The pin moves one, two, three, ... steps ACW in subsequent turns with its head pointing towards the centre each time. The semi-circle moves one, two, three, ... steps CW along the sides of the figures, the steps being counted as under.



327. (*1*) : The S-shaped figure moves along a diagonal and rotates 90° ACW in each step while the arrow moves horizontally and gets inverted in every third step.

328. (*3*) : The pin gets inverted and moves one step ACW each time. The half arrow moves one step ACW and reverses direction in first turn, moves one step ACW in the second turn, reverses direction in the third turn, moves one step ACW in the fourth turn and finally again moves one step ACW and reverses direction.

329. (*3*) : The hooks get laterally inverted and a new hook is added alternately. The number of dots increases by one after every two steps.

330. (*1*) : The bent pin rotates 90° CW in each step. The J-shaped symbol gets inverted upside down in one step and laterally inverted in the next step. A similar type of third symbol occurs in alternate steps and when it reappears it gets laterally inverted in one turn and inverted upside down in the next turn. All the symbols move one step CW in every second step.

331. (*2*) : Arrow moves 45° CW and pin moves 45° ACW in each step.

332. (*3*) : The first and second, the second and third and the first and third symbols interchange positions in subsequent steps. The arrow and the pin get laterally inverted alternately.

333. (*1*) : One element is removed from the bottom in each step. First the leftmost symbol, then the rightmost symbol and finally the line disappears.

334. (*5*) : The symbols move downwards along the diagonal and in each step the lowermost symbol becomes the uppermost. The triangle gets inverted, the rectangle rotates through 90° and the square rotates through 45° in each step.

335. (*3*) : The central symbol interchanges position with one of the corner symbols and the symbol that comes to the centre gets replaced by a new one. This goes on in a CW direction.

336. (*3*) : The lower left figure rotates 90° ACW and gets enlarged; the upper large figure rotates 90° ACW and gets diminished; the third figure is replaced by a new one and all the figures then rotate one step CW.

337. (*2*) : All the symbols move one step ACW and alternately the first and third symbols are replaced by new ones.

338. (*2*) : The symbols move in the order  in each step. Also, the symbol in the lower right corner disappears and a new symbol appears in the upper right corner.

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404. (*3*) : In the upper pin, the head moves to the other side of the line and moves upwards half the length of the line in each step. The lower pin gets laterally inverted in one step and inverted upside down in the next step. The arrowhead gets laterally inverted in each step and moves sequentially along the line. The arrow shifts to the opposite side of the square in every second step.

405. (*4*) : A P-shaped symbol obtained by inverting the previously added symbol upside down is added at each step. The pre-existing Ps get laterally inverted.

406. (*1*) : The figure rotates 90° CW in each step. The arrows with two and one lines interchange positions. The symbol similar to one of the arrow-heads appears at the centre. In one step, one of the arrowheads is replaced by a new one and in the next step, both the arrowheads are replaced by new symbols.

407. (*2*) : The semi-circle gets inverted in every third step and the symbol inside the semi-circle is replaced by a new symbol in every second step. The number of '+' signs increases by one in every second step.

408. (*5*) : Similar figure repeats alternately. Each time a figure reappears, the arrow rotates 90° ACW and the N-shaped symbol gets inverted. The arrow moves stepwise up and down along the central line while the N-shaped symbol moves along the diagonal.

409. (*4*) : The figure rotates 90° ACW in each step. Also black arrow is replaced by a square, 'T' by black arrow, arrow by 'T', square by arrow and so on, sequentially.

410. (*1*) : The first triangle gets inverted in each step, the second triangle gets inverted in every second step and the third triangle rotates 90° CW in every second step. The arrow rotates 90° ACW and 90° CW alternately in second, fourth, ... steps and moves to the adjacent corner CW in first, third, ... steps.

411. (*4*) : The S-shaped arrow moves along a diagonal sequentially and gets laterally inverted and inverted upside down alternately. The arrow moves along the other diagonal and rotates 90° CW in each step. The third symbol moves along the same diagonal as the arrow and gets replaced by a new symbol in every second step.

412. (*4*) : In one step, the middle and innermost figures interchange positions and the outermost figure is replaced by a new one. In the next step, the innermost and outermost figures interchange positions and the middle figure gets replaced by a new one. The process repeats.

413. (*1*) : The cup-shaped figure rotates 90° CW in each step. In case it opens towards the right it gets laterally inverted. The upper and left arcs get inverted in one step and the lower and right arcs get inverted in the next step.

414 (*1*) : The first symbol moves along the diagonal from top right to lower left corner while the second symbol moves along the other diagonal. In the first step the first symbol is replaced by a new one and in the next step, the other symbol is replaced by a new one.

415. (*2*) : The similar figure appears in every alternate step and each time it reappears, the semicircle rotates 90° CW and a line is added to the figure.

416. (*3*) : In each step, the square interchanges position with the adjacent dark symbol in ACW direction. This symbol gets unshaded while the next symbol gets darkened.

417. (*3*) : The figure rotates 45° and 90° ACW alternately and the symbols move one step ACW each time.

418. (*5*) : In each step, the uppermost element becomes the lowermost and all other elements move upwards. Also, the figure gets laterally inverted in each step.

419. (*1*) : The figure rotates 45° CW in each step. Also, in one step, the elements at the extreme positions get inverted and the middle arrow moves to the other side of the line and in the alternate step, the arrowhead gets inverted and the lines at the extreme positions move to the other side of the line.

420. (*3*) : In one step, the symbols move in the order  and the symbol that reaches the lower right corner gets replaced by a new one and in the next step, the symbols move in the order  and the symbol that reaches the upper right corner gets replaced by a new one. The two steps are repeated alternately.

421. (*1*) : In each step, all the symbols move CW and the symbol at the centre interchanges position with the symbol that reaches the lower left corner.

422. (*3*) : The symbols move two steps ACW each time. In one step, the first symbol is replaced by a new one and in the next step, all the symbols are replaced. The process is repeated.

423. (*2*) : The circle along with the shaded sector rotates 135° ACW in each step. Also, a similar type of outer curved figure appears in alternate stpes and each time it reappears, it rotates 90° ACW.

424 (*2*) : The shaded semicircle moves one step ACW each time and gets inside and outside the hexagon alternately. The dot moves one step CW in each step and gets outside and inside the hexagon alternately.

425. (*3*) : All the symbols move two steps ACW; the circle and the '=' sign interchange positions and the first symbol gets replaced by a new one each time.

426. (*2*) : In each step, the lower left symbol moves to the upper right position while the other two symbols move down along the diagonal. The symbol that reaches the lower left corner gets replaced by a new one.

427. (*1*) : The symbol moves two, three, four, ... steps ACW and is replaced by a new one in each step. The symbol also changes direction in each step.

428. (*1*) : The figure moves along the diagonal. It gets laterally inverted and rotates through 180° alternately.

429. (*5*) : In each step, the pin rotates 90° CW and moves down along the diagonal from upper right to lower left corner. The '=' sign also moves downwards along the same diagonal and rotates sequentially through 90°, 45°, 90°, 135°, 90°, ... in CW direction. The third symbol gets inverted in first, fourth, seventh, ... steps and moves downwards. (Each one of the symbols, once in the lowermost position, moves to the top most position in the next step).

430. (*4*) : The S-shaped arrow gets laterally inverted and inverted upside down alternately and moves upwards along a diagonal. The arrow rotates 90° CW in each step and moves along the other diagonal. The third symbol moves upwards along the same diagonal as that of the arrow and also gets replaced by a new symbol in every second step.

431. (*1*) : The '+' sign moves ACW and a new symbol is added once before and once after it. The number of steps by which the '+' sign moves increases by 2 in every third step.

432. (*3*) : The shading and the vertical line move to diagonally opposite positions in alternate steps. The similar state of the curves with dots is repeated in every third step and each time it reappears, the curves turn to the other side.

433. (*4*) : In each step, the unshaded symbol moves to the diagonally opposite corner and gets shaded while the shaded symbol gets replaced by a new unshaded symbol.

434. (*2*) : The dot moves along the diagonal from upper left to lower right corner while the triangle moves along the other diagonal. The remaining two symbols interchange positions in each step and each time, the symbol that reaches the lower central position gets replaced by a new symbol.

435. (*4*) : The symbols move in the order  in each step.

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452. (*2*) : Similar fig. appears alternately and each time a fig. reappears, it gets rotated through 45° ACW. In odd numbered figures, the cross moves half a side of the square in ACW direction and in even numbered figures, the dot moves half a side of the square in CW direction.

453. (*4*) : The 'S' moves one step and half step CW alternately. A symbol is added before 'S' in one step and the symbol existing before 'S' reaches behind the pre-existing symbols in the next step. This goes on alternately.

454. (*5*) : The whole figure gets laterally inverted in one step and a new arrow is added to the right in the next step.

455. (*4*) : The figure rotates CW 45°, 45°, 90°, 90°, 135°, ... in subsequent steps. Each time a new half leaf is added first before and then after the pre-existing leaves.

456. (*5*) : In each step, the leaf parts on L.H.S. move to the R.H.S. of the line and those on the R.H.S. descend half the length of the line and shift to the L.H.S. A complete leaf, half leaf curved upwards, half leaf curved downwards are added sequentially to the top left position.

457. (*2*) : The pin and the black triangle move two steps ACW in alternates turns. The line inside the hexagon moves ACW in each turn and the line outside the hexagon moves two steps CW in every second turn.

458. (*2*) : The square along with V-shaped fig. rotates 45° CW in each step. The 'C' rotates 90° ACW and moves to the opposite quarter of the square in each step. The V-shaped figure moves 1, 2, 3, ... steps ACW in subsequent turns.

459. (*2*) : The cross and the 'C' move in a set pattern i.e. from a corner to the centre and then to the adjacent corner ACW, and so on.

460. (*5*) : The symbols in the lower left and upper left quadrants move CW and get replaced by new symbols in every fourth step. The symbols in the lower right & upper right quadrants move ACW and get replaced by new symbols in every fourth step.

461. (*1*) : In each step, a line is removed from the upper figure and added on to the lower figure.

462. (*4*) : In each step, the figure rotates 90° CW; the symbols move one step CW and the symbol that comes to the corner which is the upper right corner in (*a*) gets replaced by a new one.

463. (*1*) : The symbols move in the order  in the first step. In subsequent steps, they move in the order obtained by rotating the above order 90° CW each time. Also, the symbol at the encircled position gets replaced by a new one in alternate steps.

464. (*5*) : The semi-circle on left pin moves one step downward in alternate turns. The lower pin rotates 180° in one step and gets inverted in the next step. The right pin gets inverted in each step and the semi-circle on it moves one step upward in each alternate turn. The semi-circle on the upper pin moves from left to right sequentially and the pin gets inverted in each step.

465. (*5*) : The '=' sign rotates 90° ACW, 45° ACW, 90° CW, 45° CW, ... and moves sequentially along the diagonal. The pin too moves stepwise along the diagonal and rotates 90° CW in each step. The third symbol gets inverted in every third step and moves sequentially along the central vertical line.

466. (*2*) : The triangle moves to the adjacent corner ACW in each step and turns white and black in every second step. The triangle with bar moves to the adjacent corner CW in each step and gets inverted in every second step. The arrow moves to the adjacent corner ACW in each step and gets laterally inverted in first, third, fifth, ... steps. The fourth symbol moves to the adjacent corner CW and gets replaced by a new symbol in each step.

467. (*1*) : The central symbol in the first figure moves along the diagonal from the top left to the lower right corner and gets replaced by new symbols in first, fourth, ... steps. The upper right symbol in the first figure moves along the other diagonal and gets replaced by new symbols in second, fifth, ... steps. The third symbol in fig. (A) moves to the adjacent corner in CW direction in each step and gets replaced by new symbols in third, sixth, ... steps.

468. (*2*) : The whole figure rotates 90° ACW and the pair of lines gets inverted in each step. The other two symbols interchange positions in each step and are replaced alternately.

469. (*3*) : The first two symbols in ACW direction interchange positions while the third symbol moves one step ACW and is replaced by a new one in each step.

470. (*1*) : All the symbols move one step CW in one step and the oppositely placed symbols interchange positions in the next step. This goes on alternately.

471. (*2*) : The symbols move in the order  in the first step and the symbol at the encircled position gets replaced by a new one. In subsequent steps, the symbols move in the order obtained by rotating the above order 90° ACW each time.

472. (*1*) : The triangles which get laterally inverted in subsequent steps are 1st & 2nd; 3rd, 4th & !st; 2nd & 3rd; 4th, 1st & 2nd. So, in the next step, 3rd and 4th triangles will get laterally inverted.

473. (*4*) : The inner symbol repeats in every third step. The square rotates 45° CW in every second step. The arrow moves to the adjacent corner of the square in an ACW direction.

474. (*2*) : The second and third symbols, the first and second symbols, and the first and third symbols interchange positions stepwise. The J-shaped symbol gets inverted in each step, the pin gets laterally inverted in each step and the third symbol gets laterally inverted in every second step.

475. (*3*) : In odd-numbered figurers (A, C, E), the dot moves one step CW and two lines are added to the main figure in a set order in each turn. In even-numbered figures (B, D and 3), the three dots move one step CW each and two lines are added to the main figure in a set order each time.

476. (*3*) : The outer arc gets inverted in one step, rotates 90° CW in the next step, gets laterally inverted in the third step and again rotates 90° CW. The process repeats. The figure attached at its end lies towards the outside and inside alternately. The cup-shaped figure rotates 90° ACW in every second step, and the semi-circle moves along its sides sequentially.

477. (*2*) : In the first step, the symbols on either sides of the figure interchange positions and these symbols interchange positions amongst themselves too. In the next step, the figure rotates 90° CW and all the symbols move one step CW. The process repeats.

478. (*3*) : The figure rotates 90° ACW in every second step. A new symbol is added in each step and the symbols move in a set order.

479. (*3*) : The figure is rotated 90° CW in each step. Then, two elements, one element, no element, again two elements and one element change their shapes.

480. (*1*) : The symbols move in the order  in the first step. The symbol that comes to the encircled position gets replaced by a new one. In subsequent steps, the symbols move in the order obtained by rotating the above order 90° ACW in each step.

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positions to get the same sequence of symbols as in fig. (A). The first step will, therefore, be repeated.

496. (*2*) : Similar figure reappears alternately and each time it reappears, the shading moves one step CW and the portion in front of it also gets shaded.

497. (*5*) : In each step, the first symbol gets inverted and occupies second position. The second symbol goes to the fourth position. The third symbol occupies the first position and is replaced by a new one in alternate steps. The fourth symbol gets inverted and occupies the third position.

498. (*5*) : In each step, the figure rotates 135° ACW and the trapezium gets inverted. The other symbol gets replaced by a new one in alternate steps.

499. (*1*) : The figure rotates 45° CW in each step. In the first step, the shading shifts to the other triangle and in the next step, the arrow gets laterally inverted and is attached to the other triangle.

500. (*5*) : In the first step, the symbols move in the order  and the lowermost symbol is replaced by a new one. In the next step, the symbols move in the order  and the lower two symbols are replaced by new ones. The two steps are repeated alternately.

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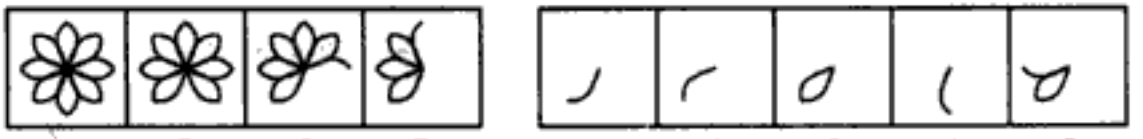
EXERCISE 1B

Directions : ***Each of the following problems, contains four Problem Figures marked A, B, C and D and five Answer Figures marked 1, 2, 3, 4 and 5. Select a figure from amongst the Answer figures which will continue the same series as given in the Problem Figures.***

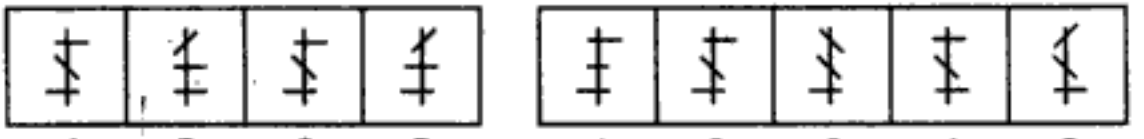
PROBLEM FIGURES ANSWER FIGURES

1.



A B C D 1 2 3 4 5

2.



A B C D 1 2 3 4 5

(S.B.I.P.O. 1992)

3.

A B C D 1 2 3 4 5

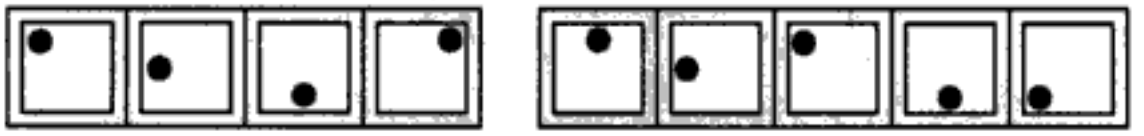
4.

A B C D 1 2 3 4 5

5.

A B C D 1 2 3 4 5

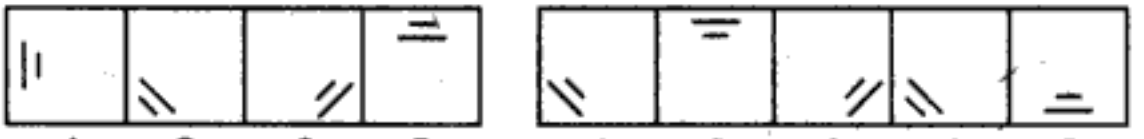
6.



A B C D 1 2 3 4 5

(B.S.R.B. 1991)

7.



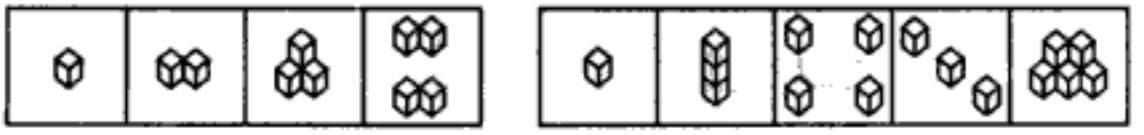
A B C D 1 2 3 4 5

8.

A B C D 1 2 3 4 5

(Bank P.O. 1990)

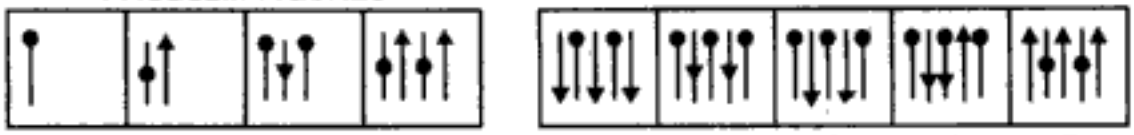
9.



A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

10.



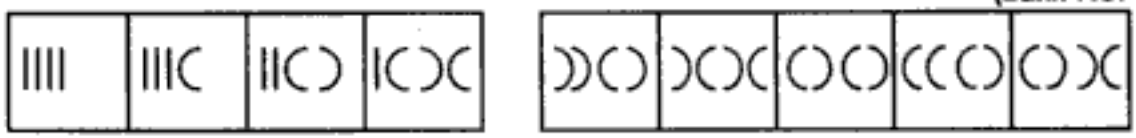
A B C D 1 2 3 4 5

11.

A B C D 1 2 3 4 5

(Bank P.O. 1991)

12.



A B C D 1 2 3 4 5

13.

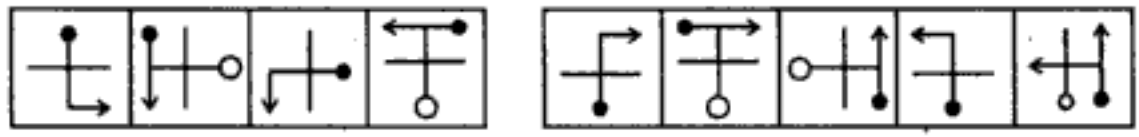
A B C D 1 2 3 4 5

(B.S.R.B. 1995)

14.

A B C D 1 2 3 4 5

15.



A B C D 1 2 3 4 5

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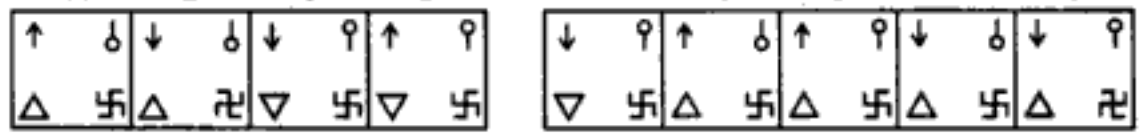

A B C D 1 2 3 4 5

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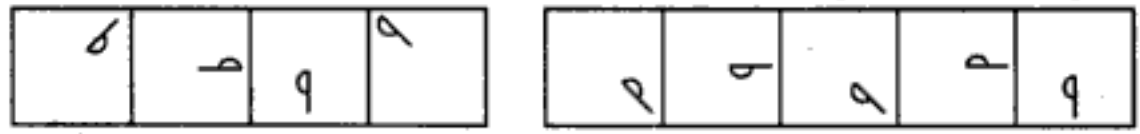

A B C D 1 2 3 4 5

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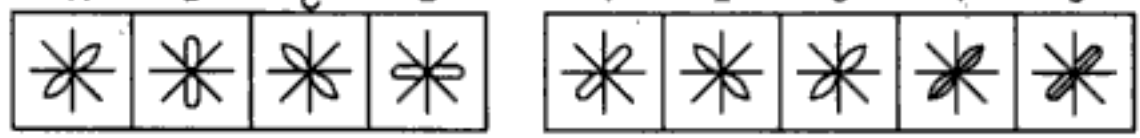


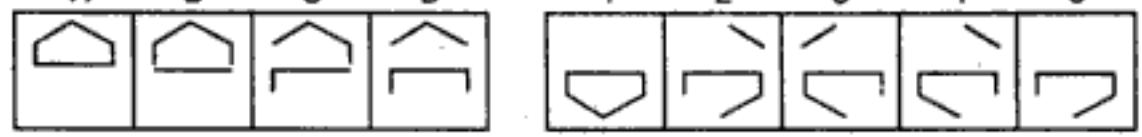
A B C D 1 2 3 4 5

(Bank P.O. 1991)

19.

A B C D 1 2 3 4 5

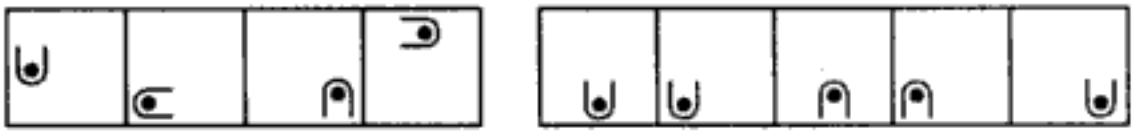
20.



A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

21.



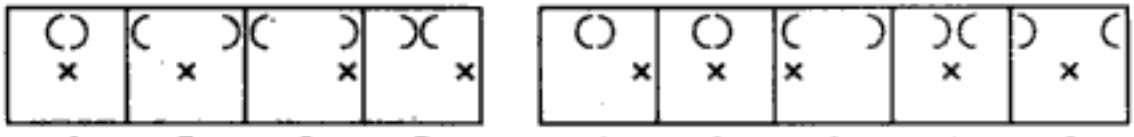
A B C D 1 2 3 4 5

22.

A B C D 1 2 3 4 5

(R.B.I. 1991)

23.



A B C D 1 2 3 4 5

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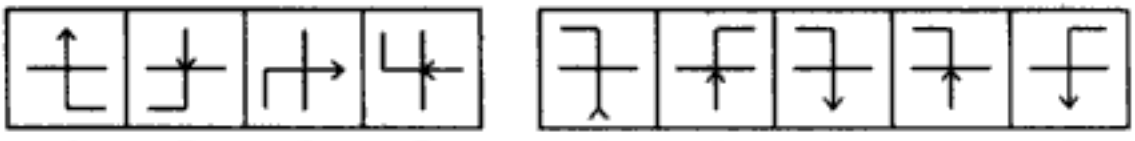

A B C D 1 2 3 4 5

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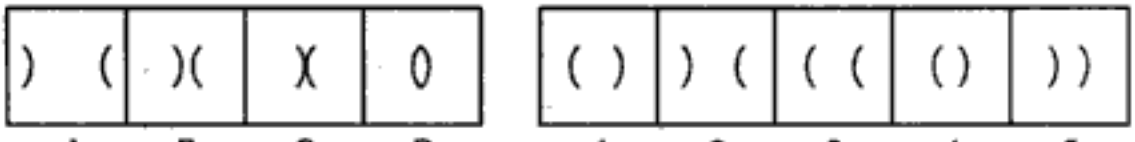


A B C D 1 2 3 4 5

(B.S.R.B. 1991)

26.

A B C D 1 2 3 4 5

(Bank P.O. 1991)

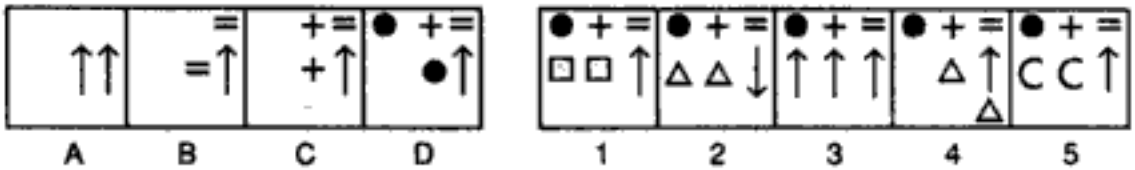
27.

A B C D 1 2 3 4 5

28.

A B C D 1 2 3 4 5

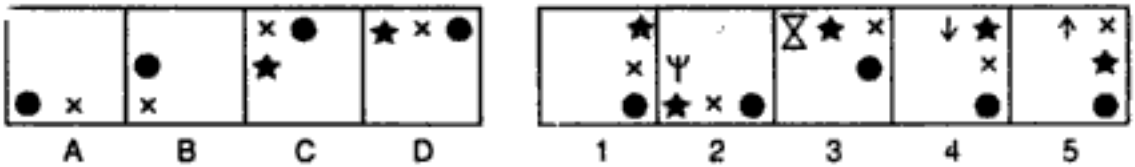
29.



A B C D 1 2 3 4 5

(Bank P.O. 1990)

30.



A B C D 1 2 3 4 5

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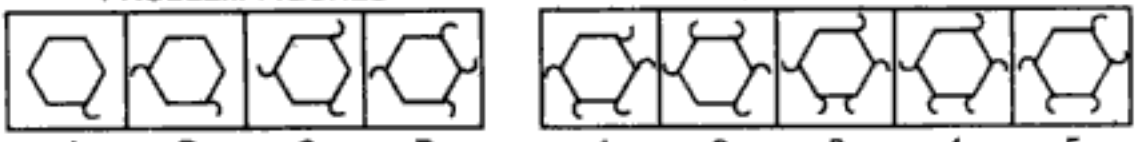
PROBLEM FIGURES ANSWER FIGURES

41.



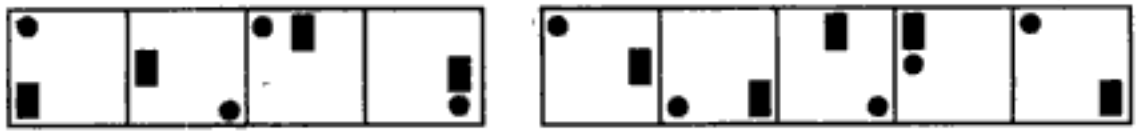
A B C D 1 2 3 4 5

42.

A B C D 1 2 3 4 5

(R.B.I. 1991)

43.



A B C D 1 2 3 4 5

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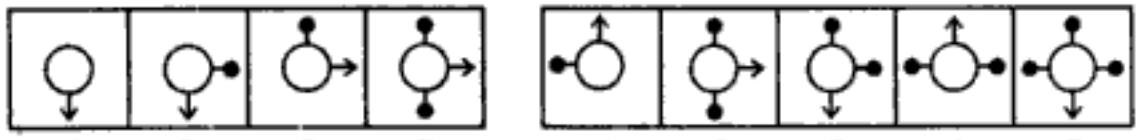
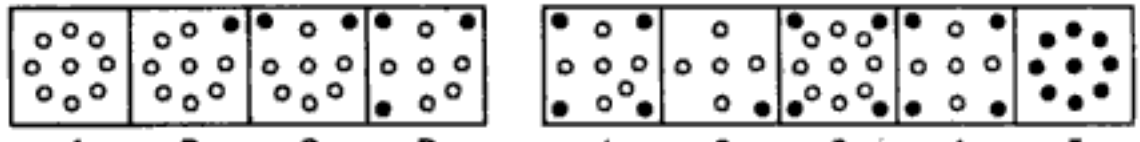


A B C D 1 2 3 4 5

45.

A B C D 1 2 3 4 5

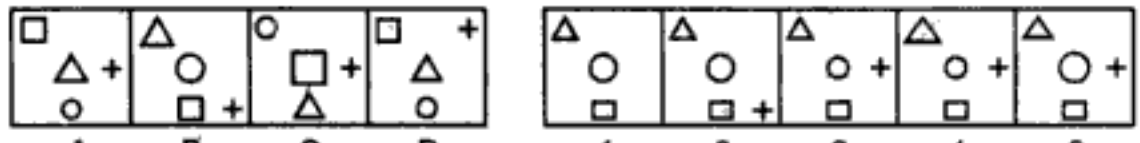
46.



A B C D 1 2 3 4 5

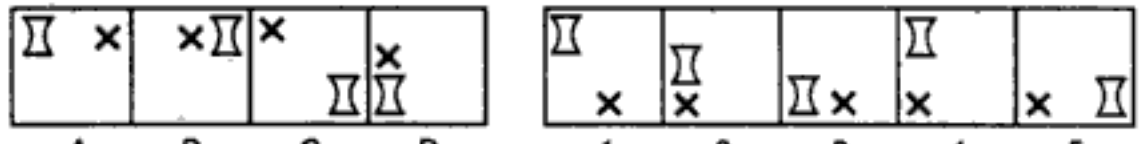
(S.B.I. P.O. 1992)

47.



A B C D 1 2 3 4 5

48.



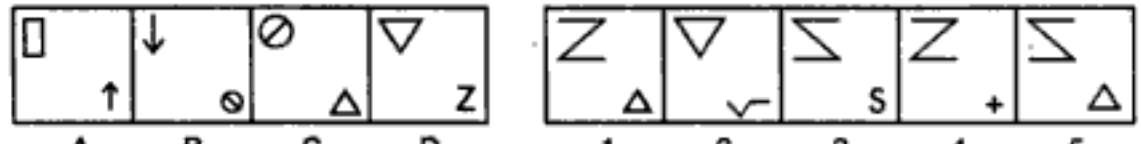
A B C D 1 2 3 4 5

(B.S.R.B. 1990)

49.

A B C D 1 2 3 4 5

50.



A B C D 1 2 3 4 5

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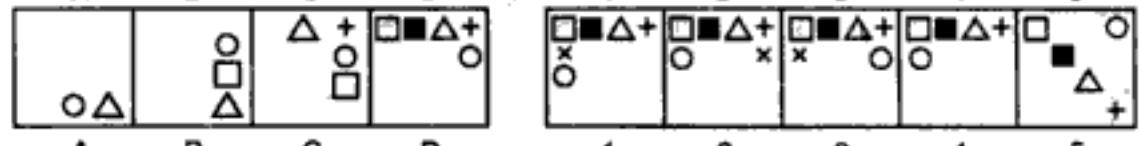
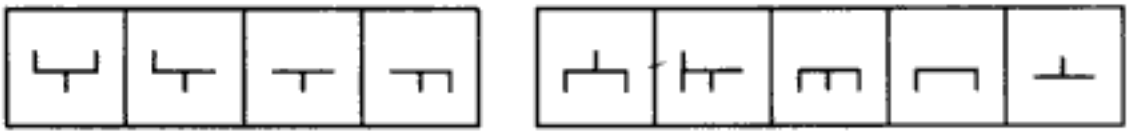


A B C D 1 2 3 4 5

PROBLEM FIGURES | ANSWER FIGURES

52.



A B C D 1 2 3 4 5

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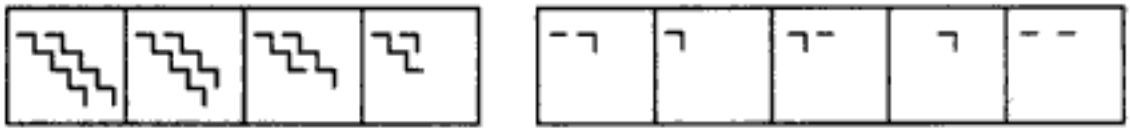


A B C D 1 2 3 4 5

54.

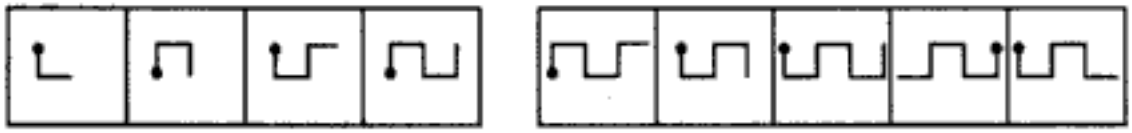
A B C D 1 2 3 4 5

(Bank P.O. 1991)

55.

A B C D 1 2 3 4 5

56.



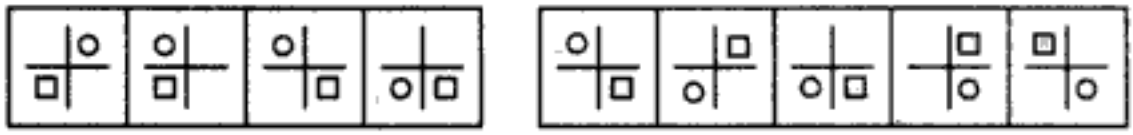
A B C D 1 2 3 4 5

57.

A B C D 1 2 3 4 5

(B.S.R.B. 1991)

58.

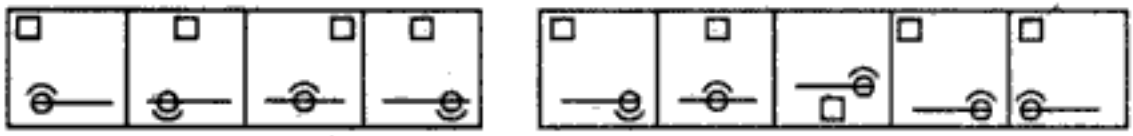


A B C D 1 2 3 4 5

59.

A B C D 1 2 3 4 5

60.



A B C D 1 2 3 4 5

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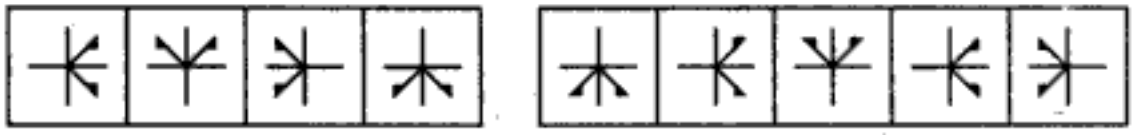
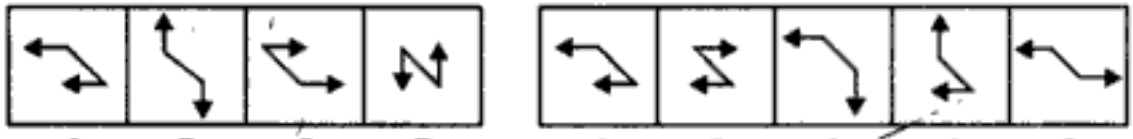


A B C D 1 2 3 4 5

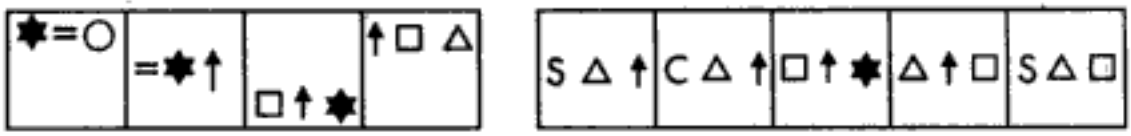
62.



A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

63.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

64.

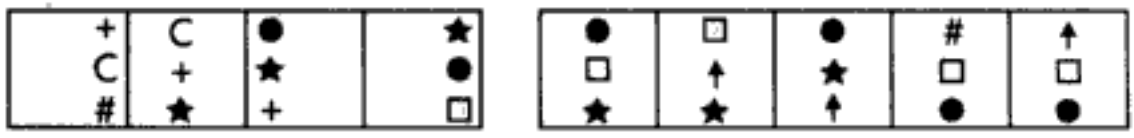
A B C D 1 2 3 4 5

(Bank P.O. 1989)

65.

A B C D 1 2 3 4 5

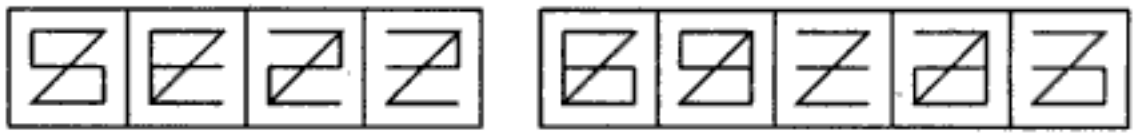
66.



A B C D 1 2 3 4 5

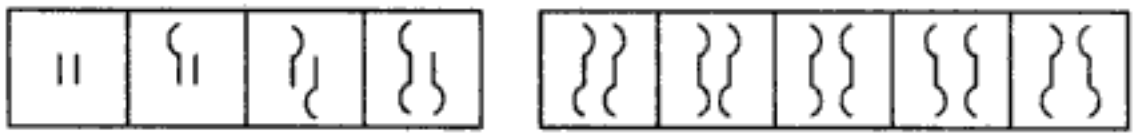
(Bank P.O. 1990)

67.



A B C D 1 2 3 4 5

68.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

69.

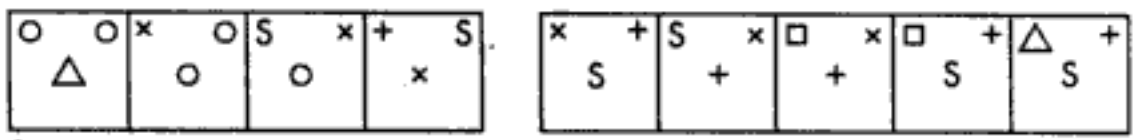
A B C D 1 2 3 4 5

70.

A B C D 1 2 3 4 5

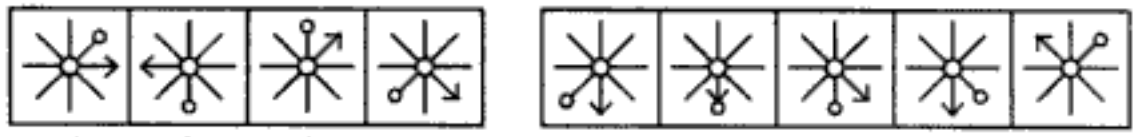
(B.S.R.B. 1990)

71.



A B C D 1 2 3 4 5

72.



A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

73.

A B C D 1 2 3 4 5

(I. Tax & Central Excise, 1989)

74.

A B C D 1 2 3 4 5

75.

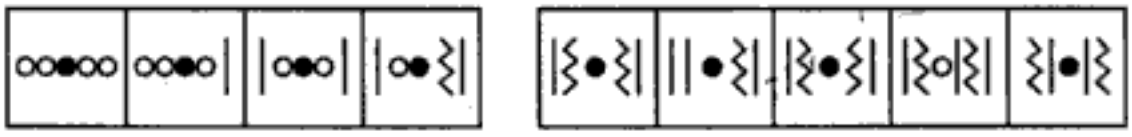
A B C D 1 2 3 4 5

(S.B.I.P.O. 1992)

76.

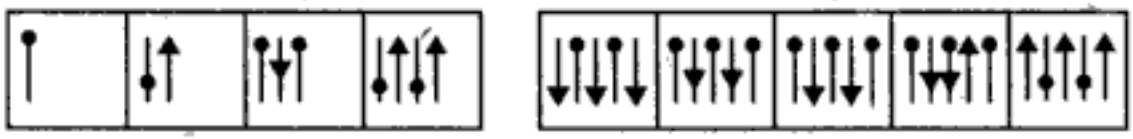
A B C D 1 2 3 4 5

77.



A B C D 1 2 3 4 5

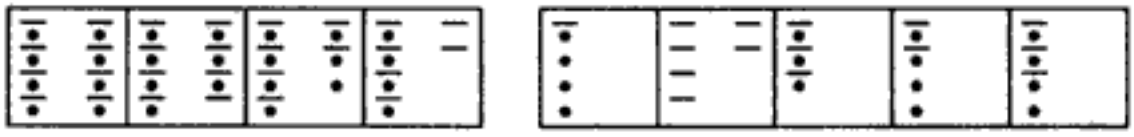
78.



A B C D 1 2 3 4 5

(B.S.R.B. 1995)

79.



A B C D 1 2 3 4 5

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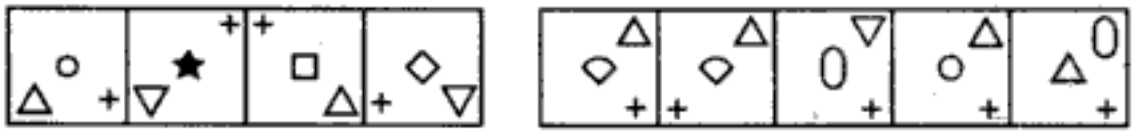
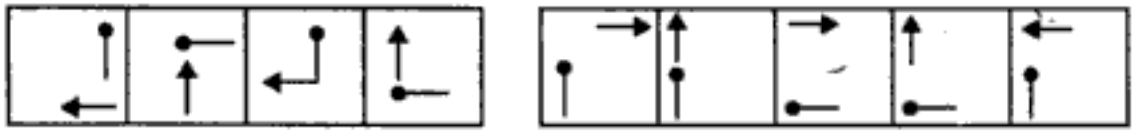


A B C D 1 2 3 4 5

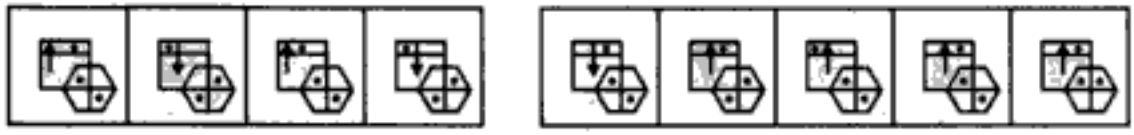
(Bank P.O. 1991)

81.



A B C D 1 2 3 4 5

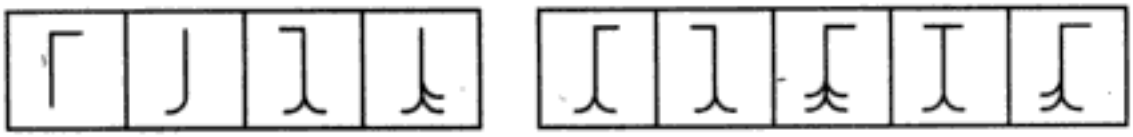
82.



A B C D 1 2 3 4 5

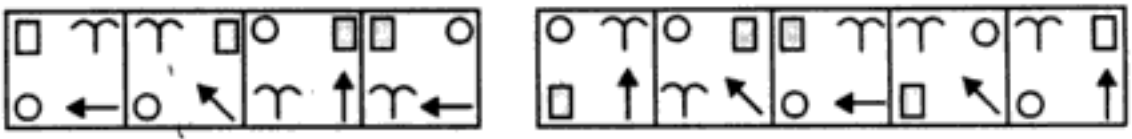
PROBLEM FIGURES ANSWER FIGURES

83.



A B C D 1 2 3 4 5

84.



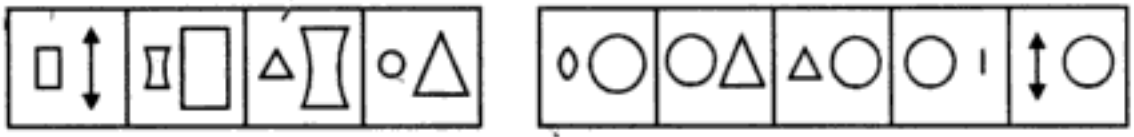
A B C D 1 2 3 4 5

(R.B.I. 1991)

85.

A B C D 1 2 3 4 5

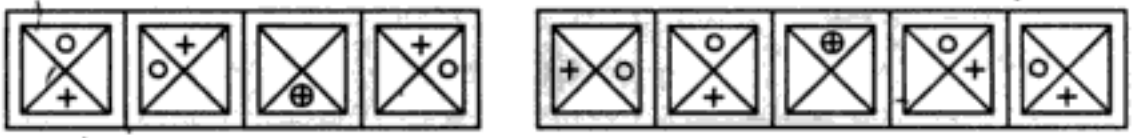
86.



A B C D 1 2 3 4 5

(B.S.R.B. 1990)

87.



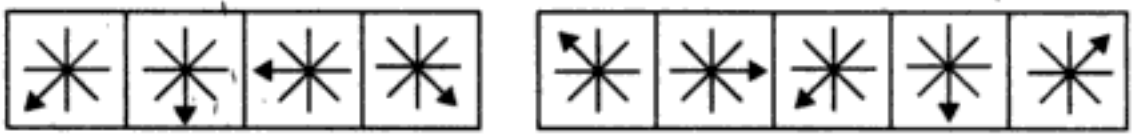
A B C D 1 2 3 4 5

88.

A B C D 1 2 3 4 5

(Bank P.O. 1991)

89.



A B C D 1 2 3 4 5

90.

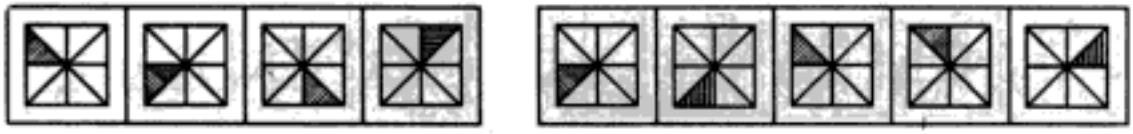
A B C D 1 2 3 4 5

91.

A B C D 1 2 3 4 5

(Hotel Management, 1991)

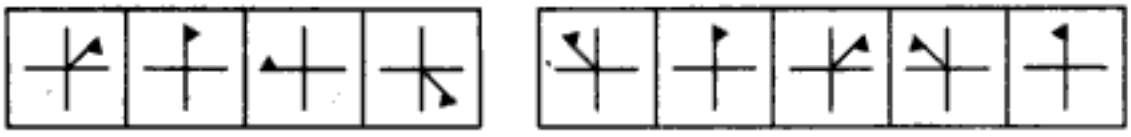
92.



A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

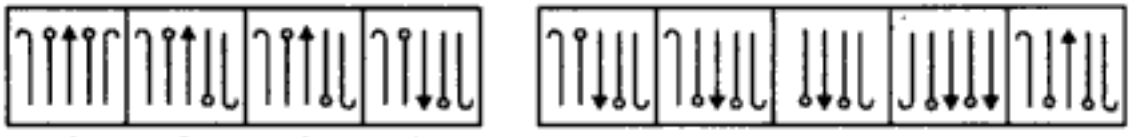
93.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

94.



A B C D 1 2 3 4 5

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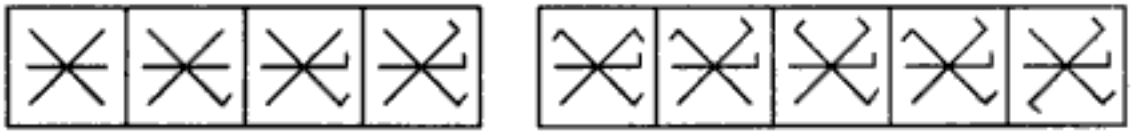
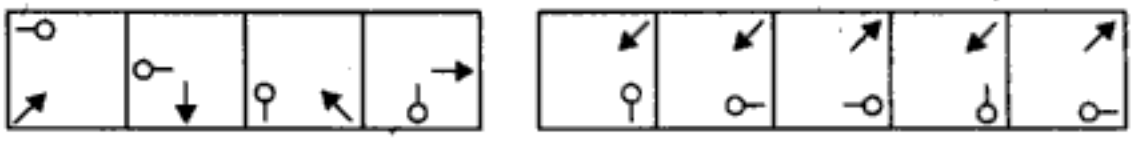


A B C D 1 2 3 4 5

(Bank P.O. 1991)

96.



A B C D 1 2 3 4 5

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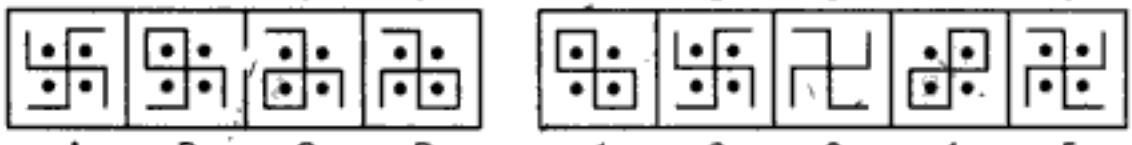
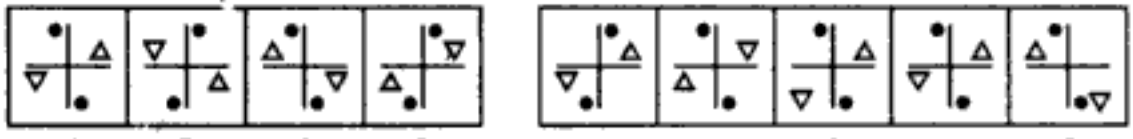


A B C D 1 2 3 4 5

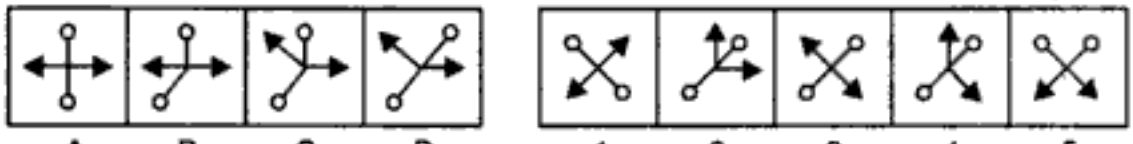
98.



A B C D 1 2 3 4 5

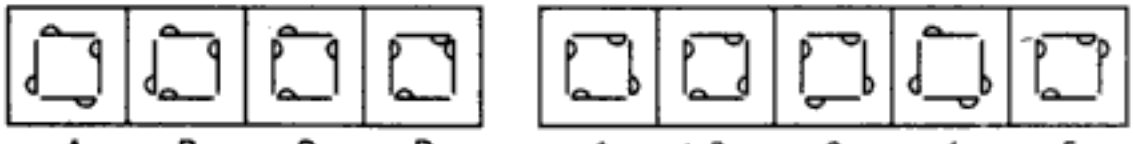
(S.B.I. P.O. 1992)

99.



A B C D 1 2 3 4 5

100.

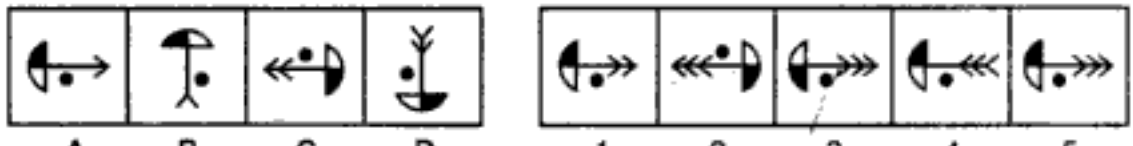


A B C D 1 2 3 4 5

101.

A B C D 1 2 3 4 5

102.



A B C D 1 2 3 4 5

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PROBLEM FIGURES ANSWER FIGURES

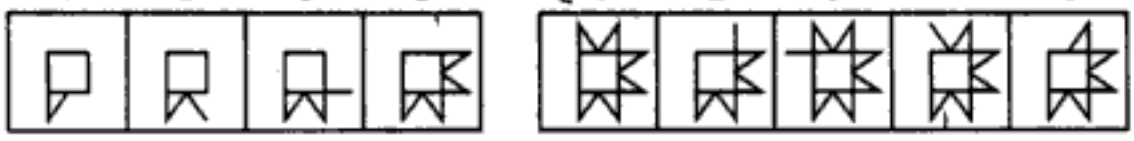
125.

A B C D 1 2 3 4 5

126.

A B C D 1 2 3 4 5

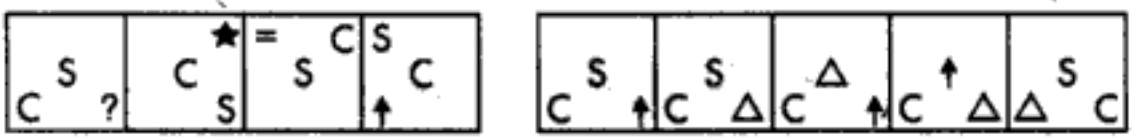
127.



A B C D 1 2 3 4 5

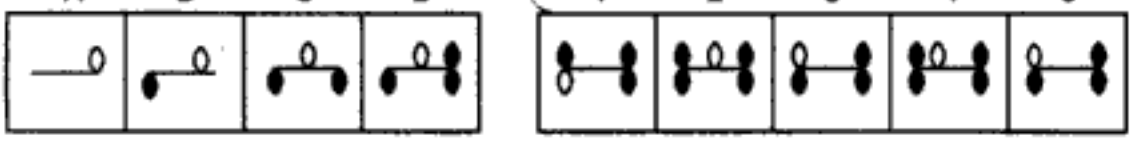
(R.B.I. 1991)

128.



A B C D 1 2 3 4 5

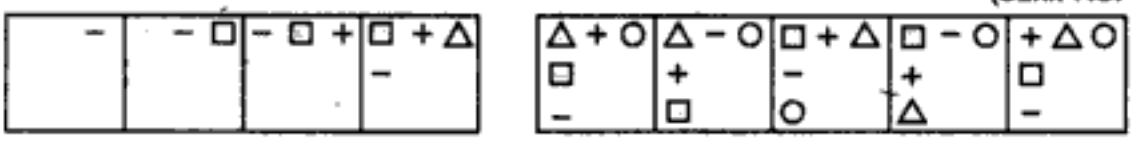
129.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

130.

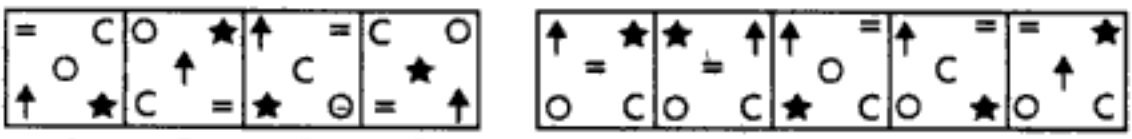


A B C D 1 2 3 4 5

131.

A B C D 1 2 3 4 5

132.



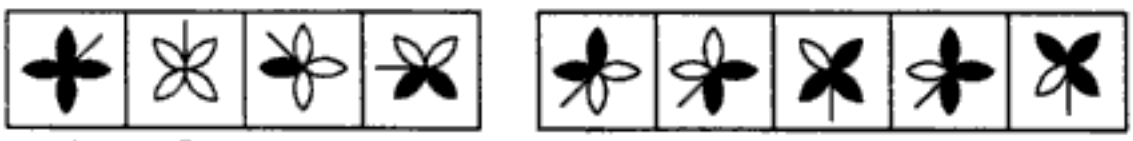
A B C D 1 2 3 4 5

(Bank P.O. 1990)

133.

A B C D 1 2 3 4 5

134.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

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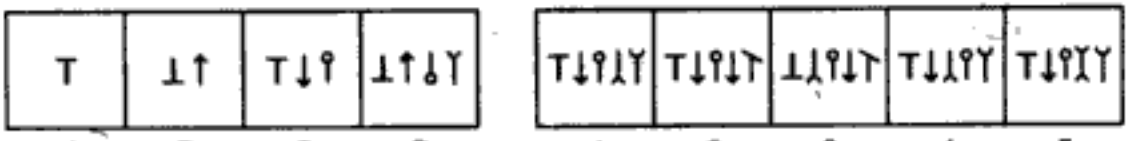
PROBLEM FIGURES ANSWER FIGURES

165.

A B C D 1 2 3 4 5

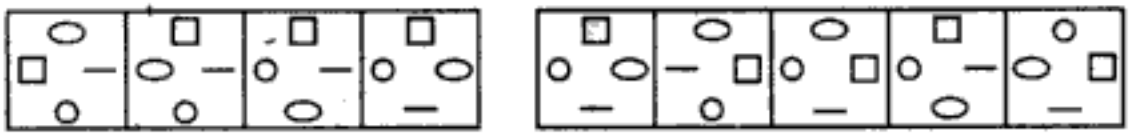
166.



A B C D 1 2 3 4 5

(Bank P.O. 1991)

167.



A B C D 1 2 3 4 5

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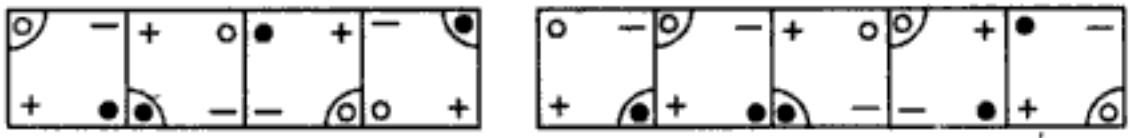
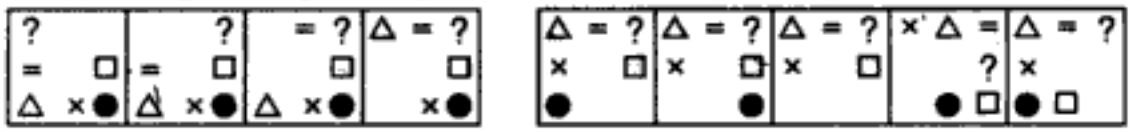


A B C D 1 2 3 4 5

169.



A B C D 1 2 3 4 5

170.

A B C D 1 2 3 4 5

171.

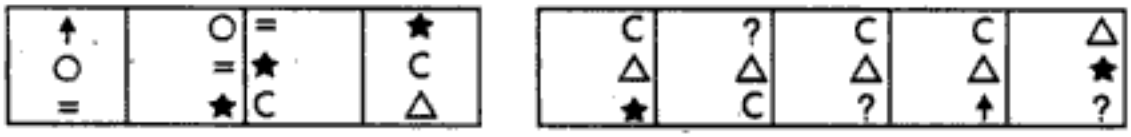
A B C D 1 2 3 4 5

(Bank P.O. 1994)

172.

A B C D 1 2 3 4 5

173.



A B C D 1 2 3 4 5

(B.S.R.B. 1995)

174.

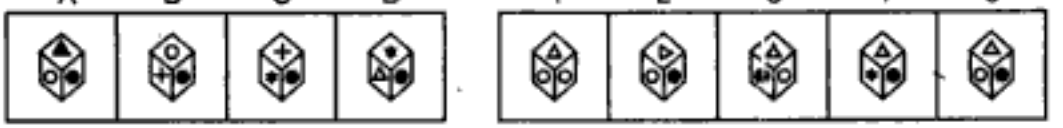
A B C D 1 2 3 4 5

PROBLEM FIGURES ANSWER FIGURES

175.

A B C D 1 2 3 4 5

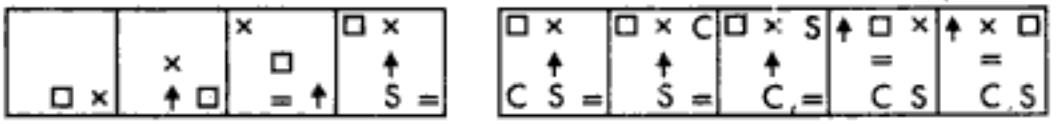
176.



A B C D 1 2 3 4 5

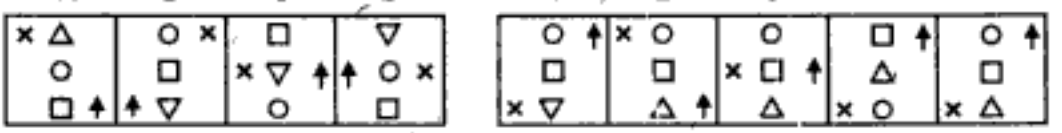
(B.S.R.B. 1990)

177.



A B C D 1 2 3 4 5

178.



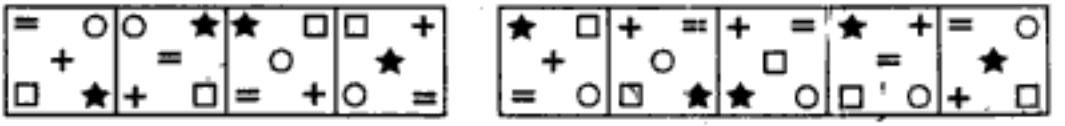
A B C D 1 2 3 4 5

(R.B.I. 1991)

179.

A B C D 1 2 3 4 5

180.



A B C D 1 2 3 4 5

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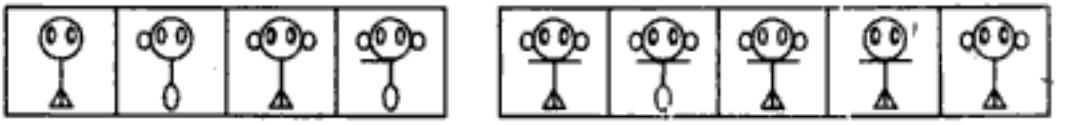


A B C D 1 2 3 4 5

(Bank P.O. 1991)

Directions : ***In each of the following questions, a figure series is given out of which the last is missing. Identify from amongst four responses which one would complete the series.***

182.

A B C D 1 2 3 4 (Asstt. Grade, 1996)

183.

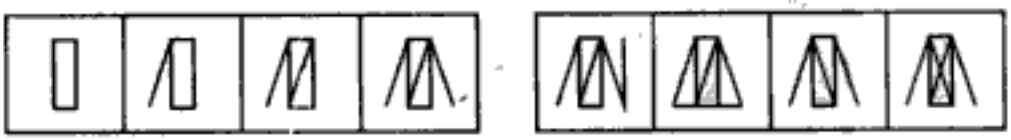
A B C D 1 2 3 4 (C.B.I. 1995)

184.

A B C D 1 2 3 4 (Railways, 1993)

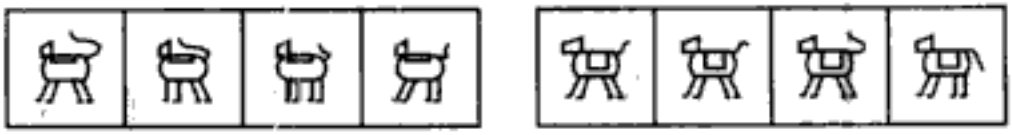
PROBLEM FIGURES ANSWER FIGURES

185.



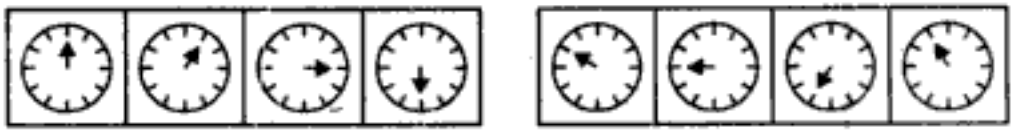
A B C D 1 2 3 4 (C.B.I. 1993)

186.



A B C D 1 2 3 4 (Hotel Management, 1991)

187.

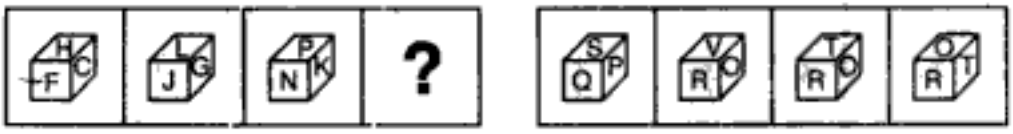


A B C D 1 2 3 4 (I. Tax, 1996)

188.

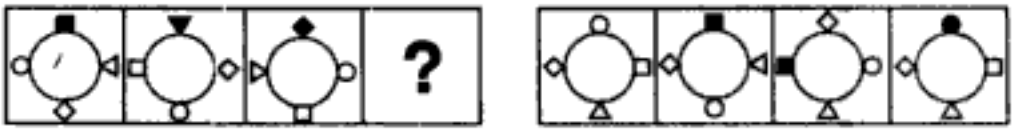
A B C D 1 2 3 4 (Railways, 1993)

189.



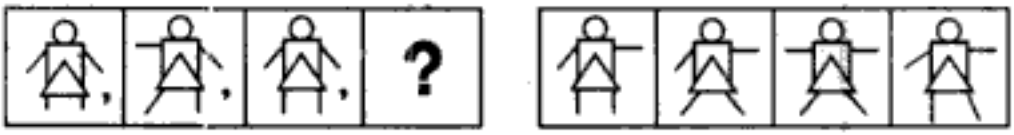
A B C D 1 2 3 4

190.



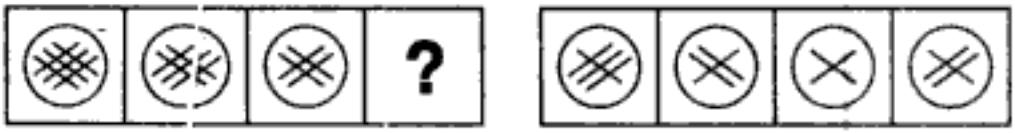
A B C D 1 2 3 4

191.



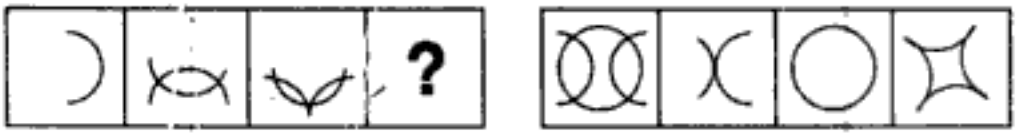
A B C D 1 2 3 4 (Asstt. Grade, 1995)

192.



A B C D 1 2 3 4 (Section Officer's, 1993)

193.



A B C D 1 2 3 4 (Central Excise, 1996)

194.

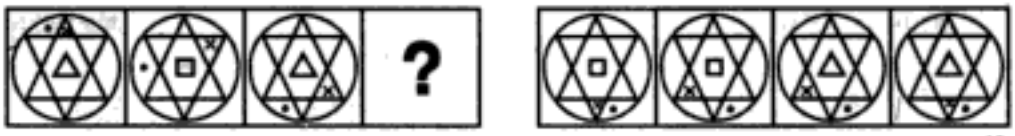
A B C D 1 2 3 4 (I. Tax, 1994)

PROBLEM FIGURES ANSWER FIGURES

195.

A B C D 1 2 3 4 **(C.B.I. 1994)**

196.

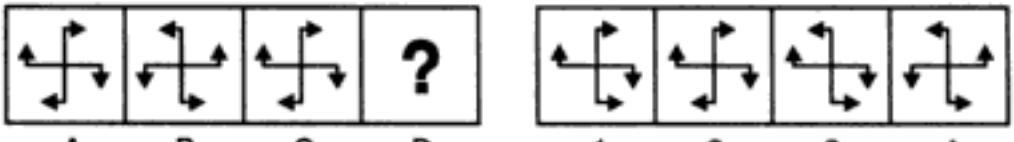


A B C D 1 2 3 4 **(Asstt. Grade, 1996)**

197.

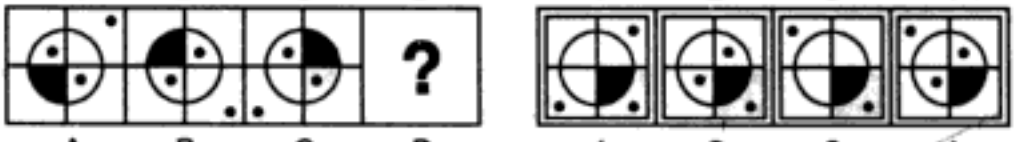
A B C D 1 2 3 4 **(C.B.I. 1993)**

198.



A B C D 1 2 3 4 **(C.B.I. 1994)**

199.



A B C D 1 2 3 4 **(Section Officers', 1993)**

200.

A B C D 1 2 3 4 **(C.B.I. 1994)**

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26. (*5*) : One line is removed from one end of the figure and one line is added to the other end of the figure, in each step.

27. (*4*) : The shading moves ACW one, two, three, ... steps sequentially.

28. (*3*) : The line inside the square rotates by 45° and so does the arrow. But each time, the arrow reverses its direction.

29. (*1*) : Two identical signs appear while one of the initially existing identical signs disappears in each step.

30. (*4*) : In one turn, the symbols move one step CW. In the next turn, they move two steps CW and a new symbol is added behind the pre-existing symbols. The process repeats.

31. (*1*) : Similar figure appears in alternate steps and each time it reappears, it gets rotated through an angle of 180°.

32. (*5*) : Lines are removed from the L.H.S. and R.H.S. alternately.

33. (*3*) : The circle moves two steps ACW while the arc rotates 90° ACW and moves two steps CW in each step.

34. (*1*) : The cross moves vertically down in one step and the '–' sign moves to the left in the alternate step.

35. (*3*) : The circle and the square move end to end in an ACW direction, while triangle moves up and down alternately.

36. (*2*) : Figure rotates 90° CW in each step. So, fig. (A) should repeat.

37. (*5*) : The exchange of positions of signs takes place, first up and down and then sideways.

38. (*5*) : The small lines at the two ends of the central vertical line first open out 45° successively and then converge again by 45° successively.

39. (*3*) : In each step, the shading moves one step CW and the dot and the arrow move one step ACW.

40. (*5*) : The similar central figures repeat in alternate steps and the trapezium resting on the side of the square boundary, moves 90° CW in each step.

41. (*4*) : Each time, all the existing arcs get reversed and a new arc is added moving two, two, one, two, ... steps clockwise sequentially.

42. (*3*) : The same figure repeats in every three steps. So, fig. (B) should repeat.

43. (*5*) : The circle moves to the diagonally opposite corner each time and the rectangle moves one, two, two, one, ... steps CW sequentially.

44. (*4*) : In one step, a pin is added and in the next step, the figure rotates 90° ACW. This goes on alternately.

45. (*1*) : In first step, a circle is added; in the second step, a triangle is added and in the third step, a square is added. The three steps are repeated sequentially.

46. (*4*) : In each step, one of the circles gets black and moves to a corner of the square boundary.

47. (*5*) : The square, triangle and circle move in the order 

The element that comes to the centre, gets enlarged and the element that comes to the upper-left corner becomes smaller. The '+' sign moves up and down vertically.

48. (*4*) : The cross moves half a side of the square boundary, in an ACW direction and other element moves to the adjacent corner CW in each step.

49. (*3*) : A line is added to the main figure in each step. The element inside the figure moves to the other side in one step and gets replaced by a new element in the next step. This goes on alternately.

50. (*3*) : The element in the lower-right corner gets inverted and enlarged and moves to the upper left corner and a new element appears in the lower-right corner in each step.

51. (*1*) : A new symbol appears as the first symbol (counting in a CW direction) and then the last symbol becomes the first symbol. This goes on, in each step.

52. (*3*) : One line is removed from the figure in each step. This goes on for two steps and then one line is added to the figure in each step and this goes on for two steps. These four steps are repeated sequentially.

53. (*4*) : Two lines from R.H.S. element, three lines from L.H.S. element, four lines from R.H.S. element, five lines from L.H.S. element, ... are removed sequentially.

54. (*5*) : One ear, one ear, one eye, one eye ..... are added sequentially. Also, the legs are spread out and brought in alternately.

55. (*4*) : In one step, a line appears dividing the existing elements into two equal parts each and in the next step, the parts of the elements separate out at the dividing line. This goes on alternately.

56. (*5*) : In each step, the fig. gets inverted and a line is added to it.

57. (*4*) : Both the star and the other fig. move half a side of the square boundary in an ACW direction in each step. The element, other than the star, gets replaced by a new element in each step.

58. (*2*) : The circle and the square move one step ACW alternately.

59. (*4*) : The outer frame is rotated 90° CW and the symbols inside it move one step each time.

60. (*4*) : The square moves horizontally from upper left corner to the upper right corner in two steps and back to the upper-left corner in two steps and so on. The circle moves horizontally from left to right in four steps. The arc appears above and below the circle alternately.

61. (*4*) : Similar figure appears alternately and each time fig. (A) reappears, it gets laterally inverted while each time fig. (B) reappears, it gets inverted

62. (*1*) : In each step, the upper arrow rotates 90° CW while the lower arrow rotates 90° ACW.

63. (*5*) : All the elements move downwards in each step. Also in one step, the first two elements interchange positions and the third is replaced by a new one and in the alternate step, the first element is replaced by a new symbol and the other two elements interchange positions.

64. (*3*) : In one step, all the circles move to the right side and a new circle is introduced inside the existing circles and in the next step all the circles move to the left. The two steps are repeated alternately.

65. (*5*) : The fig. rotates 45° ACW in each step. Also, the half pin reverses its direction in one step and in the next step, the entire bent pin reverses direction.

66. (*5*) : All the symbols move together from right to left. Also, in one step, the two upper symbols interchange positions and the third symbol gets replaced by a new symbol and in the alternate step, the two lower symbols interchange positions and the upper symbol gets replaced by a new one.

67. (*3*) : In first step, a line from the lower part of the fig. moves to the other side; in the second step, a line from the upper part moves to the other side; in the third step, a line from the lower part is lost. So in the fourth step a line from the upper part should be removed.

68. (*3*) : Arcs curved in the same direction are introduced sequentially at upper left, lower right, lower left and upper right positions. Also, in each step, all the existing arcs get rotated through 180°.

69. (*3*) : In each step, a line is added to the figure and this line starts from the point where the last added line ends.

70. (*2*) : In first step, the arrow reverses its direction and a line segment is introduced. In each subsequent step, all the existing arrows reverse their directions, an arrowhead appears at one end of the line segment (in such a way that this arrow

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120. (*2*) : In each step, all the symbols move towards the R.H.S. and once in the rightmost position, they move to the leftmost position in the next step. Also, in each step, the first, second and third symbols become the third, first and second symbols respectively and the symbol that reaches the lowermost position, gets replaced by a new one.

121. (*3*) : Triangle exchanges place with all the elements one by one, while moving ACW.

122. (*3*) : Each symbol moves only one step each time; triangle and square move vertically up and down while star and circle move along the diagonal.

123. (*4*) : All the symbols move in a set order i.e. along the figure Σ and in each step the symbol (if any) that reaches the upper-right corner, is removed.

124. (*2*) : The symbol '?' moves left and right sequentially and in each step, each one of the other three symbols moves to the adjacent side in an ACW direction.

125. (*5*) : In each step, the symbol moves 90° ACW and gets replaced by a new one. Also, half, one, one & a half, two, ... lines are added sequentially to the outer figure.

126. (*3*) : In each step, the lowermost element becomes the uppermost and the other two elements move down and the element that reaches the lowermost position, gets replaced by a new one.

127. (*1*) : One, two, three, four, ... lines are added to the figure sequentially.

128. (*2*) : In the first step, the symbols move in the order  and the symbol that reaches the cncircled corner, gets replaced by a new one. In subsequent steps, the symbols move in the order obtained by rotating the above order 90° ACW each time.

129. (*4*) : One black leaf is added to the figure in each step and the white leaf moves from right to left sequentially.

130. (*5*) : In each step, all the existing symbols move half a side of the square boundary in an ACW direction and a new symbol appears in the upper-right position.

131. (*4*) : In each step, the larger figure is removed; the smaller figure is made larger and a new small figure is introduced.

132. (*2*) : In each step, the symbols move in the order  .

133. (*3*) : The upper arrow rotates 135° CW in each step; the lower arrow rotates 45° ACW, 45° CW, 45° CW, 45° ACW, ... The middle element gets laterally inverted in each step and gets replaced by a new one in every second step.

134. (*4*) : In each step, the figure rotates 45° ACW. Also, in the first step all the leaves become white and then they become black one by one in subsequent steps.

135. (*2*) : Arc moves CW from side to side and itself turns 90° ACW while the arrow moves ACW from side to side and once indicates outside the square and in the next step it indicates inside the square.

136. (*4*) : The shading moves one, two, three, four, ... steps ACW sequentially. The dot moves one step CW, two steps ACW, three steps CW, ... sequentially.

137. (*2*) : In first step, the upper right & lower left symbols get inverted; in the second step, the other two symbols get inverted. In the third step, the upper right and lower left symbols interchange positions. So in the fourth step, the other two symbols will interchange positions.

138. (*5*) : In each step, the outer symbol becomes the inner symbol and a new symbol appears outside. Also, the two symbols move ACW sequentially.

139. (*1*) : In each step, one of the radii and one-eighth of the circle is lost and a dot is introduced.

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PROBLEM FIGURES ANSWER FIGURES

14.

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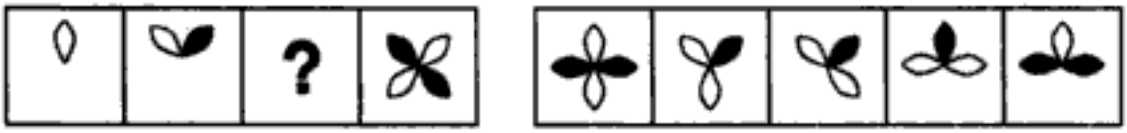
15.



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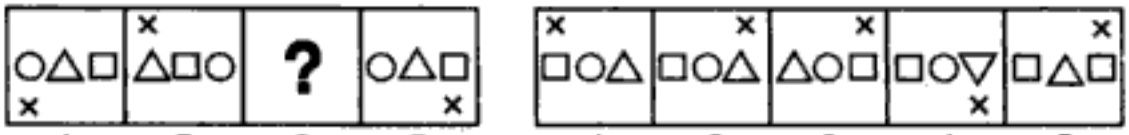

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(S.B.I. P.O. 1990)

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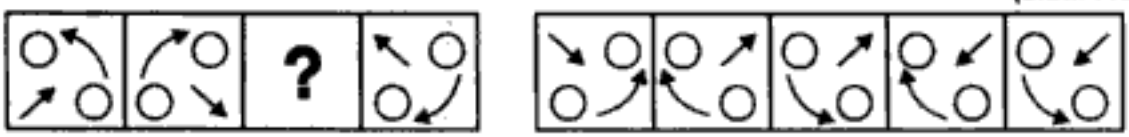

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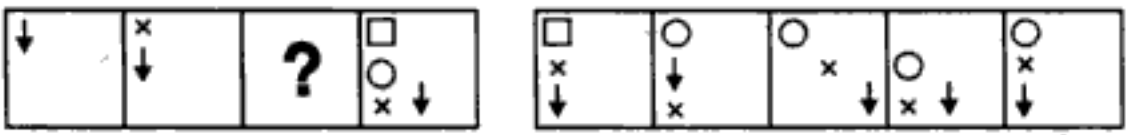

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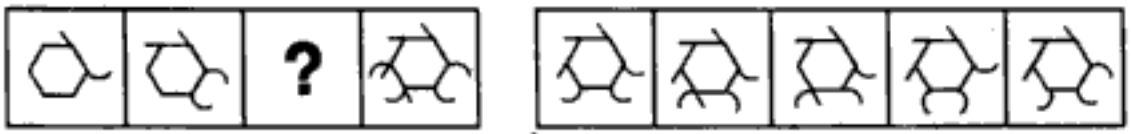

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20.

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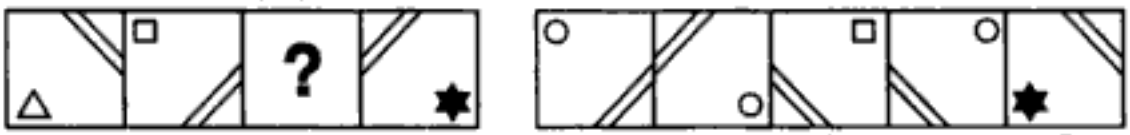

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23.

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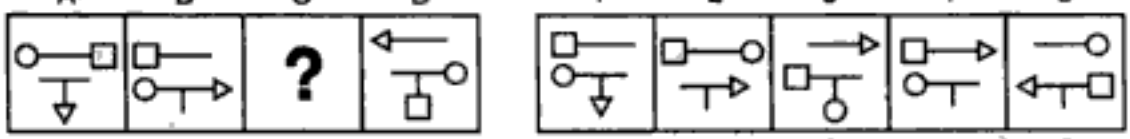

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PROBLEM FIGURES ANSWER FIGURES

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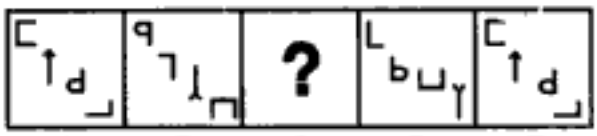

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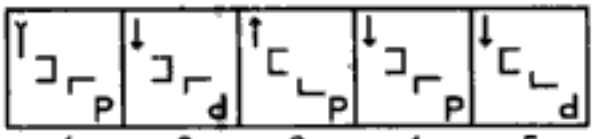
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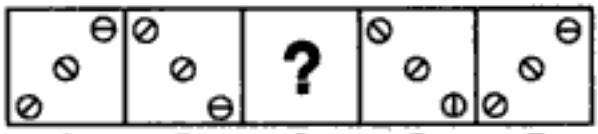

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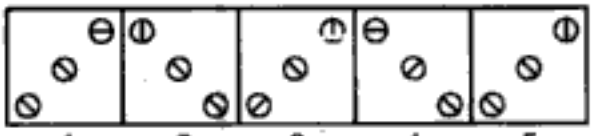
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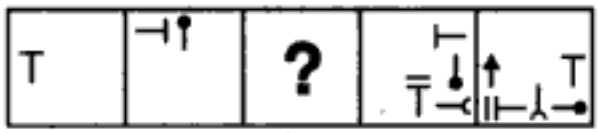

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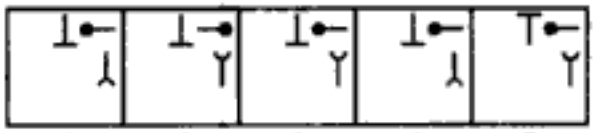
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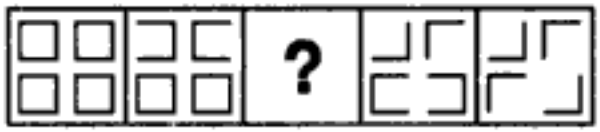

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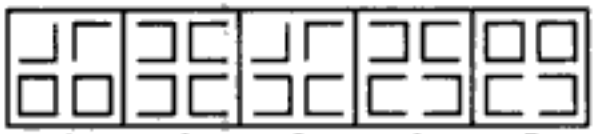
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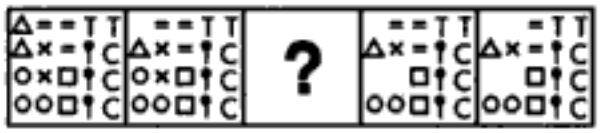

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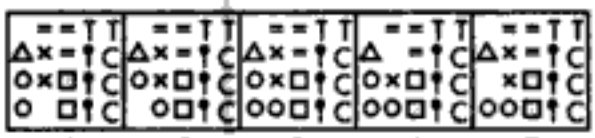
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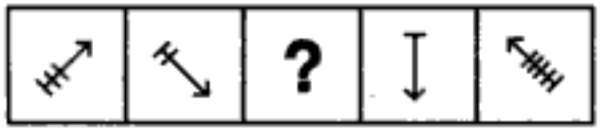

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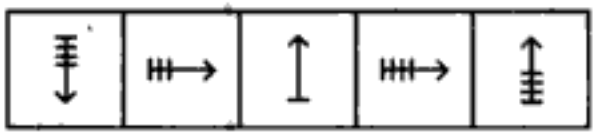
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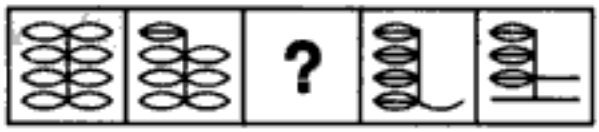

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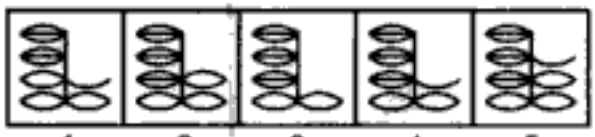
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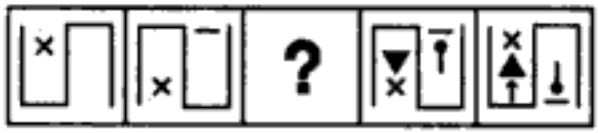

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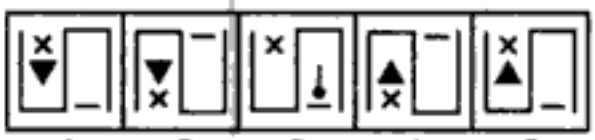
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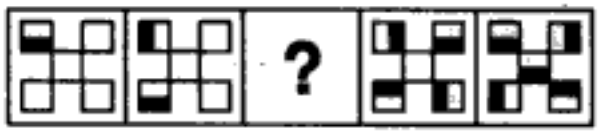

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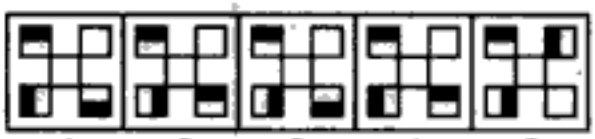
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52.


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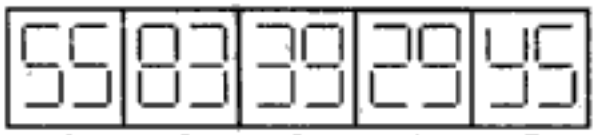
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PROBLEM FIGURES ANSWER FIGURES

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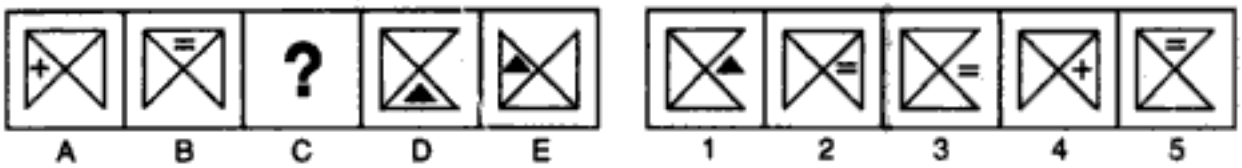

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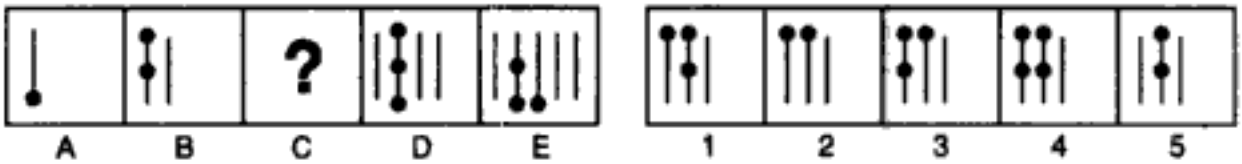

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26. (*3*) : The squares in the upper left, lower left and lower right corners rotate 90° CW while the one in the upper right corner rotates 90° ACW.

27. (*4*) : The arrow on the left exchanges its position with the other arrows one by one and both the arrows which exchange the positions reverse their directions.

28. (*5*) : One triangle is removed each time and a line is introduced inside the square. The remaining triangles are inverted.

29. (*4*) : The triangle moves from left to right and back step by step and gets inverted each time; the circle moves two steps each time and gets light and dark alternately; the square moves from left to right and back step by step.

30. (*5*) : In each step, all the pre-existing pins rotate through 180° and a new pin is added in a set order.

31. (*4*) : The black shading moves one step ACW and the curved line shading moves two steps CW in each turn.

32. (*3*) : Each of the arrows rotates 90° CW in every step.

33. (*3*) : The two pairs of symbols interchange positions in one step and a new symbol is added to each pair in the next step.

34. (*3*) : In each step, the existing straight line is replaced by a square and an extra straight line is introduced. In each step, the existing straight line is replaced by a square and an extra straight line is introduced.

35. (*1*) : In each step, the existing straight line is replaced by a square and an extra straight line is introduced.

36. (*5*) : Arcs on the R.H.S. and L.H.S. of the straight line are inverted in alternate steps.

37. (*5*) : The innermost element becomes the outermost and the outermost becomes the middle element while the innermost element is replaced by a new one.

38. (*4*) : In the first step, one of the identical symbols is lost and two identical symbols are added; in the second step, one of the added identical symbols is lost and three identical symbols are added; and the procedure goes on.

39. (*1*) : One extra octant (one-eighth part) of the circle is shaded ACW in each step. The figure rotates 45° ACW and 90° ACW alternately.

40. (*1*) : Each one of the 'U'-shaped figure rotates 90° CW in each step.

41. (*5*) : The fig. is rotated 45° ACW and 90° ACW alternately. Also, half a leaf is added CW to the figure in each step.

42. (*2*) : The symbols move ACW each time and the symbol that reaches the L.H.S. position gets replaced by a new symbol.

43. (*4*) : The first, second, third and fourth symbols from the top become fourth, third, first and second symbols respectively. The 'P'- shaped symbol gets inverted and laterally inverted alternately; the arrow gets inverted and its arrow-head also gets inverted in each step; the 'L'-shaped symbol rotates through 180° and gets inverted alternately and the 'U' shaped rotates 90° CW in each step.

44. (*5*) : The circles get arranged along the two diagonals alternately. The diameter of the uppermost circle rotates 45° ACW in each step; of the middle circle rotates 90° and that of the lowermost circle rotates 45° CW in each step.

45. (*5*) : The existing symbols move a distance equal to half the side of the bounding square and a new symbol is added in each step. The first, third, fifth, symbols rotate 90° CW in each step while the second, fourth, ... symbols rotate 90° ACW in each step.

46. (*4*) : Two lines are removed from the two upper and two lower squares alternately in a set pattern.

47. (*5*) : The number of different types of symbols is reduced by one in a sequence.

48. (*5*) : The fig. rotates 90° CW, 135° ACW, 180° CW, 225° ACW, sequentially. The number of lines at the end of the arrow decreases by 1, increases by 2, decreases by 3, ... sequentially.

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ANSWERS (EXERCISE 1D)

1. (3) : One of the convex portions of the broken circle turns concave in each step and once all are concave, these curved lines change into straight lines in a sequence. But to establish this sequence, figures (3) and (4) have to be interchanged.

2. (2) : The number of squares increases step by step and then these squares change into circles stepwise. But this series wll be established only if fig. (2) and fig. (3) are interchanged.

3. (5) : In every step the outer figure is lost, inner figure becomes larger and a new small figure is introduced inside it. In order to complete this series, no figures are required to be interchanged.

4. (5) : The horizontal coincident lines gradually diverge out and finally coincide vertically and then again diverge. The sequence is established as such.

5. (3) : One part of the circle is lost in each step. By interchanging figures (3) and (4), the series will be complete.

6. (1) : One of the circles gets dark in each step and once all of them get shaded, they get replaced stepwise by white squares. So, figures (1) and (2) need to be interchanged.

7. (5) : The number of sides of the outer figure increases by one, each time. Also, an extra small circle is added in every two steps. For this, no two figures need to be interchanged.

8. (4) : Inverted and erect triangles are added alternately and all the triangles move CW from side to side. For this, figures (4) and (5) have to be interchanged.

9. (1) : One of the arms of the figure changes into an arrow in each step and once all of them change into arrow they get reversed in direction stepwise. For this, figures (1) and (2) need to be interchanged.

10. (3) : Straight lines and curved arrows are added alternately. Figures (3) and (4) have to be inter-changed to complete this series.

11. (4) : The dancer initially stands with his arms out stretched and legs at rest. He then bends his left arm and stretches out his left leg. In next step, he bends his other arm and subsequently, comes to his initial position. This procedure is then repeated with other arm and leg. To complete this series figures (4) and (5) have to be interchanged.

12. (1) : In one step, a dotted line is formed in the existing figure and in the next step, the figure divides at the dotted line and the smaller of the two figures is lost. To establish this series, figures (1) and (4) have to be interchanged.

13. (2) : If figures (2) and (3) are interchanged, then a series would be established, in which, a rectangle appears in a circle in one step and then the circle appears in the rectangle in the second step. In the next step again the rectangle appears in the circle and the figure is rotated 45° CW.

14. (2) : One side of the hexagon is lost every time and plus and minus signs are added alternately. So, figures (2) and (5) need to be interchanged.

15. (1) : In one step, a triangle is converted into the other symbol and in the next step a new triangle is added. This series will be established if figures (1) and (2) are interchanged.

16. (3) : The gymnast initially stands with arms outstretched and legs at rest. In subsequent step, one of his arms get raised up and a leg stretches out. He then bends over the ground, himself supported upon one arm and one leg. Then, he leaves the support of the leg and balances himself on one hand only. Lastly, he rotates his body to display a hand stand. In order to establish this series, figures (3) and (4) have to be interchanged.

17. (5) : Two bent pins are added to the left in one step and then one of these two gets on to the right side in the next step. This procedure is repeated. No two figures need to be interchanged to complete the series.

18. (4) : The number of sides of the figure and the number of plus signs increases by one in each step. So, figures (4) and (5) need to be interchanged.

19. (2) : Existing symbols move one step ACW and a new symbol occurs at the top right corner. To complete this series, figures (2) and (5) have to be interchanged.

20. (1) : One arrow gets reversed in each step. To complete this series, figures (1) and (4) have to be interchanged.

21. (4) : Initially, the cyclist has both his body and head bent down. He then raises his head and subsequently his body. This procedure is repeated. Figures (4) and (5) when interchanged will complete this series.

22. (1) : Dots and lines are added alternately. To establish this series, figures (1) and (2) have to interchanged.

23. (5) : 1, 2, 3, 4 and 5 crosses are replaced sequentially by similar figures. The sequence is established without interchange of positions.

24. (2) : The edges of the hat undergo alternate change. One line is added to the top every time. Eyes get light and dark alternately and nose changes into dot and line alternately. Collar changes alternately. The sequence will be established if figures (2) and (4) are interchanged.

25. (3) : In one step, the signs interchange positions with those present opposite to them and in the next step, the signs move one step CW. These two steps occur alternately and the series would be established if figures (3) and (4) are interchanged.

26. (2) : The lines turn to the other side of the square i.e. those inside, turn outside and those outside, turn inwards and this change takes place in the increasing order of the number of lines. When all the lines have turned to the other side, then all the lines get curled. This series will be established by interchanging figures (2) and (5).

27. (3) : One line is removed from the figure after every two steps. So, figures (3) and (4) have to be interchanged.

28. (2) : The pot rotates 45° CW each time. If the pots in all the figures be assumed to be erect then the lines in the strip reverse their directions in each step and the dot moves from one end to the other appearing above and below the strip alternately. To establish this series, figures (2) and (4) have to be interchanged.

29. (1) : L-shaped lines and curved lines are lost alternately. This series will be established if figures (1) and (3) are interchanged.

30. (4) : The pin exchanges positions with each one of the arrows alternately and in each step both the pin and the arrow (with which it has exchanged place) get inverted. For this series to be completely established, figures (4) and (5) need to be interchanged.

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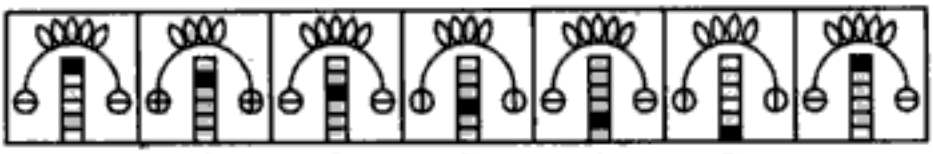

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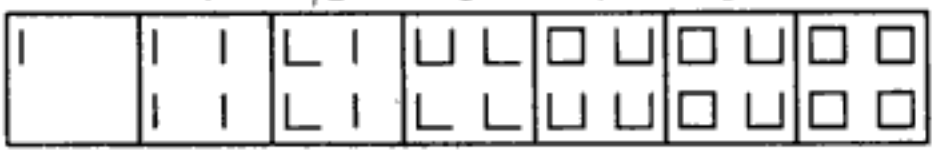

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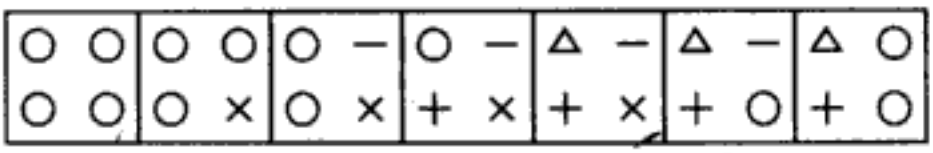

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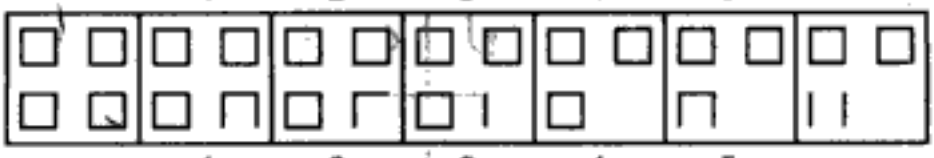

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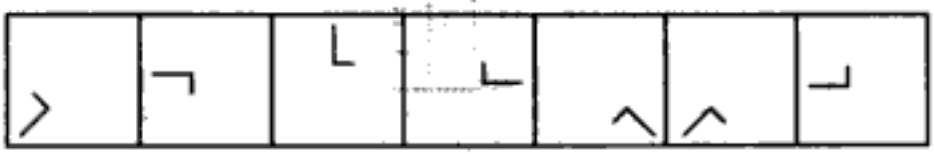

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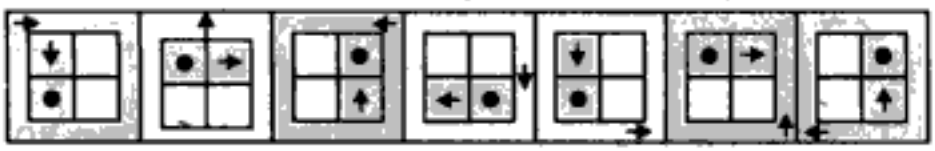
(Bank P.O. 1991)

11.



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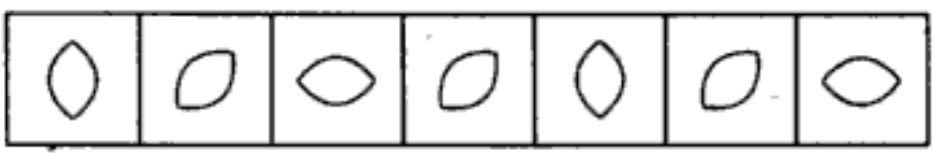

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(S.B.I.P.O. 1992)

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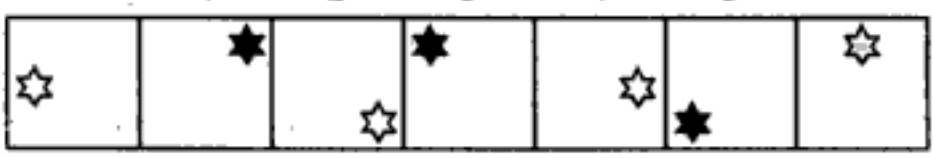

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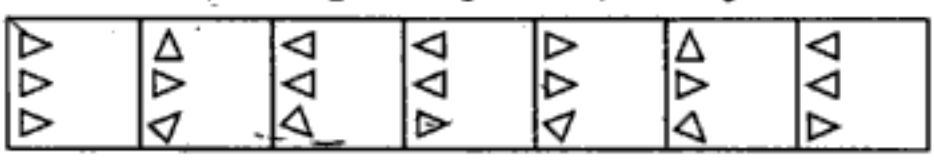

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(Bank P.O. 1994)

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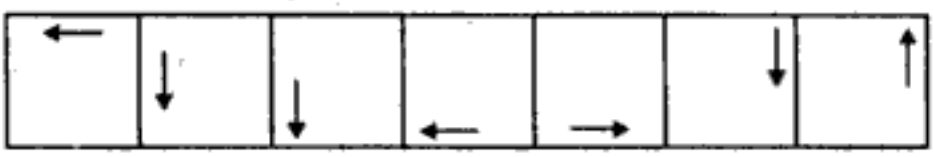

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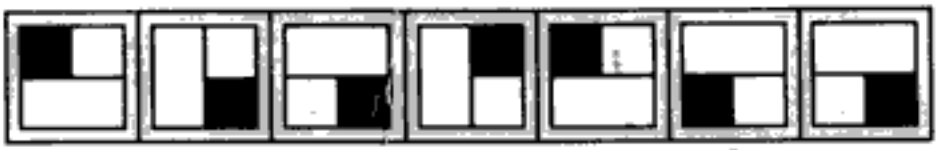

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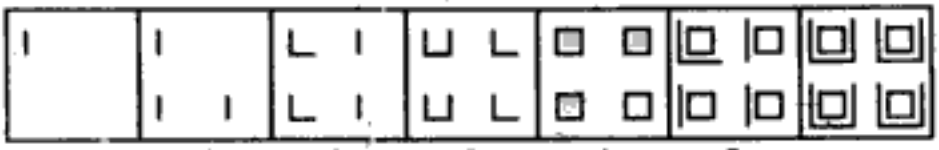

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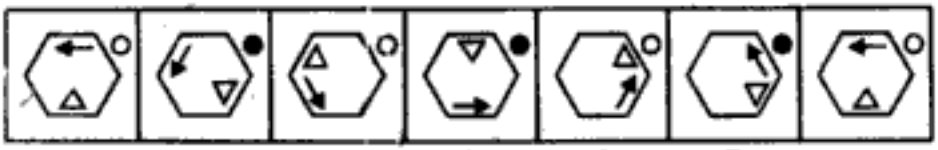

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(Bank P.O. 1992)

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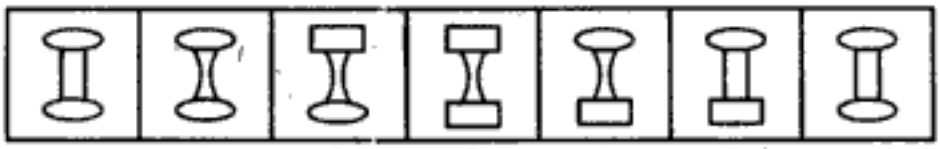

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(Bank P.O. 1991)

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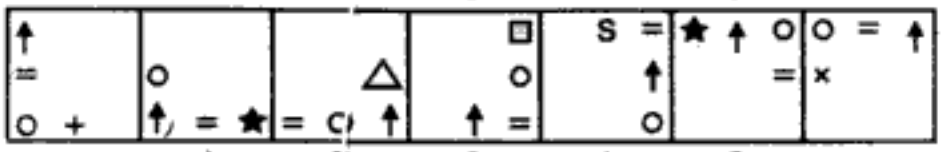

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(S.B.I.P.O. 1992)

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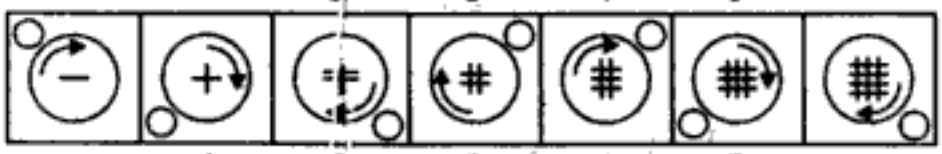

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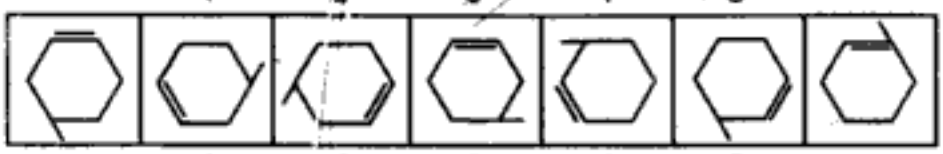

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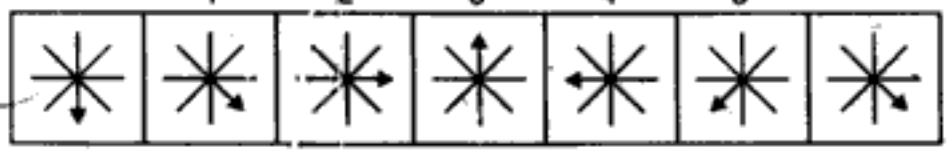

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(S.B.I.P.O. 1991)

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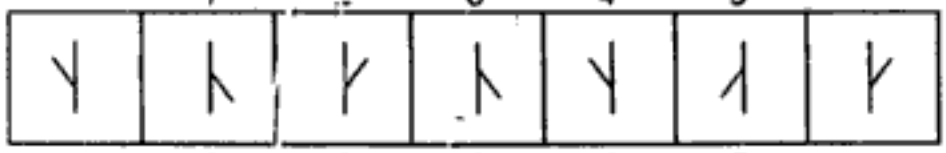

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18. (1) : One arrow is added in a corner in a clockwise direction each time and also the direction of all the arrows changes each time. In fig. (1), the direction of arrows should be opposite.

19. (4): The figure rotates 135° ACW in first, second, fourth, fifth. ..... step and 45° CW in third, sixth, ... step. The arrow reverses its direction in every second step.

20. (4) : The lines rotate 90° CW in each step and the number of lines increases by two and decreases by one alternately. In fig. (4), the number of lines should be three.

21. (1) : The arrow moves anticlockwise one and two steps alternately (each step equal to one-third of side of square) and reverses its direction each time. In fig. (1), the direction of the arrow should be reverse.

22. (5) : Sides of the inner figure and the outer figure get curved alternately. But in fig. (5), one side each of the outer and inner figure get curved.

23. (2) : The arrow rotates clockwise through 45° and 90° alternately. The central line in the arrow occurs alternately. The other figure rotates 90° ACW in each step and moves clockwise one step and two steps alternately. In fig (2), the C-shaped figure should have been facing in the opposite direction.

24. (3) : In each step, the figure rotates 45° anticlockwise and half a leaf is added in a clockwise direction. In fig. (3), however, the half part of a new leaf is added in an anticlockwise direction.

25. (1) : In each step, the larger figure is reduced in size and remains at the same position; the smaller figure is lost and a new large figure appears one step ahead of the other figure , in a clockwise direction. In fig. (1), there should be a small 'S' in place of the small circle.

26. (3) : The arc gets inverted in each step and moves along the line from the bottom to the top position, from the top to the middle and from the middle to the bottom position. Thus, in fig. (3), the arc should be inverted.

27. (1) : The black portion moves one step anticlockwise and the line rotates 90° anticlockwise each time. In fig. (1), the dark portion should be present in the lower left side of the square.

28. (4) : Two, three, four, five, six and seven lines are added sequentially to get subsequent figures in each step. Fig. (4) should have one line less.

29. (1) : The arrow moves one step anticlockwise and the triangle moves one step clockwise each time. The circle gets black and white alternately. In fig.(1), the position of the triangle should be two spaces backwards.

30. (5) : The figure moves anticlockwise two steps and one step alternately and also gets rotated 90° CW in each step. In fig. (5), the figure should face in the opposite direction.

31. (5) : In the series, first the lines connecting the two ovals are changed to curved lines and then the two ovals change into rectangles one by one. Further, the original figure is obtained by following the same steps but in reverse order. So, in fig. (5), the connecting lines should still have been curved and the rectangle must have changed into an oval.

32. (1) : The arrow reverses its direction, moves to the bottom position , again reverses direction, moves to the middle position and finally again reverses direction and moves to the top in subsequent steps. The line with the dot moves sequentially from top to the middle, middle to the bottom and bottom to the top position. The line with a bar at its head follows the same pattern as the arrow with the difference that it reverses direction after moving to the new position. So, in fig. (1), the middle figure should face in the opposite direction.

33. (5) : Counting in anticlockwise direction, the third symbol moves one step CW and the first and the second symbols come to the second and the third positions respectively. The fourth symbol is replaced by a new one.
So, in fig, (5), 'S' should be replaced by a new symbol, not the star.

34. (4) : The arrow rotates clockwise; the vertical and horizontal lines are added alternately. The smaller circle moves from corner to corner in an anticlockwise direction. In fig. (4), the smaller circle should be in the top left corner.

35. (1) : The extended side of the hexagon moves anticlockwise two steps and three steps alternately. The other line moves two steps anticlockwise each time and gets inside and outside the hexagon after every second step. So, in fig. (1), the line should be outside the hexagon.

36. (2): The arrow moves anticlockwise, one step and two steps alternately. In fig. (2), it should be one step ahead.

37. (1) : The figure gets inverted in one step and rotates through 180° in the next step. So, fig. (1) should be the same as fig.(5).

38. (3) : In each step, a new arrow is added in the same direction as the one just behind it and the pre-existing arrows reverse their direction. So, in fig. (3), the direction of the new arrow should be opposite.

39. (5) : The player raises one of his legs and an arm in a sequence and then bends down. He then repeats his gesture with the other leg and the other arm. The ball simultaneously rises from the right side and moves on to the left side. In fig. (5) the ball should be on the left side and should descend down from its position in fig.(4).

40. (5) : The left most arrow changes its position with each one of the arrows on the right in a sequence, the other one follows the same sequence. In fig. (5), the second arrow should have been the third one, the third arrow should have been the fourth one and the fourth arrow should have been the second one.

41. (5) : The number of lines is two and three alternately. The lines rotate 90° CW each time and move anticlockwise one step and two steps alternately. So, in fig. (5), the three vertical lines should have been placed in the upper left corner.

42. (2) : The arrow gets laterally inverted in one step and in the next step, it gets inverted w.r.t. the horizontal and a new arrow is added facing in the opposite direction, both w.r.t. the horizontal and the vertical. The process is repeated. So, in fig. (2), the correct position of the lower arrow would be '↳'.

43. (2) : The symbols move in a set pattern. Each time a pre-existing symbol is replaced by a new one first at the upper left corner, then at the upper right corner, then at the lower right corner,then at the lower left corner and so on. Thus, in fig. (2), the symbol at the upper right corner i.e. the triangle should be replaced by a new one.

44. (2) : The arrow head moves clockwise one step and two steps alternately. So, in fig. (2), the arrow should be one step ahead.

45. (5) : The curved line shanding moves one step anticlockwise and the dark shading moves one step clockwise in each turn. So, the dark shading in fig. (5) should have been two step up.

46. (3) : The triangle moves ACW and a line is added on its either sides alternately.

47. (3) : In one step, the symbols at the opposite corners interchange positions. In the next step, the symbols at the adjacent corners along the vertical sides interchange positions. The fifth symbol comes to lie in the upper middle and the lower middle positions alternately and is replaced by a new one in each step. So, in fig. (3), 'C' should be replaced by a new symbol.

48. (3) : Two and one cups are added alternately in a clockwise direction. In fig. (3), there should be one more cup.

49. (5) : The two symbols at the bottom, in the middle and at the top interchange positions in subsequent steps. Each of the other four symbols moves one step anticlockwise. So, in fig. (5), the '×' and '=' signs should interchange positions.

50. (5) : In each step, the symbols move one step anticlockwise along the sides of the square. Also, the symbols outside and inside the square interchange positions and

the one that comes outside the square gets replaced by a new one. So, in fig. (5), the square should be replaced by a triangle.

51. (4) : In each step, the white figure becomes black and moves to the other corner and the black figure is replaced by a new white figure. In fig. (4), the dark figure should be a star.

52. (1) : One of the squares rotates 90° CW in each step and this rotation of squares takes place sequentially in a clockwise direction. In fig. (1), instead of the square in the top left corner, the one in the lower left corner should have been rotated.

53. (4) : The line along which the symbols lie rotates 45° ACW in each step. The last symbol becomes the first, the first one becomes the second, the second one becomes the third and the third one comes to the fourth position and is replaced by a new one. So, in fig. (4), the star should be replaced by a new symbol.

54. (4) : All the symbols move to the adjacent corner in an anticlockwise direction and in every second step, the symbol that reaches the lower right corner gets replaced by a new one. In fig. (4), the symbol 'C' should be replaced by a new symbol i.e. triangle.

55. (3) : The leaf, the pin and the arrow rotate 45° CW one by one. In fig. (3), the leaf should not have turned 45° clockwise.

56. (5) : In order to row the boat, the oarsman bends forward in two steps and then returns to the initial position in two subsequent steps. In the same way he Bends backwards the left side of the figure. However, in fig. (5) the oar has turned towards the right.

57. (5) : In the first step, the symbols move in the order  . The symbols in fig. (2) move in the order obtained by rotating this order 90° ACW to give fig. (3). Similar is the case with figs. (4) and (5). According to this order, fig. (5) is incorrect.

58. (4) : The whole figure gets laterally inverted in each step. The symbol along the right or left boundary of the square interchange positions and the upper symbol gets replaced by a new one. The other two symbols also interchange positions in each step.

59. (4) : In first step, the symbols move in the order  . In the second step, the symbols move in the order  and this goes on in an anticlockwise direction. In fig. (4), the positions of the cross and the arrow should be the same as that in fig. (3).

60. (3) : All the symbols move ACW in each step and the symbols in the upper left and the upper right corners get replaced by new ones alternately. In fig. (3), the star should get replaced by a new symbol i.e. rectangle and the circle should remain unaffected.

2. ANALOGY

'Analogy' implies 'Corresponding'. In the problems based on analogy, a pair of related figures is provided and a similar relationship is to be established between two other figures, by selecting one or both of them from a set of alternatives.

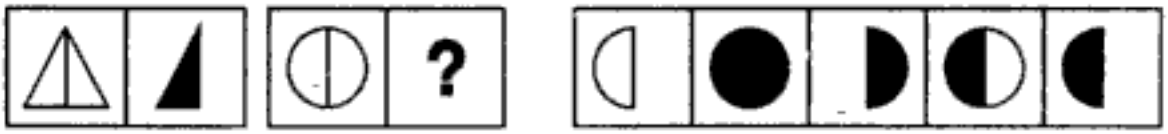
The various types of problems upon Analogy have been discussed with examples and exercises in this chapter.

TYPE 1 : CHOOSING ONE ELEMENT OF A SIMILARLY RELATED PAIR

This type of Analogy involves problems consisting of four figures marked A, B, C and D forming the Problem Set and five other figures marked 1, 2, 3, 4 and 5 forming the Answer Set. The figures A and B of the Problem set are related in a particular manner and a similar relationship is to be established between figures C and D by choosing a figure from the Answer set which would replace the question mark in fig. (D).

Directions : ***Figures A and B are related in a particular manner. Establish the same relationship between figures C and D by choosing a figure from amongst the five alternatives, which would replace the question mark in fig. (D).***

Example 1 : PROBLEM FIGURES **ANSWER FIGURES**



A B C D 1 2 3 4 5

Solution : Clearly, the right half of the figure is lost and the remaining portion is shaded to get fig. (B) from fig. (A).
Similar relationship will give fig. (5) from fig. (C).
Hence fig. (5) is the answer.

Example 2 : PROBLEM FIGURES **ANSWER FIGURES**

A B C D 1 2 3 4 5

Solution : Fig. (B) is the water image of fig. (A). Similarly, the water image of fig. (C) is fig. (2).
Hence, the answer is (2).

Example 3 : PROBLEM FIGURES **ANSWER FIGURES**

EXERCISE 2A

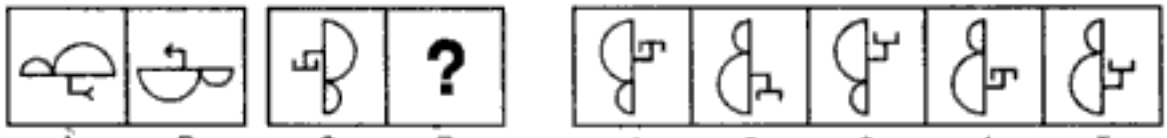
Directions : ***Each of the following questions consists of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3, 4 and 5 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by choosing a suitable figure (D) from the Answer Set.***

PROBLEM FIGURES **ANSWER FIGURES**

1. 

(B.S.R.B. 1993)

2. 

3. 

4. 

(B.S.R.B. 1990)

5. 

6. 

(B.S.R.B. 1992)

7. 

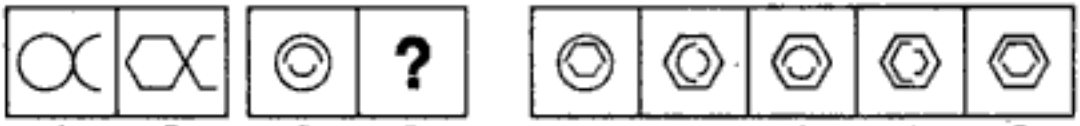
8. 

9. 

PROBLEM FIGURES **ANSWER FIGURES**

10. 
A B C D 1 2 3 4 5

(B.S.R.B. 1993)

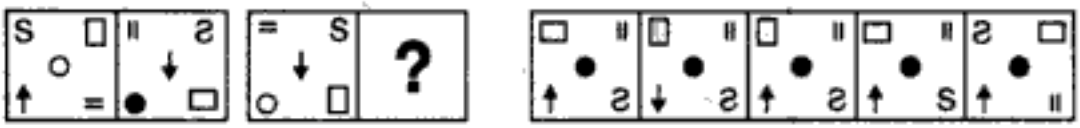
11. 
A B C D 1 2 3 4 5

12. 
A B C D 1 2 3 4 5

(Hotel Management, 1992)

13. 
A B C D 1 2 3 4 5

(B.S.R.B. 1995)

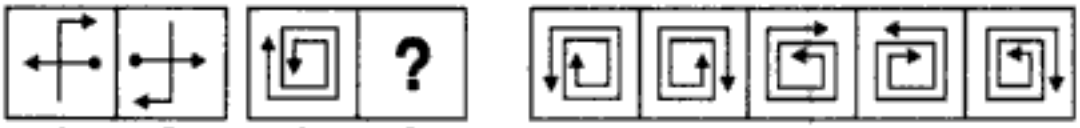
14. 
A B C D 1 2 3 4 5

(B.S.R.B. 1993)

15. 
A B C D 1 2 3 4 5

16. 
A B C D 1 2 3 4 5

(B.S.R.B. 1995)

17. 
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18. 
A B C D 1 2 3 4 5

(B.S.R.B. 1992)

19. 
A B C D 1 2 3 4 5

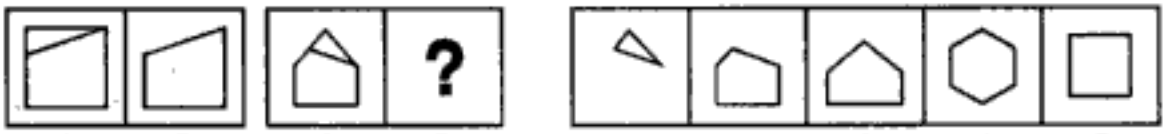
PROBLEM FIGURES **ANSWER FIGURES**

20.

A B C D 1 2 3 4 5

(B.S.R.B. 1995)

21.



A B C D 1 2 3 4 5

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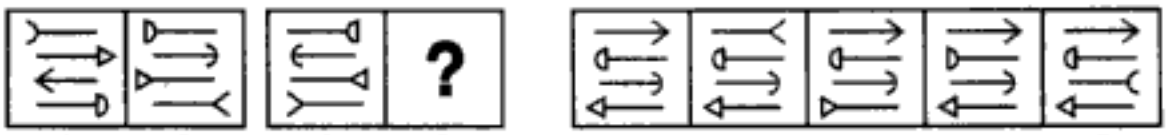


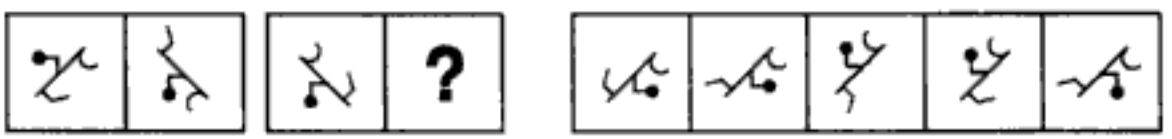
A B C D 1 2 3 4 5

(B.S.R.B. 1994)

23.

A B C D 1 2 3 4 5

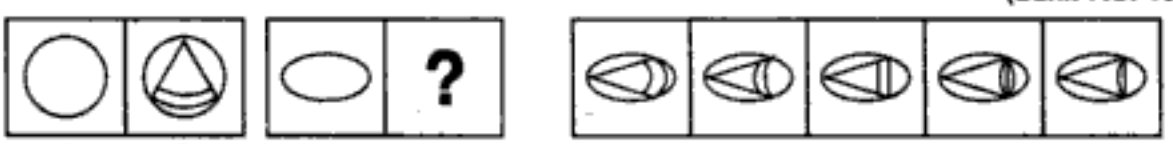
24.



A B C D 1 2 3 4 5

(Bank P.O. 1995)

25.



A B C D 1 2 3 4 5

(Asstt. Grade, 1993)

26.

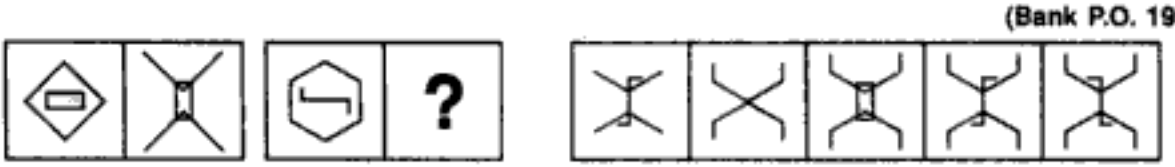
A B C D 1 2 3 4 5

27.

A B C D 1 2 3 4 5

(Bank P.O. 1993)

28.



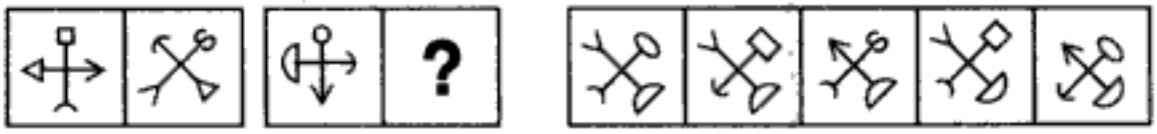
A B C D 1 2 3 4 5

(Teachers' Exam, 1991)

29.

A B C D 1 2 3 4 5

PROBLEM FIGURES **ANSWER FIGURES**

30. 
A B C D 1 2 3 4 5

(B.S.R.B. 1994)

31. 
A B C D 1 2 3 4 5

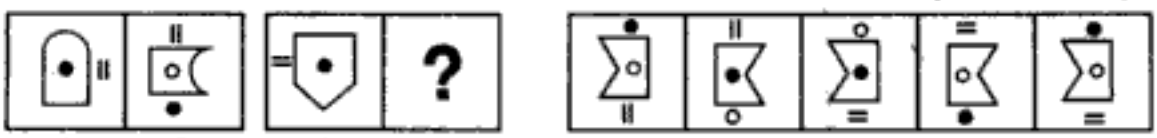
32. 
A B C D 1 2 3 4 5

33. 
A B C D 1 2 3 4 5

(B.S.R.B. 1996)

34. 
A B C D 1 2 3 4 5

(Central Excise, 1989)

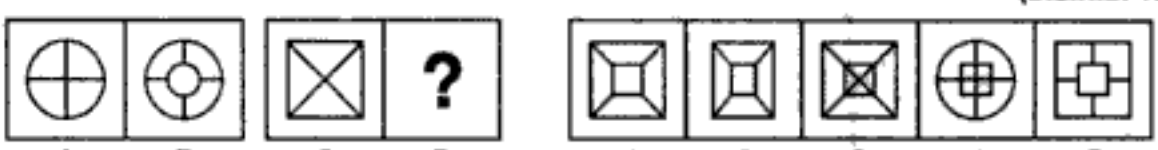
35. 
A B C D 1 2 3 4 5

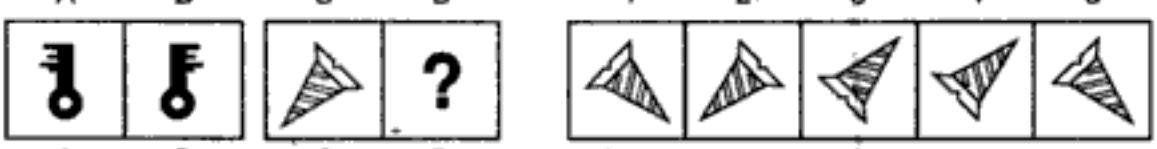
(B.S.R.B. 1994)

36. 
A B C D 1 2 3 4 5

37. 
A B C D 1 2 3 4 5

(B.S.R.B. 1990)

38. 
A B C D 1 2 3 4 5

39. 
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PROBLEM FIGURES **ANSWER FIGURES**

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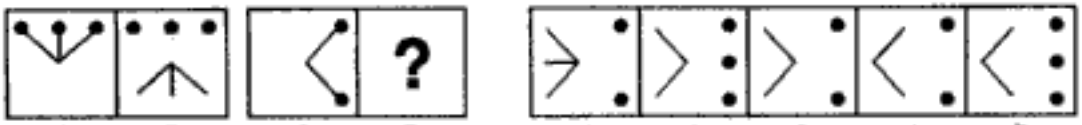
A B C D 1 2 3 4 5

(NABARD, 1991)

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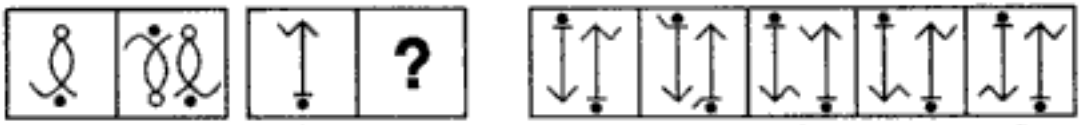
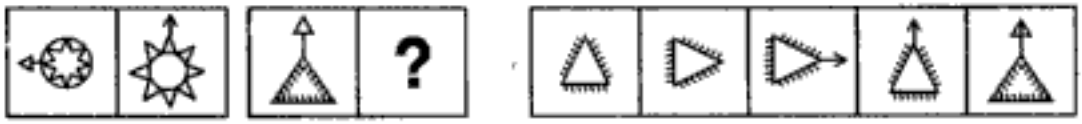
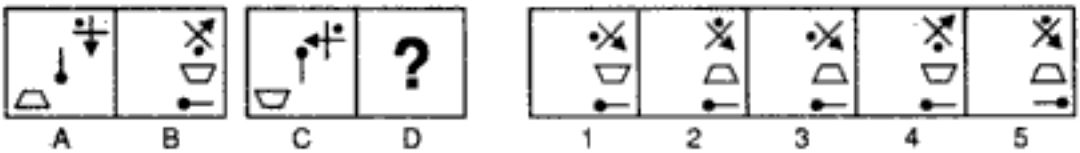

A B C D 1 2 3 4 5

42.

A B C D 1 2 3 4 5

43.

A B C D 1 2 3 4 5

(B.S.R.B. 1994)

44.

A B C D 1 2 3 4 5

45.

A B C D 1 2 3 4 5

(B.S.R.B. 1995)

46.

A B C D 1 2 3 4 5

47.

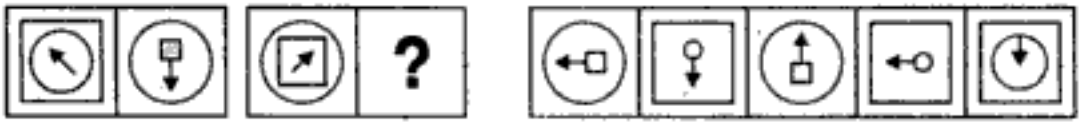
A B C D 1 2 3 4 5

(R.R.B. 1988)

48.

A B C D 1 2 3 4 5

(B.S.R.B. 1992)

49.

A B C D 1 2 3 4 5

PROBLEM FIGURES **ANSWER FIGURES**

50.

A B C D 1 2 3 4 5

51.

A B C D 1 2 3 4 5

(B.S.R.B. 1993)

52.

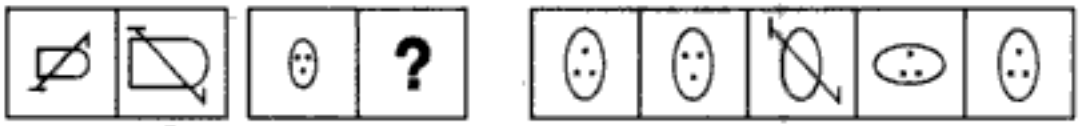
A B C D 1 2 3 4 5

53.

A B C D 1 2 3 4 5

(B.S.R.B. 1994)

54.



A B C D 1 2 3 4 5

(Teacher's Exam, 1991)

55.

A B C D 1 2 3 4 5

56.

A B C D 1 2 3 4 5

57.

A B C D 1 2 3 4 5

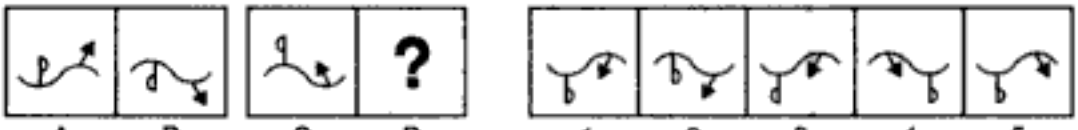
(B.S.R.B. 1994)

58.

A B C D 1 2 3 4 5

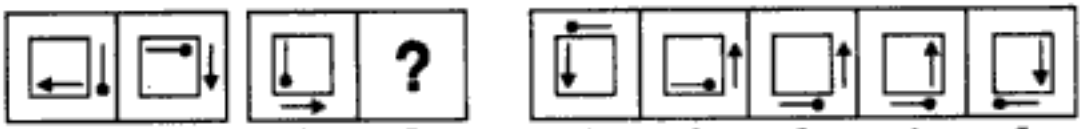
(B.S.R.B. 1993)

59.



A B C D 1 2 3 4 5

PROBLEM FIGURES **ANSWER FIGURES**

60.


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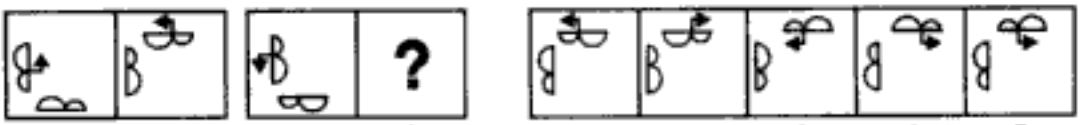
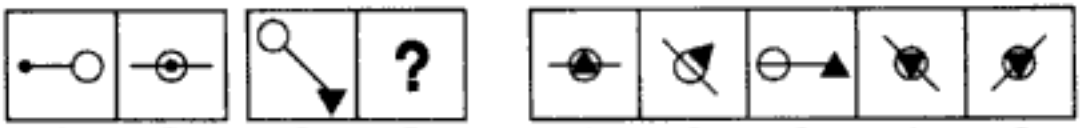


(B.S.R.B. 1995)

62.


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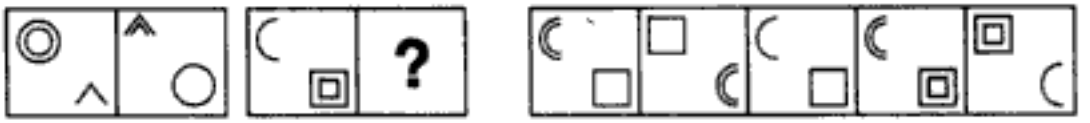
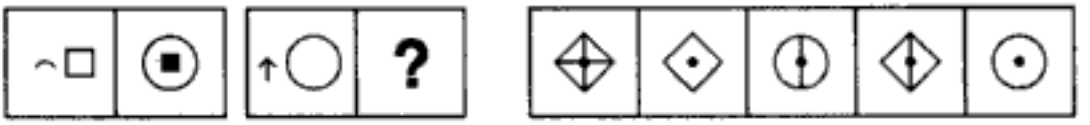
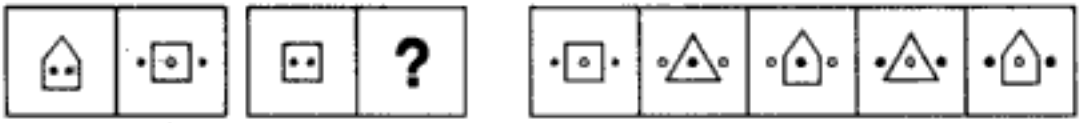


(B.S.R.B. 1993)

64.


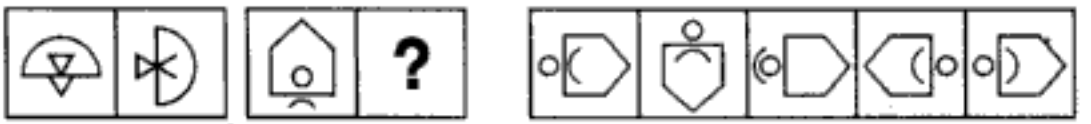
65.


(B.S.R.B. 1992)

66.


67.


(Bank P.O. 1995)

68.


69.


(B.S.R.B. 1996)

PROBLEM FIGURES **ANSWER FIGURES**

70.


71.

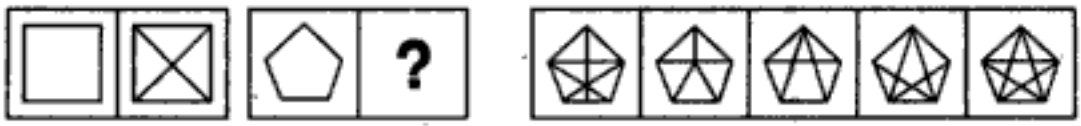

(Asstt. Grade, 1992)

72.


(B.S.R.B. 1995)

73.

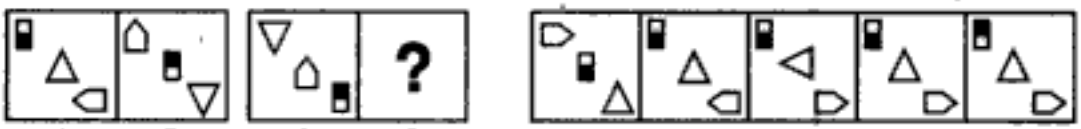

(B.S.R.B. 1993)

74.


75.


76.


(B.S.R.B. 1996)

77.


78.


(Hotel Management, 1992)

79.


(B.S.R.B. 1992)

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PROBLEM FIGURES **ANSWER FIGURES**

150.

A B C D 1 2 3 4 5

151.

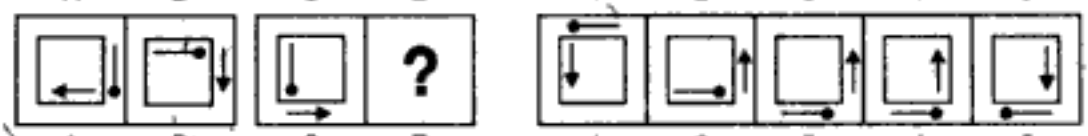
A B C D 1 2 3 4 5

(NABARD, 1991)

152.

A B C D 1 2 3 4 5

153.



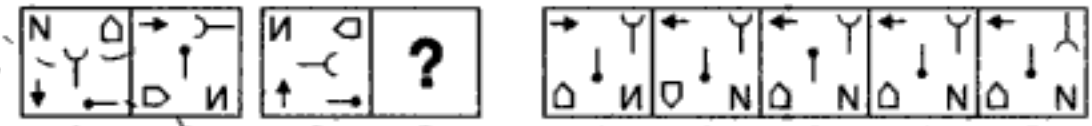
A B C D 1 2 3 4 5

(B.S.R.B. 1992)

154.

A B C D 1 2 3 4 5

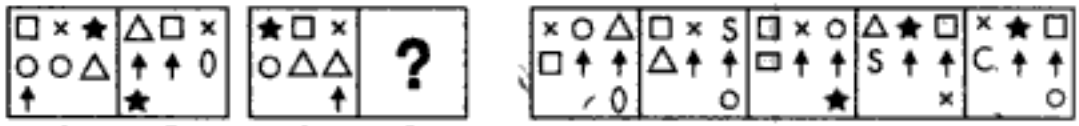
155.



A B C D 1 2 3 4 5

(B.S.R.B. 1994)

156.



A B C D 1 2 3 4 5

157.

A B C D 1 2 3 4 5

(B.S.R.B. 1996)

158.

A B C D 1 2 3 4 5

(Bank P.O. 1993)

159.

A B C D 1 2 3 4 5

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PROBLEM FIGURES **ANSWER FIGURES**

170.

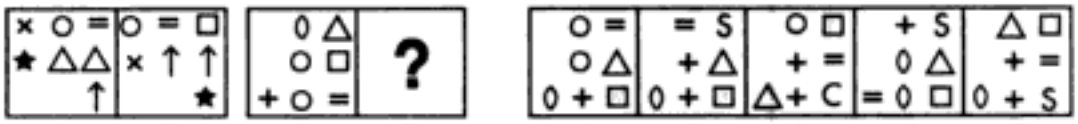
A B C D 1 2 3 4 5

(B.S.R.B. 1992)

171.

A B C D 1 2 3 4 5

172.



A B C D 1 2 3 4 5

(B.S.R.B. 1994)

173.

A B C D 1 2 3 4 5

174.

A B C D 1 2 3 4 5

(NABARD, 1991)

175.

A B C D 1 2 3 4 5

(B.S.R.B. 1995)

176.

A B C D 1 2 3 4 5

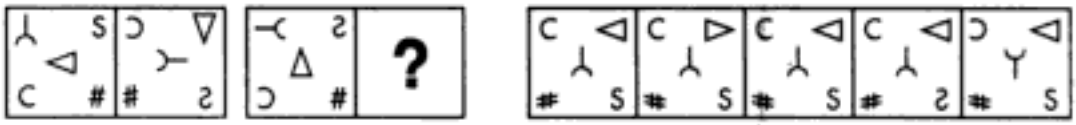
(Bank P.O. 1993)

177.

A B C D 1 2 3 4 5

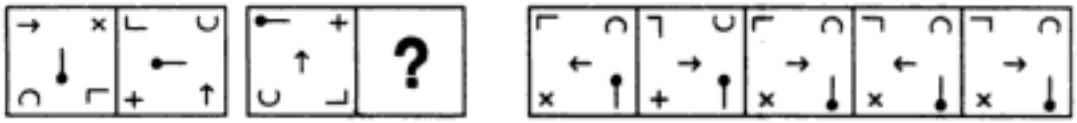
(B.S.R.B. 1996)

178.



A B C D 1 2 3 4 5

179.



A B C D 1 2 3 4 5

(B.S.R.B. 1994)

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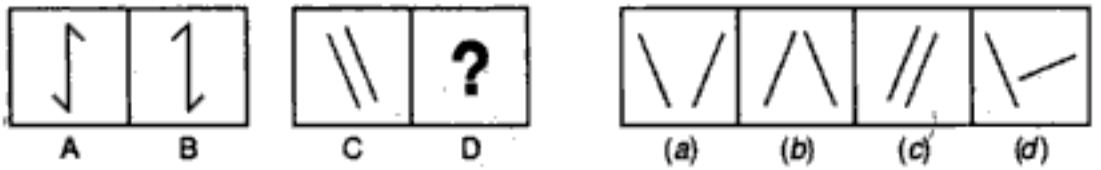
PROBLEM FIGURES **ANSWER FIGURES**

198.



A B C D (a) (b) (c) (d)

(U.D.C. 1994)

199.

A B C D (a) (b) (c) (d)

200.

A B C D (a) (b) (c) (d)

(Clerks' Grade, 1995)

201.

A B C D (a) (b) (c) (d)

(I. Tax, 1993)

202.

A B C D (a) (b) (c) (d)

(Central Excise, 1992)

203.

A B C D (a) (b) (c) (d)

(S.S.C. 199

204.

A B C D (a) (b) (c) (d)

205.

A B C D (a) (b) (c) (d)

(S.S.C. 1992)

206.

A B C D (a) (b) (c) (d)

(S.S.C. 1994)

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PROBLEM FIGURES **ANSWER FIGURES**

244.

A B C D (a) (b) (c) (d)

(I. Tax & Central Excise 1996)

245.

A B C D (a) (b) (c) (d)

246.

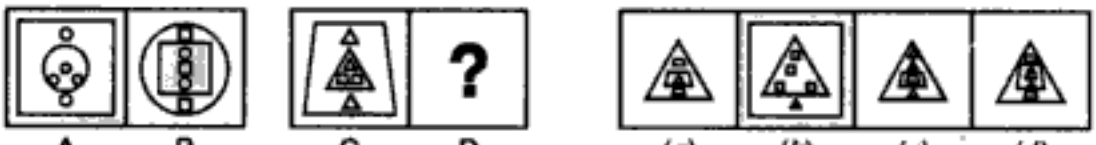
A B C D (a) (b) (c) (d)

(U.D.C. 1993)

247.

A B C D (a) (b) (c) (d)

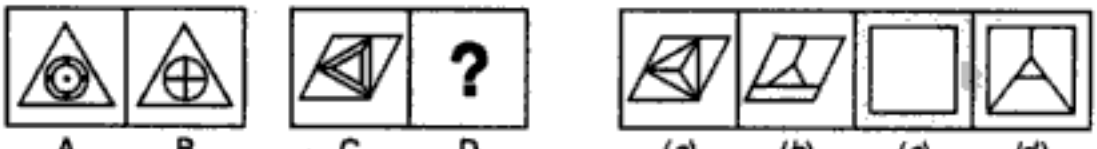
248.



A B C D (a) (b) (c) (d)

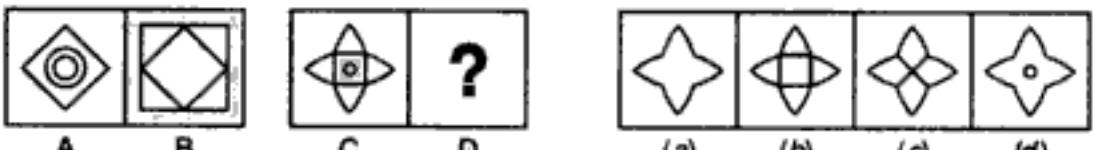
(Asstt. Grade, 1993)

249.



A B C D (a) (b) (c) (d)

250.



A B C D (a) (b) (c) (d)

(Central Excise, 1992)

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102. (*1*) : The pentagon gets inverted and the black figure is placed inside it, touching the upper boundary. Also, the lower half of the black figure becomes white.

103. (*3*) : The two central figures are inverted and joined to form a single figure which is placed on the L.H.S. The next two similar figures are laterally inverted and joined to form a single figure which after rotating through 90° is placed in the lower right corner. One of the remaining two identical figures is lost and the other is placed in the right corner.

104. (*3*) : The symbols move in the order  .

The triangle rotates 90° ACW; the pin rotates 90° CW and the other two symbols get laterally inverted.

105. (*4*) : The figure rotates through 135° ACW.

106. (*5*) : Fig. (B) contains both the inverted and the laterally inverted images of fig. (*A*).

107. (*4*) : The fig. rotates 90° CW. If an arrow is attached to the main fig. then, it is converted to a pin and two arrows are introduced on either sides of the pin. On the other hand, if a pin is attached to the main fig. then, it is replaced by an arrow and two pins are introduced on either sides of the arrow.

108. (*4*) : The fig. rotates 90° ACW and the arrow gets detached from it. The arrow gets inverted and the remaining part of the fig. gets laterally inverted.

109. (*3*) : The first, second, third and fourth symbols become fourth, third, second, and first respectively. The third symbol gets inverted and the fourth symbol becomes black.

110. (*4*) : The symbols move in the order  .

The symbols that reach the central upper and central lower position, get inverted.

111. (*5*) : The figure at one of the corners moves to the adjacent side CW and the big and small semi-circles interchange positions. The other fig. rotates 90° ACW and moves to the adjacent side CW, and the bent pin gets inverted.

112. (*5*) : The fig. rotates through 180°. The arrowhead gets inverted. The semicircle enlarges and the square reduces in size.

113. (*1*) : The fig. rotates 90° ACW and then gets inverted. The larger figure reduces in size and the lower figure enlarges.

114. (*1*) : Two of the circles are converted into black triangles.

115. (*3*) : The inner figure is replaced by a figure with one less number of sides. The outer figure rotates 90° ACW and in each of the white rectangles, the outer halves become black.

116. (*3*) : One arrow is shifted to the top over the circle, with reversed direction.

117. (*2*) : The curved parts in the two figures are lost and the remaining parts are made to intersect.

118. (*2*) : The inner figure is rotated 45° CW and then inverted. The outer figure is rotated 45° ACW and then inverted.

119. (*5*) : The figure rotates 45°CW and the dots outside the main figure move to the other sides of the line.

120. (*5*) : The figure rotates 90° CW and gets inverted. The smaller and the larger curved portions interchange positions and the symbol inside the fig. is replaced by a new one.

121. (*5*) : The figure rotates 90° ACW. The black portion becomes white and vice-versa.

122. (*5*) : The figures formed by rotating fig. (A) through 90° CW and through 90° ACW are collected to form fig. (B). In a similar manner fig. (C) gives fig. (*5*).

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138. (*2*) : The figure rotates through 180° and three lines forming a zig- zag, get attached to its lower end.

139. (*4*) : The symbols move in the order 

The symbol that reaches the central position rotates 90° CW and its arc gets inverted; the 'P' shaped symbol rotates through 180°; the 'C' shaped symbol rotates 90° CW; the 'S' Shaped symbol gets laterally inverted and the fifth symbol gets replaced by a new one.

140. (*2*) : The figure gets laterally inverted; the white end becomes black; the black end becomes white and the circle becomes black if initially white and becomes white if initially black.

141. (*3*) : Fig. rotates 90° CW and the dot and the cross interchange positions.

142. (*4*) : The symbols move in the order 

The symbol at the top right corner gets replaced by a new one.

143. (*3*) : Each of two incomplete squares towards the upper side gets laterally inverted. The square at the lower left corner loses two of its sides while the one at the lower right corner loses one side.

144. (*3*) : The upper and the lower symbols interchange positions. The symbol that reaches the top gets laterally inverted; the second symbol gets inverted and the third symbol rotates 90° CW.

145. (*5*) : The lower figure rotates through 180° and the upper figure rotates through 135° CW and gets inverted.

146. (*1*) : The figure rotates 135° ACW. The triangle, arrowhead and the arc get inverted.

147. (*3*) : The main figure gets rotated through 180° and its hooks get inverted. The arrow rotates 135° ACW.

148. (*1*) : The figure rotates through 180° and a line is added to the lower part of the figure obtained.

149. (*2*) : The symbols move in the order 

The symbol that reaches the top- left position turns white; the symbol that reaches the lower-left corner rotates through 45°; the symbols at the top and middle positions in the central column rotate through 90° CW; the symbol at the lower position in the central column gets laterally inverted and a new symbol replaces the symbol in the top- right corner.

150. (*2*) : The symbols move one step downwards and the lowermost symbol reaches the top. The symbol that reaches the top position, gets inverted; the second symbol from the top, rotates through 90°; the third symbol becomes black and the fourth symbol rotates 90° CW.

151. (*2*) : The symbols move one step upwards and the topmost symbol becomes the lowermost. The symbol that reaches the top, gets inverted and turns black and the symbol that reaches the lowermost position gets inverted.

152. (*5*) : The fig. rotates 90° ACW and the white symbols turn black while the black symbols turn white.

153. (*4*) : The pin and the arrow move to the adjacent side in an ACW direction. Out of these two, the one which was inside, comes out and the other which was outside gets in.

154. (*3*) : The fig. rotates 135° ACW. The 'S'-shaped symbol gets laterally inverted and comes out near the base of the triangle. The square moves to the other side of the triangle and gets black. A new symbol '=' appears inside the triangle and a small triangle appears outside the larger triangle.

155. (*4*) : The symbol move in the order  .

The clamp and arrow rotate 90° ACW; the pentagon and pin rotate 90° CW and the 'N' shaped symbol gets inverted.

156. (*3*) : The symbols in fig. (A) move in the order  and a new symbol appears in central right position to give fig. (B). The lateral inversion of this order i.e. the order  with the appearance of a new symbol at the central left position gives the answer fig. from fig. (C).

157. (*5*) : The symbols move in the order  .

The symbol that reaches the top- left position, gets inverted; the symbol in the lower left corner rotates through 45°; the symbol in the upper-right corner gets inverted; the symbol in the lower-right corner rotates 90° ACW and the central symbol rotates 90° CW.

158. (*5*) : Out of the two parallel lines, the larger line gets converted to an arrow and the smaller line gets converted to a pin. The third line is replaced by a triangle.

159. (*3*) : The symbols move in the order  .

The symbol that reaches the top- left corner, rotates through 90°; the symbol that reaches the central and the right positions in the middle row, rotates 90° ACW; the symbols that reach the central & right positions in upper row rotate through 45°, the symbol that reaches the lower right corner rotates 90° ACW and a new symbol appears in middle-left position.

160. (*5*) : The upper and the lower parts of the figure get separated. Shading is removed from the upper part and the lower part is inverted. The two parts are then placed side by side.

161. (*1*) : The symbols move in the order  .

The symbol that reaches the top- left corner rotates 90° ACW; the symbol in the top-right corner rotates through 45°; the symbols in the lower-left corner and in the central positions rotate 90° CW and the symbol that reaches the lower-right corner rotates through 90°.

162. (*5*) : The figure gets laterally inverted. The dot on the larger arc, the pin and the small arc rotate 90° ACW. Also, the pin gets inverted.

163. (*3*) : The figure rotates 90° CW. One half of one of the lines on the arrow is lost. The figure in front of the arrowhead rotates through 45°.

164. (*4*) : The missing line segment in (A) is replaced in (B). Then moving ACW, the third line segment is removed along the two next consecutive sides of the square. Shaded portion in (A) moves three steps ACW. Similarly, fig. (C) gives fig. (*4*)

165. (*4*) : Each part of the figure rotates 90° CW and also moves two steps CW.

166. (*3*) : The lower & L.H.S. portions rotate 135° ACW; the R.H.S. & the upper portions rotate through 180°.

167. (*5*) : All the arrows get laterally inverted and the uppermost and the lowermost arrows interchange positions.

168. (*2*) : The symbols move in the order  .

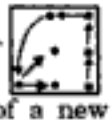
The triangle & pin rotate 90° CW; the square and the '+' symbols rotate through 45° and the trapezium gets inverted.

169. (2) : The innermost symbol rotates 135° ACW, the arc at its one end gets replaced by a black triangle and the black circle is replaced by a white circle and this symbol gets enlarged. The middle symbol gets diminished and inverted and appears on the lower side. The outermost symbol gets diminished and inverted and appears on the upper side.

170. (3) : The figure gets laterally inverted and the inverted image of the figure formed, gets attached to it.

171. (2) : The symbols move in the order 

The symbols that reach the upper position in the leftmost column, middle and lower positions in the middle column, middle position in the rightmost column rotate 90° CW. The symbol that reaches the lower position in the leftmost column rotates through 45° and a new symbol appears in the middle position in the leftmost column. The symbol in the lower position in the right most column rotates 90° ACW.

172. (5) : The symbols move in the order  and a new symbol appears in upper-right corner, to give fig. (B) from fig. (A). The movement of symbols in the order  (obtained by rotating the initial order 90° CW) and the appearance of a new symbol in the lower right corner, gives the answer figure i.e. fig. (5) from fig. (C).

173. (2) : The symbols move in the order 

The 'Z'-shaped symbol gets inverted; the clamp and the arrow rotate 90° ACW; the pin and the pentagon rotate 90° CW.

174. (4) : The contents of the hexagon rotate one step CW and the diagonally opposite symbols interchange positions.

175. (4) : The figure rotates 45° CW and then turns about the arrow. The arrow also gets reversed.

176. (2) : The fig. gets laterally inverted and the arrowhead or the arc reverses in direction.

177. (2) : The main figure gets inverted. The end of the lamp which is white turns black and the other end turns white. The circle turns black, if initially white and it turns white, if initially black. The arrow at the bottom rotates 90° CW and the square rotates through 45°.

178. (1) : The symbol move in the order 

The 'C' and 'S' shaped symbols get laterally inverted. The triangle rotates 90° ACW; the hook rotates 90° CW and the fifth symbol rotates 45° ACW.

179. (5) : The symbols move in the order 

The symbol that reaches the lower- right corner gets rotated 90° ACW; the symbols that reach the upper-left and upper-right positions, get inverted; the central symbol rotates 90° CW and the symbol that reaches the lower- left corner rotates through 45°.

180. (*1*) : The symbols move in the order 

The triangle rotates 90° CW; the square and the arrow rotate 90° ACW and the fourth symbol gets inverted.

181. (*2*) : The symbol moves to the diagonally opposite quadrant. Out of the two similar figures, the inner one is removed and the outer figure is made dotted.

182. (*5*) : The lines carrying the circle and the bar rotate through 180° white those carrying the squre and the arrow rotate 135° ACW.

183. (*3*) : The figure gets laterally inverted and all the arcs reverse their directions.

184. (*5*) : Each one of the squares rotates 90° ACW.

185. (*2*) : The figure rotates 45° CW and gets inverted. The arrowhead, then, gets inverted.

186. (*1*) : The lower-right symbol enlarges and comes to the centre and the upper left symbol enters it. The other two symbols interchange positions. The symbol that reaches the top-right position rotates 90° ACW while the symbol that reaches the lower-left position rotates 90° CW.

187. (*2*) : In the two figures, the portions in which no lines are drawn are removed and the resulting figure is rotated through 180°. In the L.H.S. part of this figure, the single vertical line is replaced by two parallel lines.

188. (*d*) : The figure is replaced by a figure with one less number of sides and this figure is placed inside a circle.

189. (*d*) : Each triangle in the figure is replaced by a rhombus.

190. (*a*) : The figure is duplicated.

191. (*a*) : The inner two figures interchange positions and the outer figure is removed.

192. (*c*) : The two circles along the diagonal from upper left to lower right corner are removed and a circle is placed at the centre. If the two circles are white then the new circle will be black and vice- versa.

193. (d) : A triangle is placed inside the figure with the base of the figure as its base.

194. (d) : The figure is laterally inverted and the black circle is made white.

195. (d) : One fourth part of each element in the figure is lost.

196. (*b*) : The figure is laterally inverted.

197. (*a*) : The figure is rotated 45° ACW.

198. (*c*) : The figure is laterally inverted.

199. (*a*) : Two adjacent sides of the figure are removed and the other two sides are brought to the centre.

200. (*c*) : The figure is inverted or laterally inverted so that the direction of the arrow is reversed.

201. (*c*) : The two equal halves of the figure are and laterally inverted and brought together to form a closed figure.

202. (*b*) : The circles are converted to equilateral triangles and the ellipses are converted to scalene triangles and vice-versa. (This is a question on inverse relationship).

203. (*c*) : One horizontal and vertical lines are removed from the figure.

204. (*d*) : The figure is inverted and dots are placed at each one of its vertices.

205. (*c*) : The figure is replaced by a figure with two sides more and the new figure is shaded.

206. (*c*) : One of the two similar elements one the top is removed. The lines emerging from the lower element are turned inwards and a similar element appears. Both these elements are then connected to the upper element.

207. (*b*) : A triangle is placed inside, if the initial figure is a quadrilateral and a quadrilateral is placed inside, if the initial figure is a triangle. (This is a question of inverse relationship).

208. (*d*) : The end point of each one of the lines is joined to the end point of the adjacent lines, so as to form a closed geometrical figure.

209. (*d*) : The figure rotates 45° CW and is placed inside a triangle touching its base.

210. (*c*) : The inner figure is replaced by a figure with one more number of sides and this inner figure is shaded.

211. (*d*) : The curved lines are converted to straight lines.

212. (*b*) : The figure is rotated through 90°. The small line perpendicular to the longer line is removed if it exists and is placed if it does not exist.

213. (*d*) : Each one of the figures is replaced by a figure with one more number of sides. The vertical line is replaced by two horizontal lines and the region between these two lines is shaded.

214. (*c*) : The figure is laterally inverted.

215. (*b*) : Only the shaded portion of the figure remains and it rotates 90° CW.

216. (*b*) : The figure gets laterally inverted.

217. (*b*) : The figure is divided into two equal parts and the lower part is placed above the other part.

218. (*d*) : The fig. is inverted and its upper and lower ends are encircled.

219. (*c*) : The circles are converted to ellipses.

220. (*b*) : The contents of the outer square are rotated 45° ACW.

221. (*c*) : The upper and the lower elements in the centre are inverted and joined to form a single element which is placed on the top. The two arcs on the sides, are laterally inverted and joined to form an ellipse which is rotated through 90° and placed below the initially formed figure. One of the two remaining similar elements is removed and the other is placed at the bottom.

222. (*a*) : The figure is rotated through 180°.

223. (*a*) : The number of sides in the figure is increased by one and the number of lines inside the figure is reduced by one.

224. (*c*) : The inner and the outer figures interchange positions by enlargement of the inner figure and the decrease in size of the outer figure. Also the figure that gets in, is shaded by dots.

225. (*c*) : The figure is intersected by a similar small figure.

226. (*d*) : Either the top or the R.H.S. pin is removed and the remaining figure is rotated 90° CW and half of the heads of both the pins are made black.

227. (*a*) : The outer figure is replaced by a figure with one less number of sides and the circle inside the ellipse moves to the opposite end.

228. (*b*) : The whole figure is rotated 90° CW. The outer figure is horizontally divided into two equal parts which are then individually inverted.

229. (*c*) : The number of crosses remains the same and the number of circles increases by one.

230. (*a*) : The figure is divided into two equal parts about a horizontal line and the two parts are inverted and joined to form the new figure.

231. (*a*) : The element attached to the main figure, gets attached to the other end of the same side of the main figure.

232. (*b*) : One of the similar figures at the lower end of the main figure gets attached to the upper end and the other element rotates through 90°.

233. (*c*) : The outer figure is replaced by a figure with one side more than the inner figure. And the inner figure is replaced by a figure similar to the outer figure.

234. (d) : The inner figure is rotated 90° CW and is made to intersect the outer figure and a similar figure is made to intersect at the opposite end of the outer figure.

235. (d) : One of the lines near each side of the figure, is brought inside and all these lines are joined to form a closed figure.

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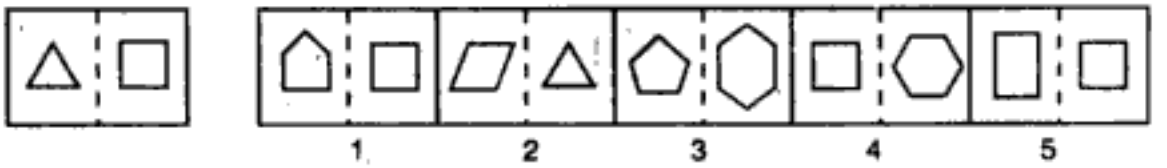
15. 

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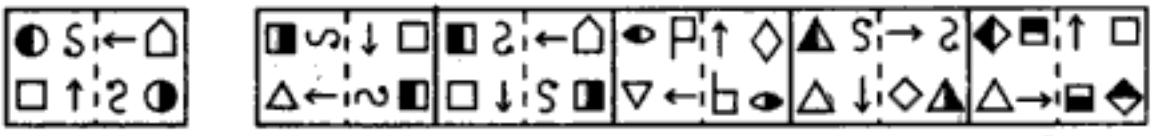
(Bank P.O. 1994)

16. 

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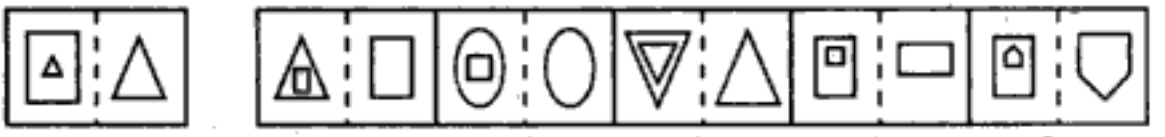
17. 

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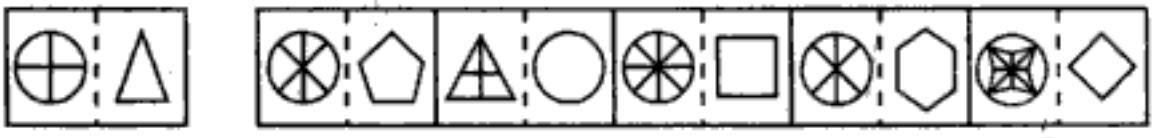
18. 

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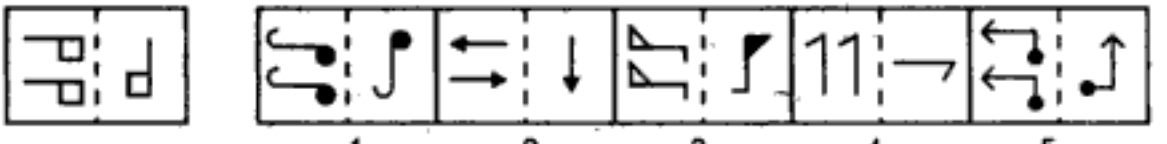
20. 

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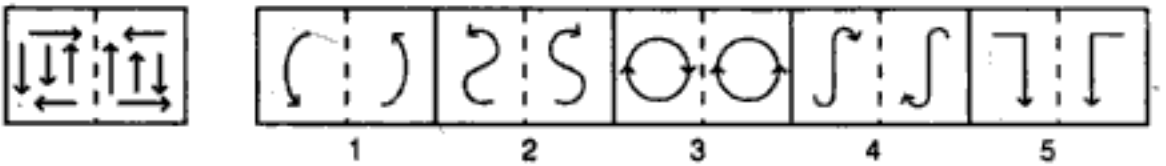
21. 

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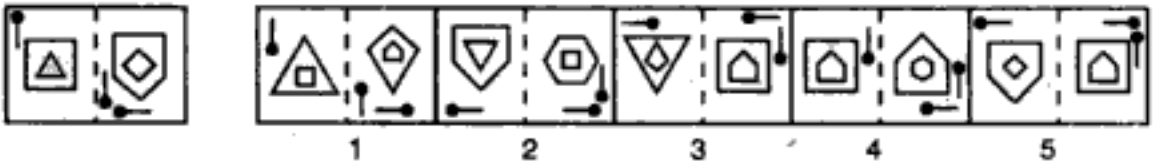
22. 

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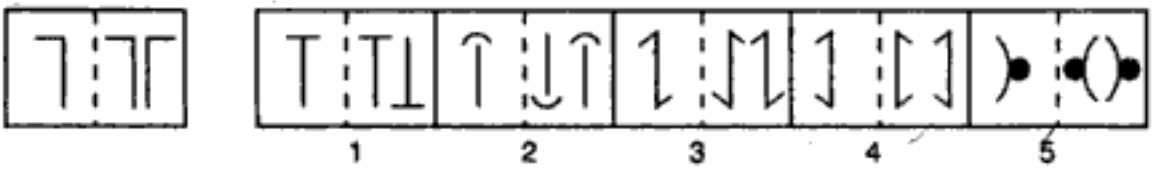
23. 

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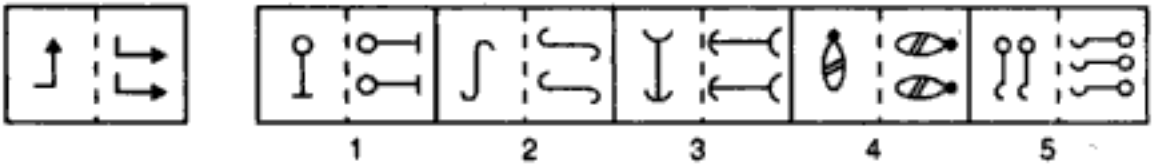
(S.B.I.P.O. 1992)

24. 

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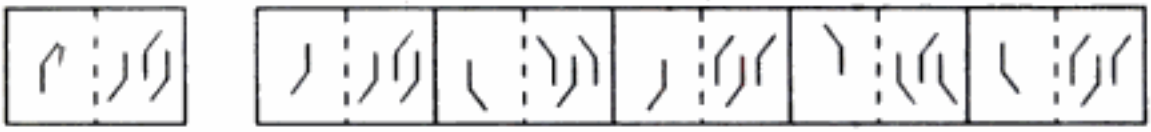

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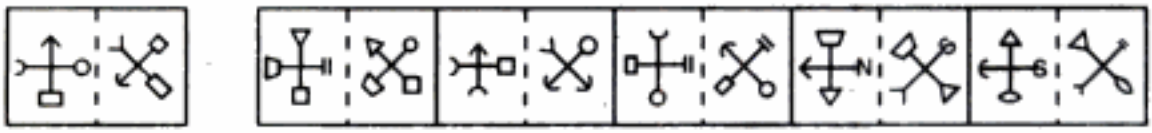

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(B.S.R.B. 1994)

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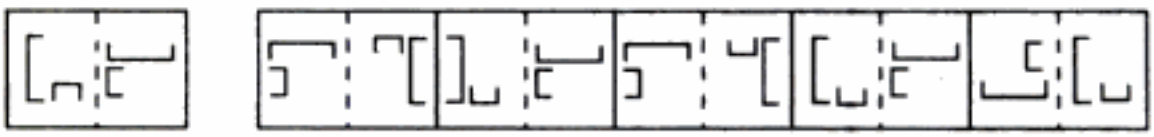

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(S.B.I.P.O. 1991)

ANSWERS (EXERCISE 2B)

1. (*5*) : R.H.S. fig. has the same number of sides as the number of arrows in L.H.S. figure.

2. (*3*) : The L.H.S. figure is enlarged and a similar inverted figure is placed inside it, so as to form the R.H.S. figure.

3. (*2*) : The L.H.S. figure is inverted upside down to form the R.H.S. figure.

4. (*5*) : The L.H.S. figure is rotated 135° ACW to form the R.H.S. figure.

5. (*1*) : All the elements in the L.H.S. figures are different. The innermost element becomes the middle element; the middle element is inverted and made the outermost element and the outermost element is made the innermost element. This gives the R.H.S. figure.

6. (*4*) : The L.H.S. figure is inverted and enlarged to form the R.H.S. figure.

7. (*4*) : The L.H.S. figure is rotated 90° CW and a duplicate copy of it is placed in the same direction just below it to form the R.H.S. figure.

8. (*3*) : The L.H.S. figure rotates 90° CW. The symbol that reaches the lower left position gets inverted and the symbol that reaches the upper-left position gets replaced by a new one. This gives the R.H.S. figure.

9. (*1*) : The number of sides in the L.H.S. figure increases by two and the number of lines inside and outside increases by one. This forms the R.H.S. figure.

10. (*5*) : The L.H.S. figure is inverted and duplicated to form the R.H.S. figure.

11. (*3*) : The upward inverted image of L.H.S. fig. is attached to it to form the R.H.S. figure.

12. (*4*) : The L.H.S. figure is rotated through 180° and the element at its end is made white so as to obtain the R.H.S. figure.

13. (*4*) : The outer element is rotated through 90° and decreased in size while the inner element is enlarged to form the outer figure. This gives R.H.S. figure from the L.H.S. figure.

14. (*3*) : The L.H.S. figure is inverted and duplicated to form the R.H.S. figure.

15. (*3*) : The R.H.S. figure contains one side more than the L.H.S. figure.

16. (*1*) : All the elements in the L.H.S. figure move two steps CW. The upper left element in the L.H.S. figure gets laterally inverted; the upper-right element gets inverted, the lower-right element rotates 90° ACW and the fourth element gets replaced by a new one. This forms the R.H.S. figure.

17. (*1*) : The outer element of L.H.S. figure is removed and the inner element is enlarged to form R.H.S. figure.

18. (*1*) : The number of sides in the R.H.S. figure is one less than the number of radii in the circle in the L.H.S. figure.

19. (*1*) : The L.H.S. figure is rotated through 180° to form the R.H.S. figure.

20. (*5*) : One of the two similar elements in the L.H.S. figure is removed and the other element is rotated 90° CW to form the R.H.S. figure.

21. (*4*) : All the arrows in the L.H.S. figure reverse their directions to form the R.H.S. figure.

22. (*2*) : Both the elements of L.H.S. figure are replaced by elements with one more number of sides. The pin gets inverted and moves to the next corner ACW. Another pin with head pointing towards the first pin also appears.

23. (*3*) : The L.H.S. figure and its laterally inverted image are put together to form the R.H.S. figure.

24. (*2*) : The L.H.S. figure is rotated 90° CW and duplicated to form the R.H.S. figure.

25. (*2*) : The L.H.S. figure is inverted and enlarged and a figure similar to the L.H.S. figure is enclosed in it. This forms the R.H.S. figure.

26. (*5*) : The upper element in the L.H.S. figure is rotated 90° CW and the lower element is rotated 90° ACW to form the R.H.S. figure.

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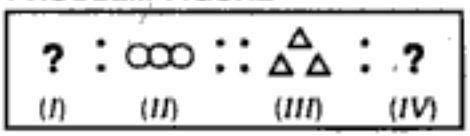
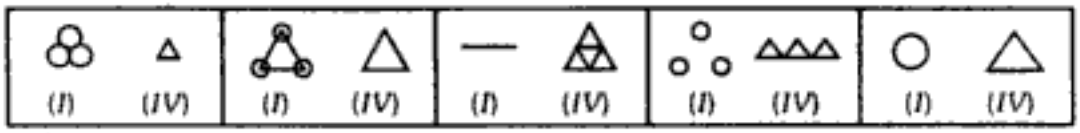
PROBLEM FIGURE

3. 

ANSWER FIGURES



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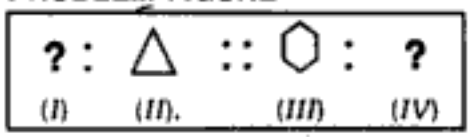
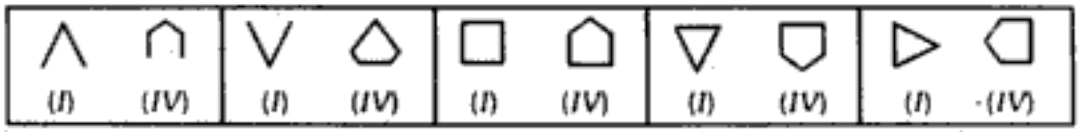
PROBLEM FIGURE

4. 

ANSWER FIGURES



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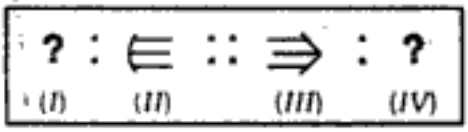
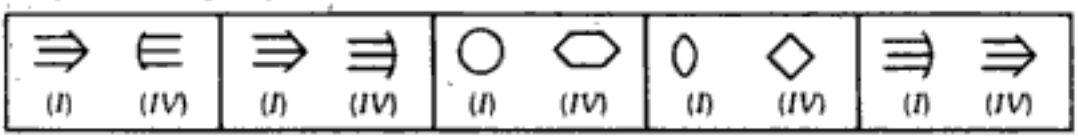
PROBLEM FIGURE

5. 

ANSWER FIGURES



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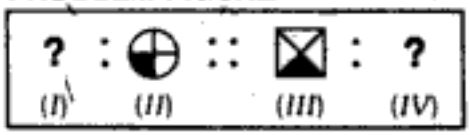
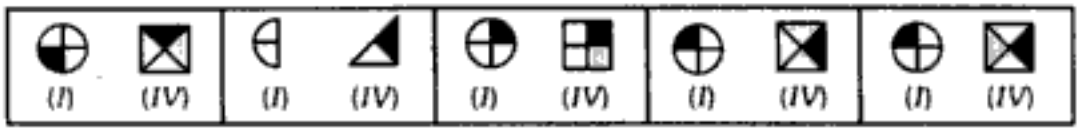
PROBLEM FIGURE

6. 

ANSWER FIGURES



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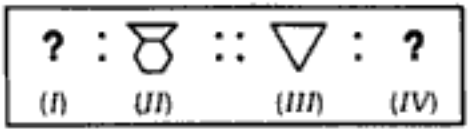
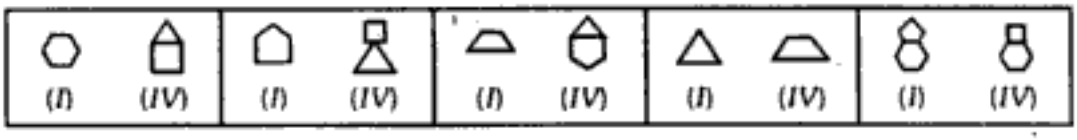
7. 

ANSWER FIGURES



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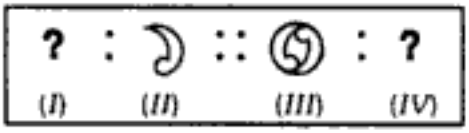
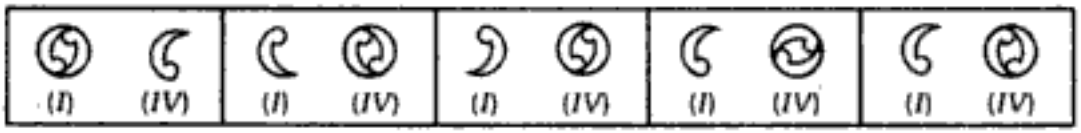
8. 

ANSWER FIGURES



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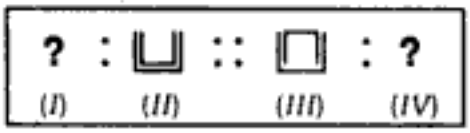
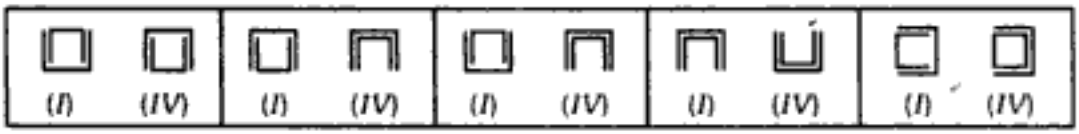
PROBLEM FIGURE

9. 

ANSWER FIGURES



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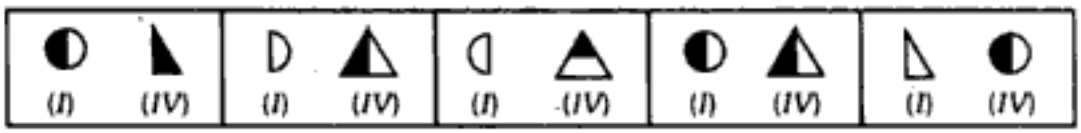
PROBLEM FIGURE

10. 

ANSWER FIGURES



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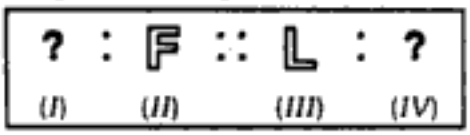
11. 

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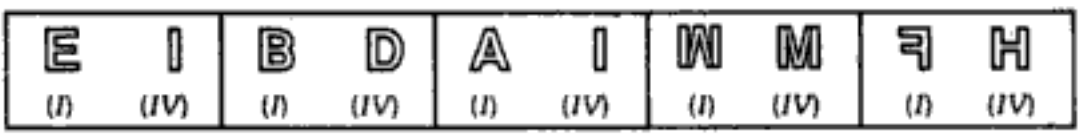

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PROBLEM FIGURE

12. 

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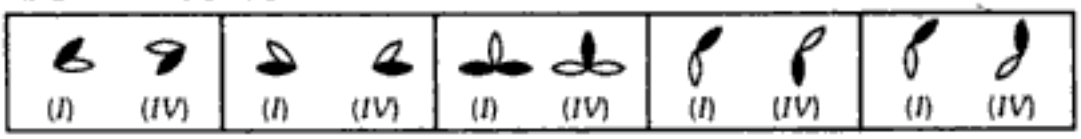
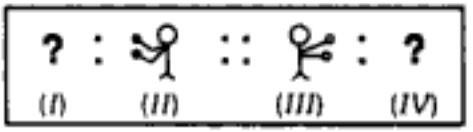


A B C D E **(R.B.I. 1991)**

PROBLEM FIGURE

13. 

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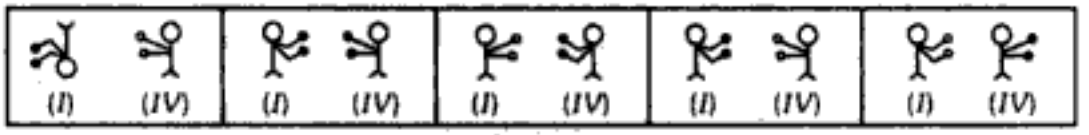

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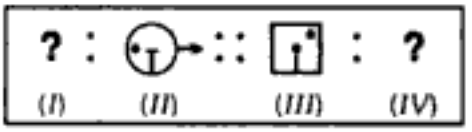
14. 

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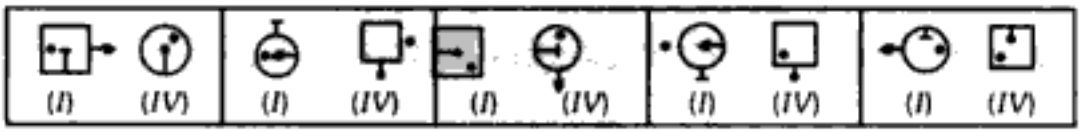

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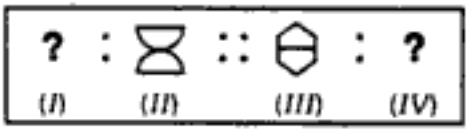
15. 

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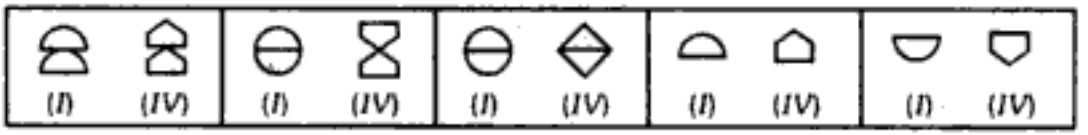

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PROBLEM FIGURE

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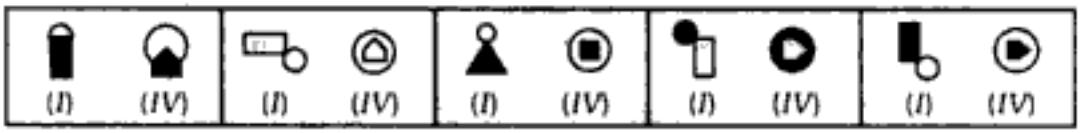

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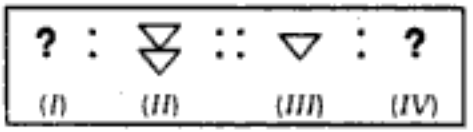
17. 

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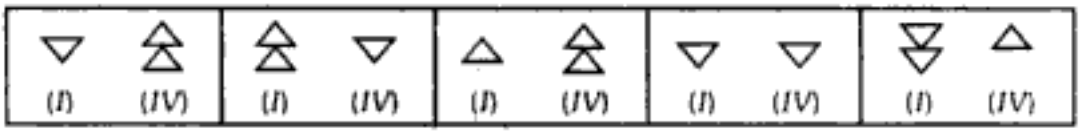

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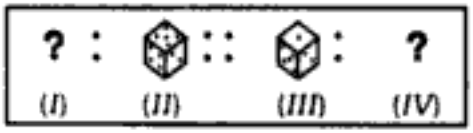
(Bank P.O. 1988)

PROBLEM FIGURE

18.

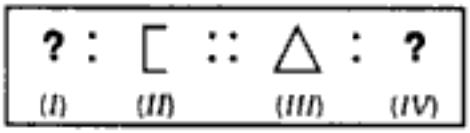


ANSWER FIGURES

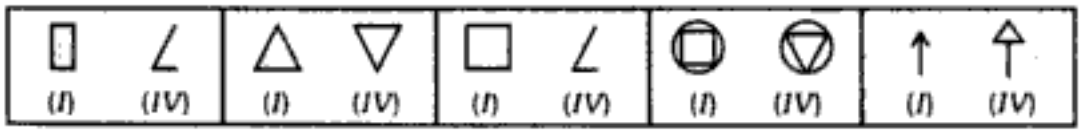
A B C D E

PROBLEM FIGURE

19.



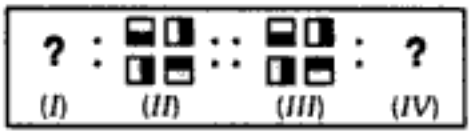
ANSWER FIGURES



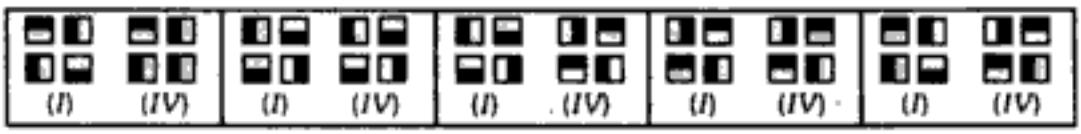
A B C D E

PROBLEM FIGURE

20.



ANSWER FIGURES



A B C D E

(S.B.I.P.O. 1990)

PROBLEM FIGURE

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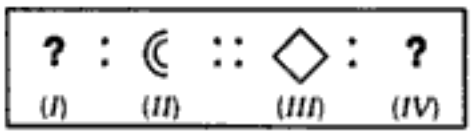
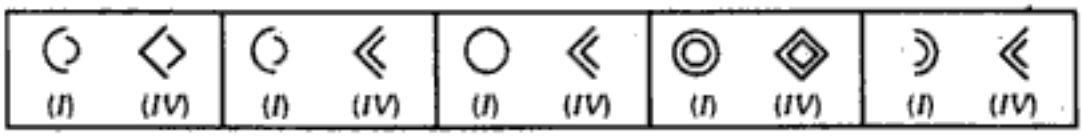


ANSWER FIGURES



A B C D E

PROBLEM FIGURE

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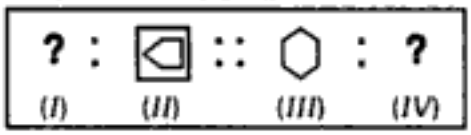
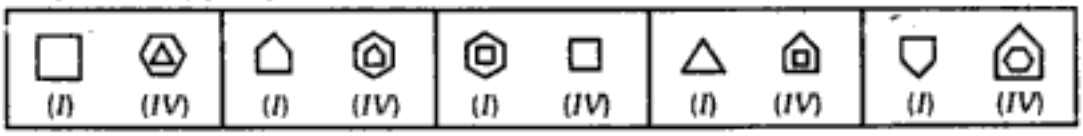


ANSWER FIGURES



A B C D E

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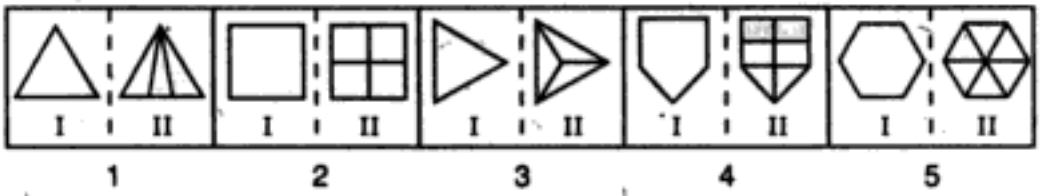

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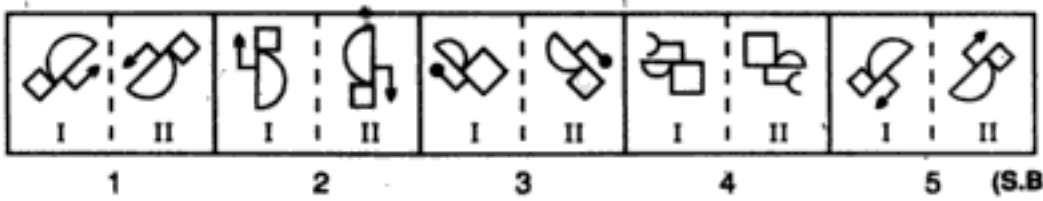

(S.B.I.P.O. 1994)

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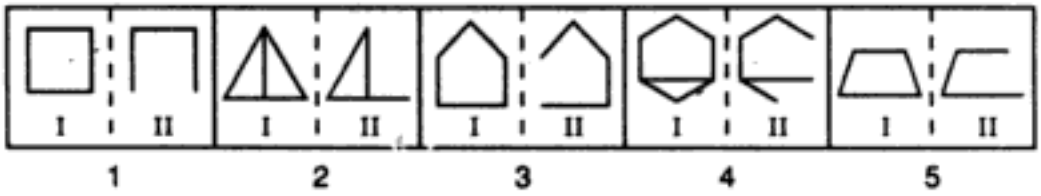

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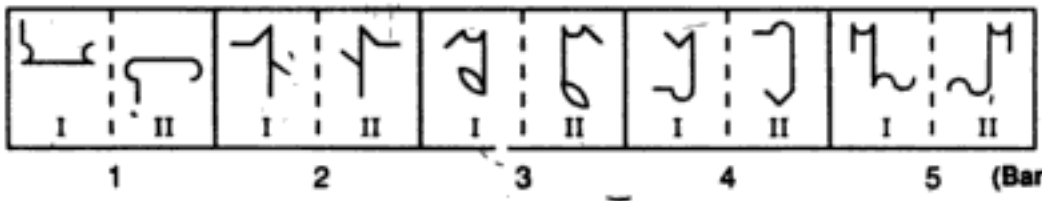

(Bank P.O. 1994)

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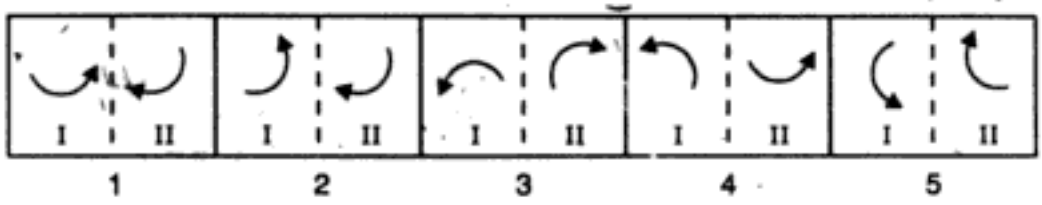

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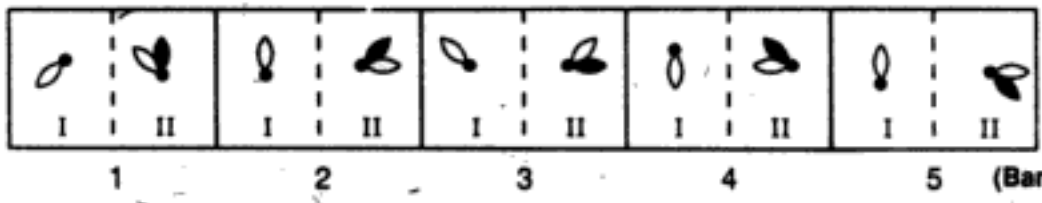

(Bank P.O. 1994)

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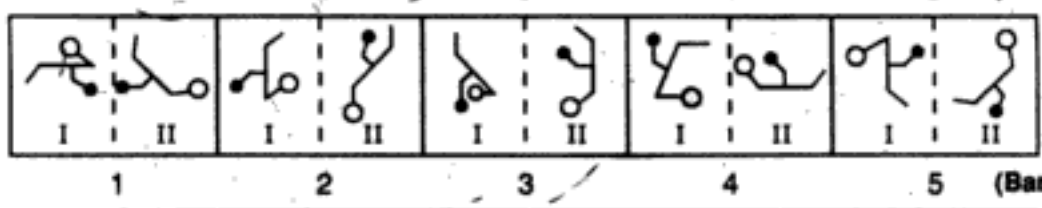

(Bank P.O. 1995)

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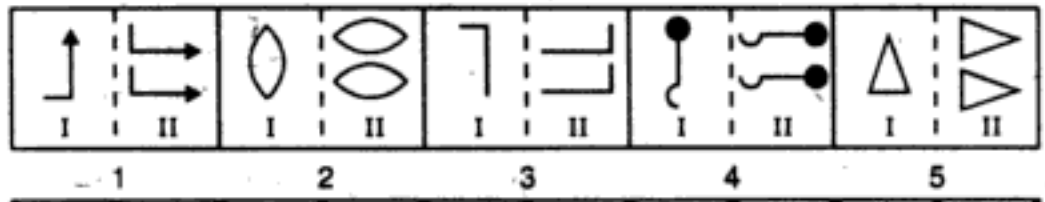

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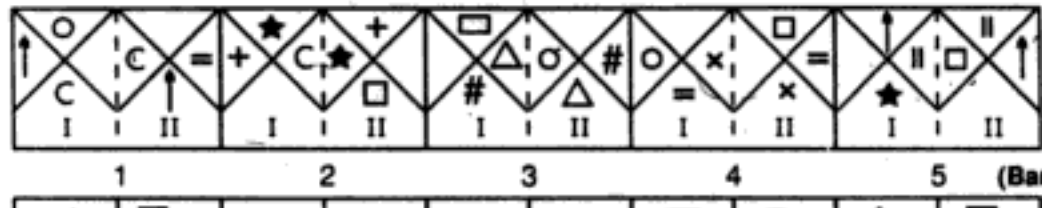

(Bank P.O. 1993)

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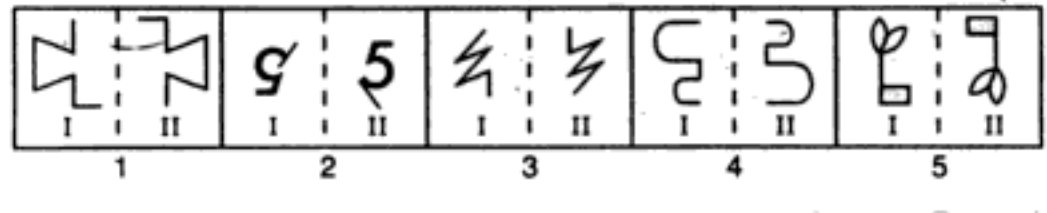

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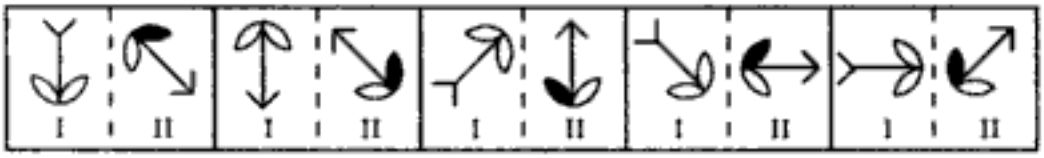

1 2 3 4 5 **(Bank P.O. 1994)**

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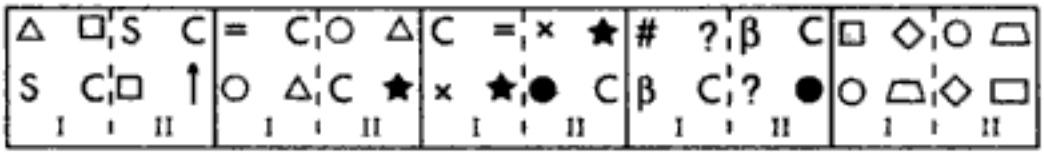

1 2 3 4 5 **(S.B.I.P.O. 1994)**

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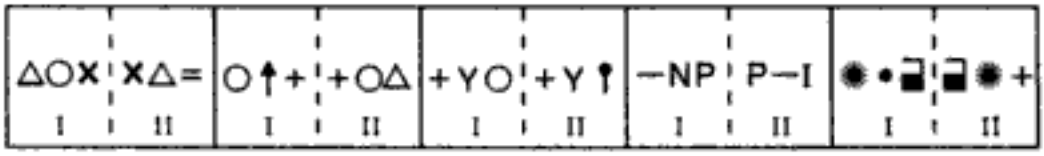

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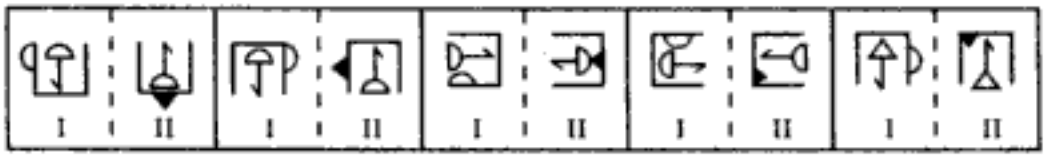

1 2 3 4 5 **(B.S.R.B. 1994)**

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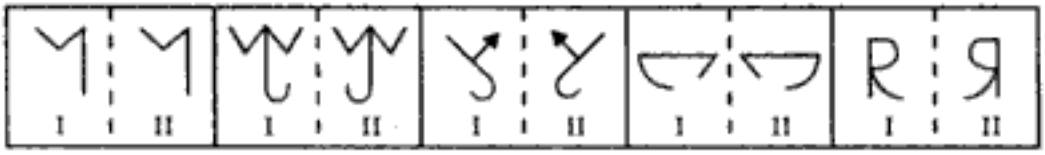

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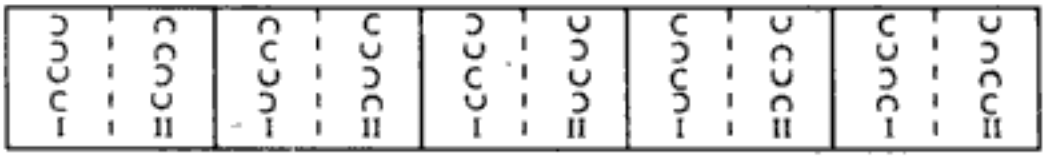

1 2 3 4 5 **(Bank P.O. 1994)**

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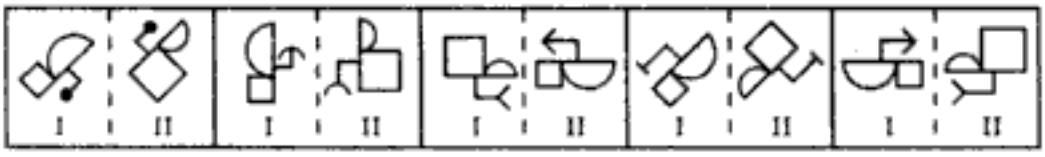

1 2 3 4 5 **(Bank P.O. 1993)**

25.

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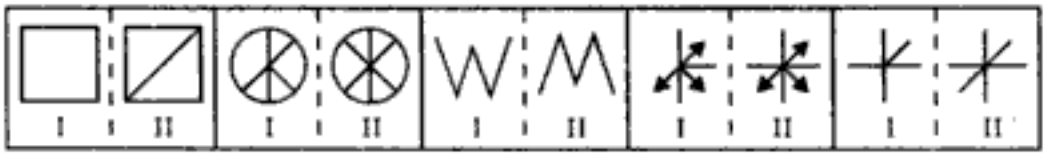

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27. 

1 2 3 4 5 **(Bank P.O. 1994)**

28. 

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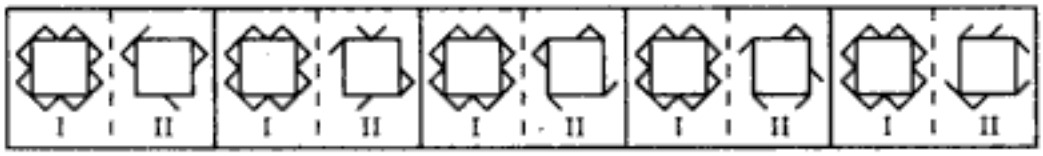
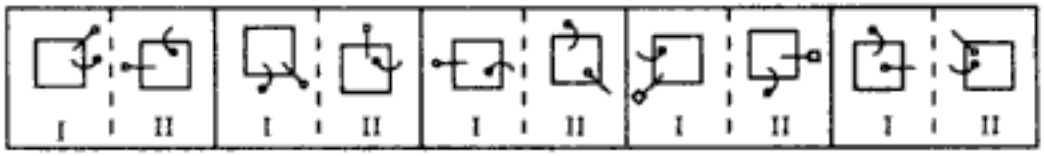
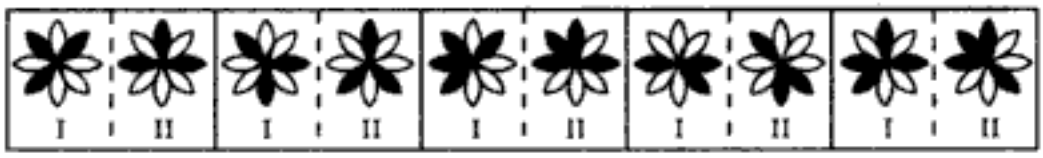
29. 

1 2 3 4 5 **(S.B.I.P.O. 1994)**

30. 

1 2 3 4 5 **(B.S.R.B. 1994)**

31. 

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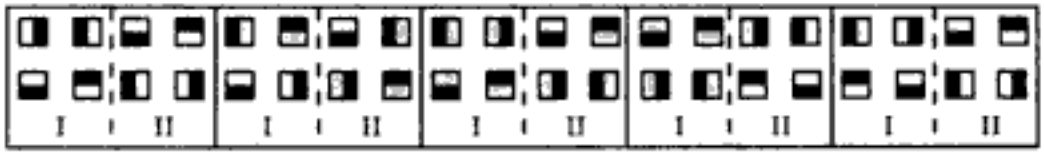
32. 

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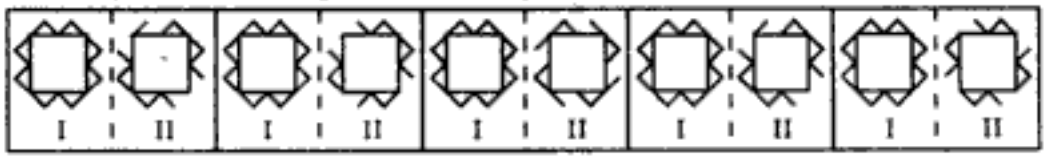
34. 

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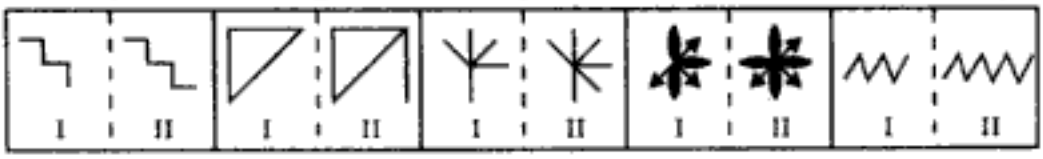
35. 

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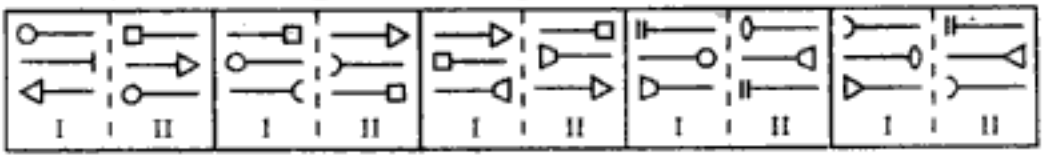
36. 

1 2 3 4 5 **(Bank P.O. 1994)**

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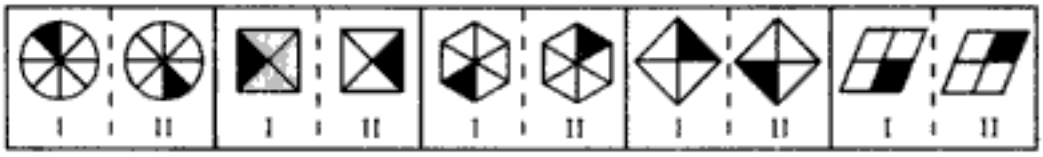

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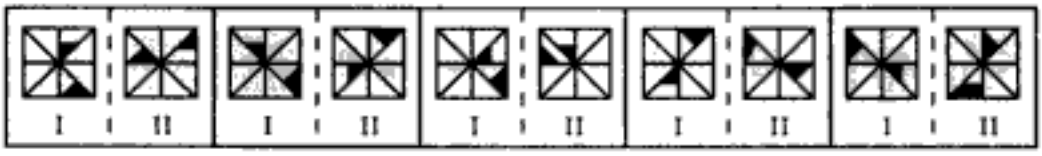

1 2 3 4 5 **(Bank P.O. 1995)**

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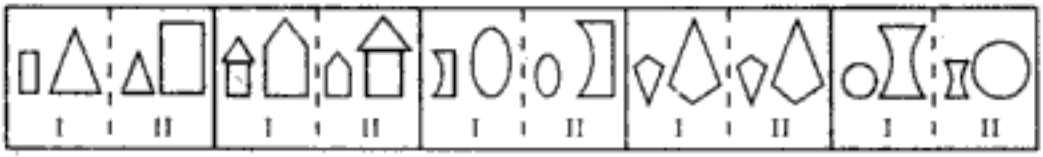

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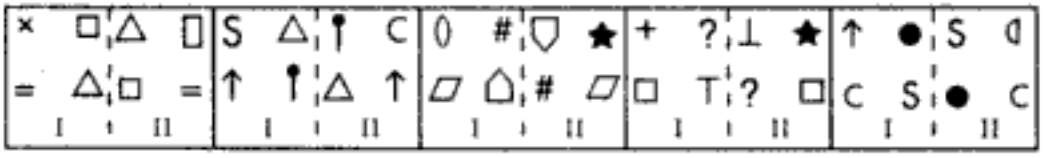

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41.

1 2 3 4 5 **(B.S.R.B. 1994)**

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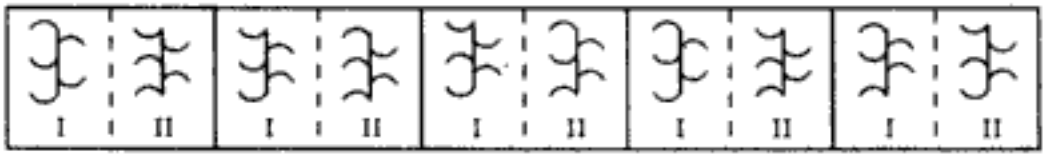

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43.

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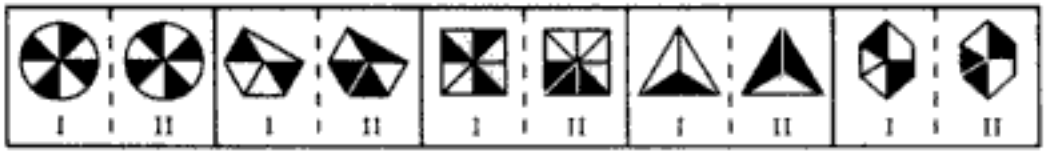

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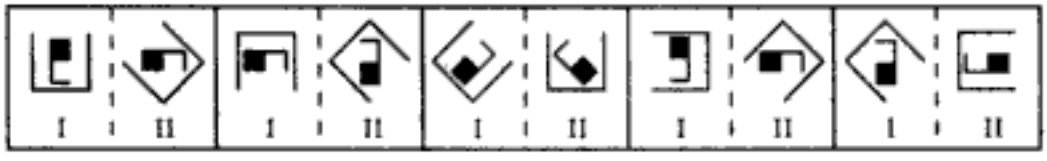

1 2 3 4 5 **(Bank P.O. 1993)**

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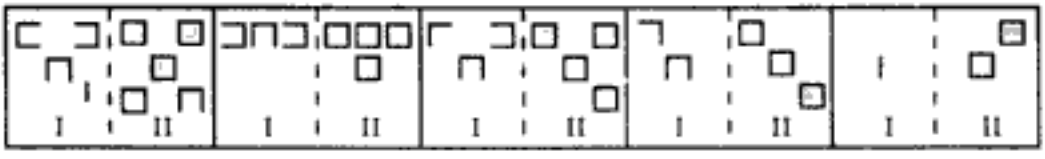

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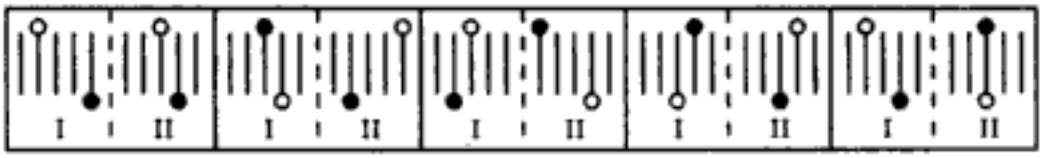

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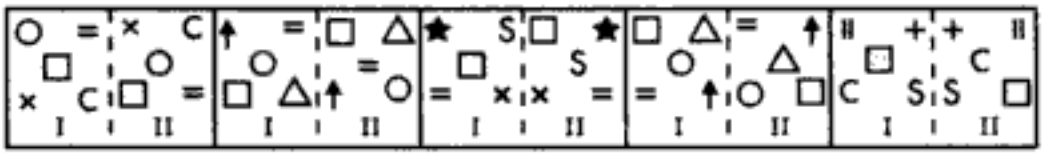

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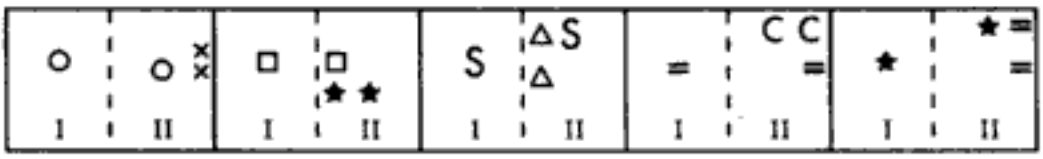

1 2 3 4 5 **(S.B.I.P.O. 1995)**

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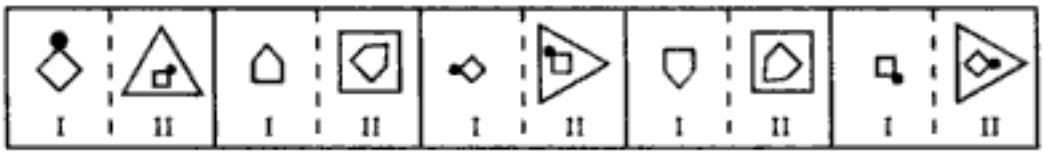

1 2 3 4 5 **(Bank P.O. 1990)**

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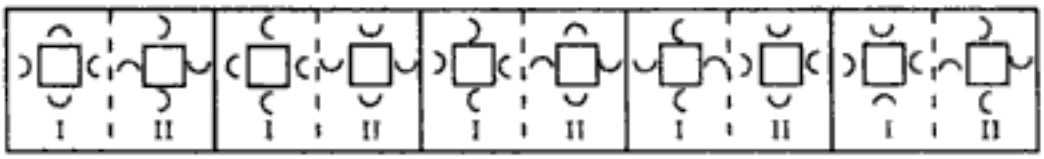

1 2 3 4 5 **(Bank P.O. 1994)**

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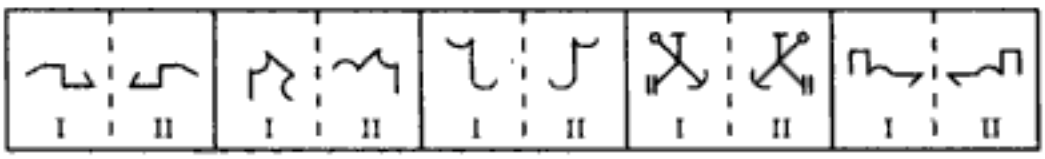

1 2 3 4 5 **(S.B.I.P.O. 1995)**

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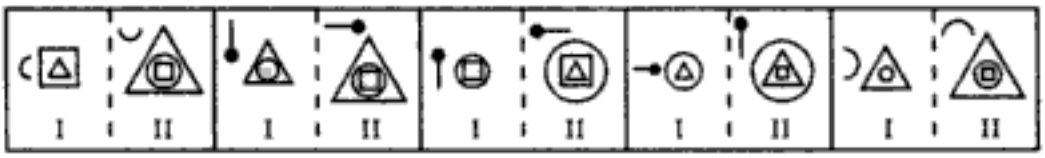

1 2 3 4 5 **(Bank P.O. 1995)**

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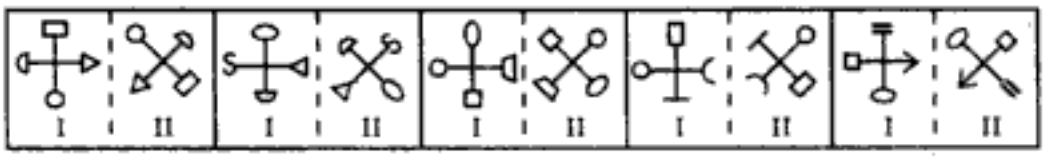

1 2 3 4 5 **(Bank P.O. 1994)**

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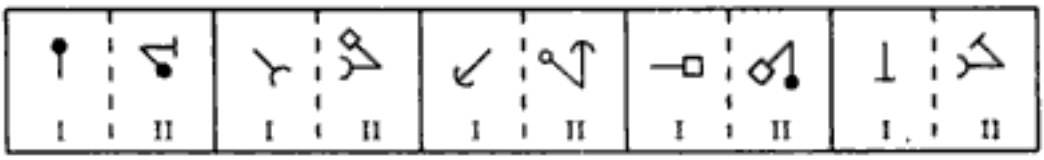
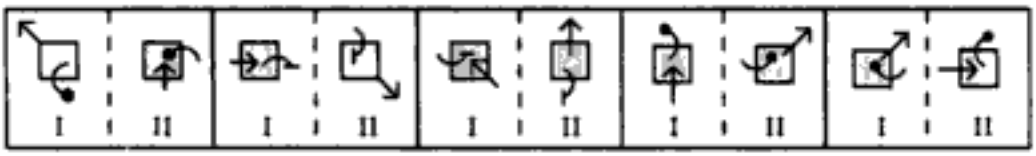
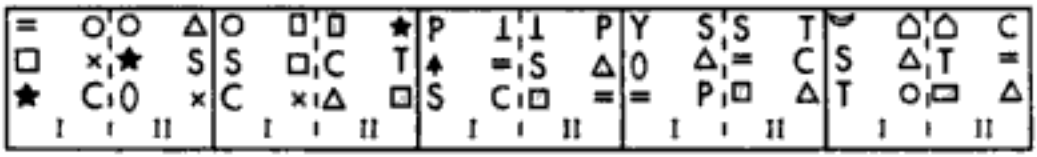


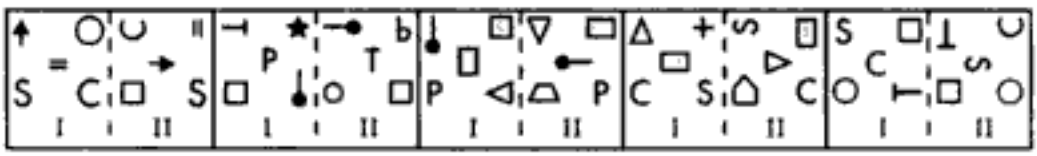
1 2 3 4 5 **(S.B.I.P.O. 1995)**

66. 

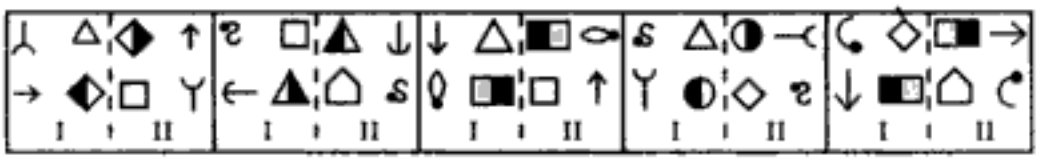
1 2 3 4 5 (Bank P.O. 1995)

67. 

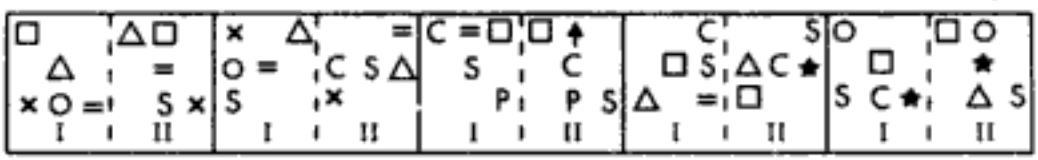
1 2 3 4 5 (S.B.I.P.O. 1995)

68. 

1 2 3 4 5 (S.B.I.P.O. 1995)

69. 

1 2 3 4 5 (Bank P.O. 1994)

70. 

1 2 3 4 5 (Bank P.O. 1995)

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fig. formed. The lines are placed alternately inside and outside the fig. This forms (II).

24. (*4*) : In all other pairs, (I) is laterally inverted, the larger portion is made small and the small portion is enlarged, the bent arrow is inverted and the arrowhead is also inverted, to get (II).

25. (*3*) : In all other pairs; the inner part of the fig. in (I) is divided into two and the two parts are laterally inverted. The outer enclosing fig. is reduced in size and placed between the two parts. This gives (II).

26. (*3*) : Except in (*3*), in all other figures one line is added to (I) to form (II).

27. (*3*) : The first figure is inverted, moved ACW and two more leaves are added to it to form the second figure.

28. (*2*) : In all other pairs, the second element is exactly half of (I).

29. (*5*) : In all other pairs, out of the outer 16 lines, ten lines are removed from (I) to form (II).

30. (*4*) : In all other pairs, the arc moves to the adjacent side ACW and rotates through 180° while the pin moves through 'one and a half' side of the square in an ACW direction. This forms (II) from (I).

31. (*5*) : In all other pairs, the first element rotates 45° CW to form (II).

32. (*1*) : In all the pairs, except (*1*); each one of the half shaded squares is rotated 90° ACW to form (II) from (I).

33. (*2*) : In all other pairs, the fig. in (I) is replaced by a new fig. with one more side and the same number of lines as the number of sides in (I) is introduced to form (II).

34. (*3*) : In all other pairs, lines are removed either from similar positions on the four sides, or from consecutive positions or with a gap of one line.

35. (*5*) : In all other pairs, (II) is obtained by adding line one or one leaf to (I).

36. (*3*) : In all other pairs, one of the three symbols is replaced by a new one.

37. (*5*) : In all cases, except (*5*); the shading moves to the vertically opposite position.

38. (*3*) : In all other pairs, the shadings move two steps ACW.

39. (*4*) : In all other pairs, the two symbols in first element interchange positions and sizes to form (II).

40. (*5*) : In all other pairs, the symbols in (I) move in the order  and the symbol that reaches the upper right position gets replaced by a new one and the symbol that reaches the upper left position gets inverted. Thus, (II) is formed.

41. (*1*) : In all other pairs, the symbols move in the order  . The symbol that reaches upper right position rotates 90° CW; the symbols that reach the upper-left and the lower-right positions get inverted and the symbol that reaches the lower-left position rotates 90° ACW. Thus, (II) is formed from (I).

42. (*1*) : In all other pairs, all the arcs except the one in the lower right position, get inverted to form (II) from (I).

43. (*5*) : In all other pairs, one line is added to each one of the complete or incomplete squares to from the second figure from the first one.

44. (*3*) : In all other pairs, the unshaded portions of (I) are shaded while the shaded portions are made un-shaded, to obtain (II).

45. (*4*) : In all other pairs, the outer cup in (I) rotates 45° ACW and the inner fig. rotates 90° ACW and gets inverted or laterally inverted to form (II).

46. (*1*) : In all other pairs, all the incomplete squares in (I) are completed and a new complete square is added to from (II).

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69. (*4*) : In all other pairs, the diagonally opposite symbols in (I) interchange positions. The new upper left symbol gets laterally inverted; the lower right symbol gets inverted upside down; the upper right symbol rotates 90° ACW and a new symbol appears at the lower left position.

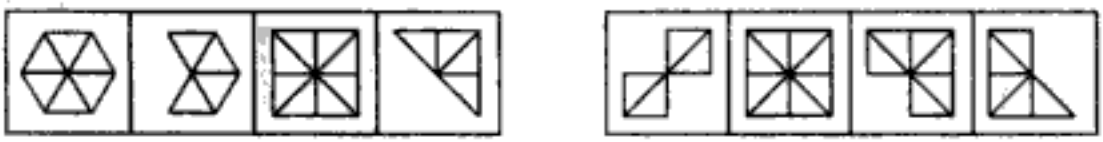
70. (*4*) : In all other pairs, (II) can be obtained from first by moving the symbols in the order shown below or in orders obtained by rotating the following order through 90° or 180°

The symbol at the encircled position gets replaced by a new one.

TYPE 5 : DETECTING THE RELATIONSHIP AND CHOOSING THE CORRECT SUBSTITUTE

This type of questions contains figures A, B, C and D in the Problem Set and figures 1, 2, 3 and 4 in the Answer Set. It is required to select a figure from the Answer Set which best substitutes fig. D of the Problem set such that element D is related to the element C in the same way as element B is related to element A. If none of the answers is suitable then answer is 5.

Example : **PROBLEM FIGURES** **ANSWER FIGURES**



A B C D 1 2 3 4

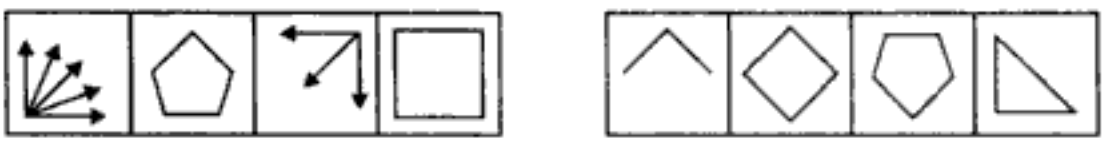
Solution : Here, two triangles from fig. (A) are lost to form fig. (B). With this relationship we find that with the loss of two triangles from fig. (C), fig. (3) will be formed. So, fig. (3) is the answer.

EXERCISE 2E

Directions : ***Each of the following questions bears four figures numbered A, B, C and D which constitute the Problem Set and four other figures numbered 1, 2, 3 and 4 which constitute the Answer Set. Figures A and B are related in a particular way. Establish a similar relationship between figures C and D by choosing a figure from the Answer set that would best substitute fig. (D) in the Problem set. In case if none of the figures of the Answer set is suitable then answer is 5.***

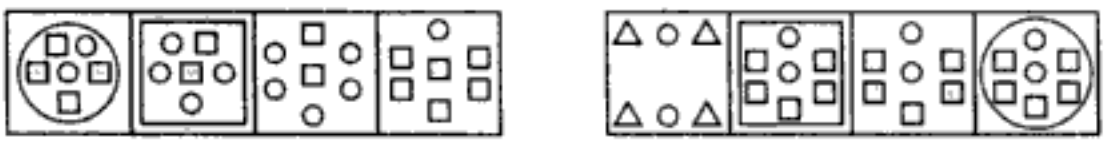
PROBLEM FIGURES ANSWER FIGURES

1.



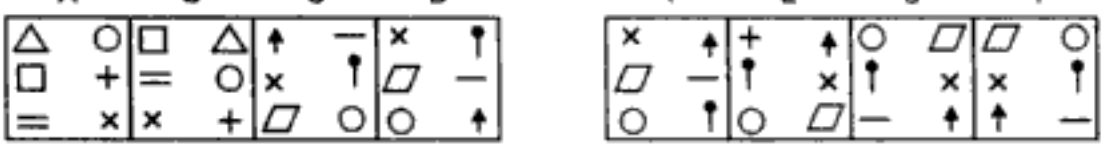
A B C D 1 2 3 4

2.



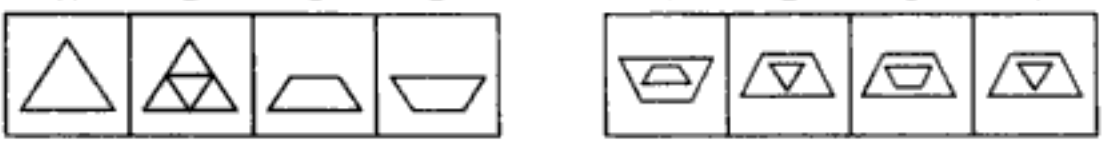
A B C D 1 2 3 4

3.



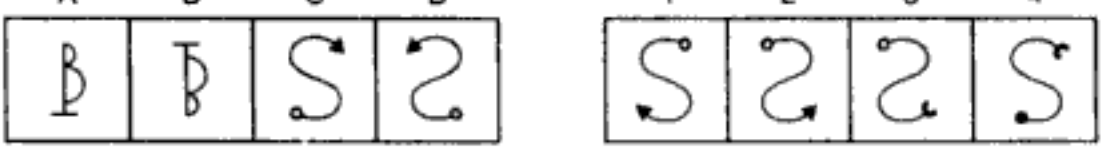
A B C D 1 2 3 4

4.



A B C D 1 2 3 4

5.

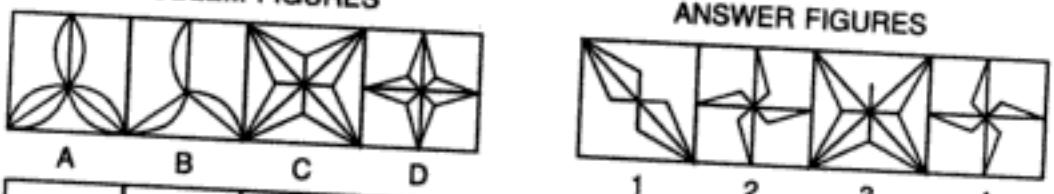


A B C D 1 2 3 4

PROBLEM FIGURES

ANSWER FIGURES

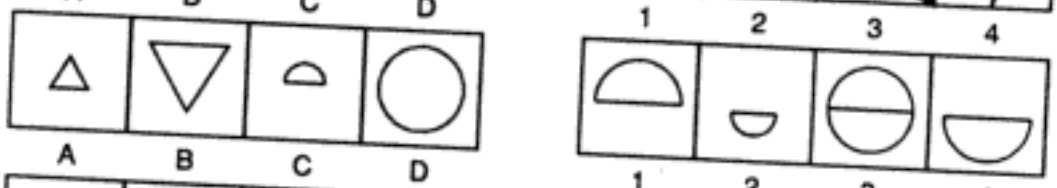
6.



A B C D

1 2 3 4

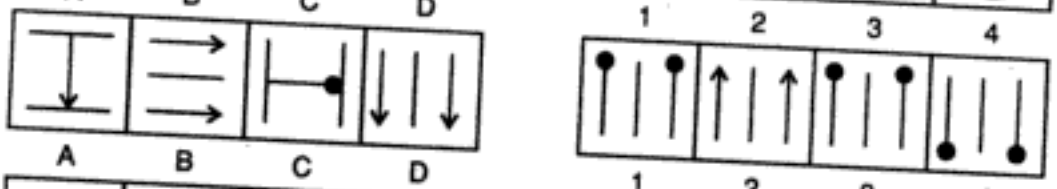
7.



A B C D

1 2 3 4

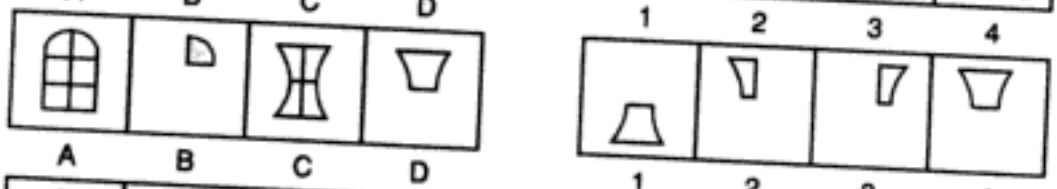
8.



A B C D

1 2 3 4

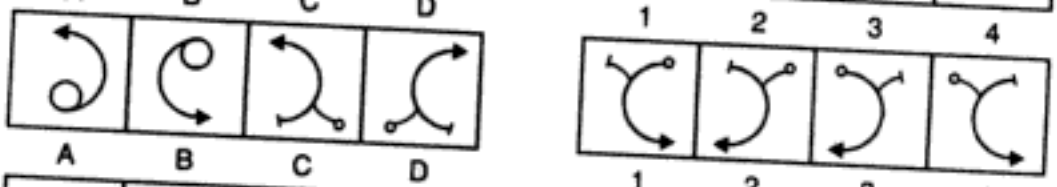
9.



A B C D

1 2 3 4

10.



A B C D

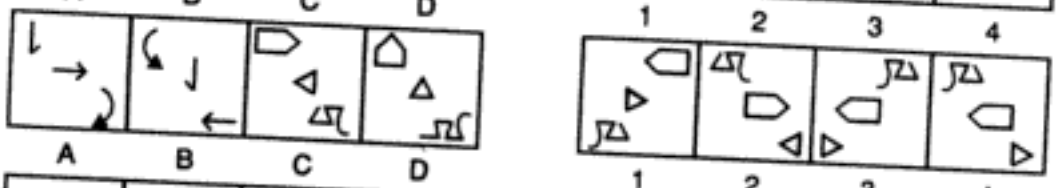
1 2 3 4

11.

A B C D

1 2 3 4

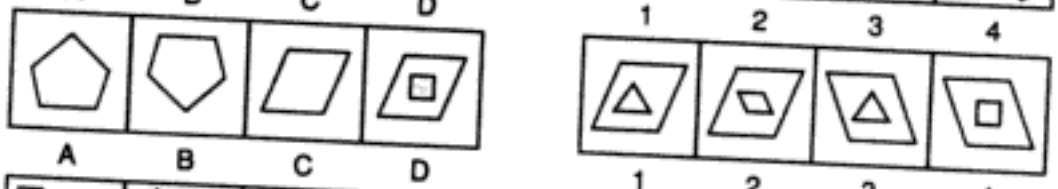
12.



A B C D

1 2 3 4

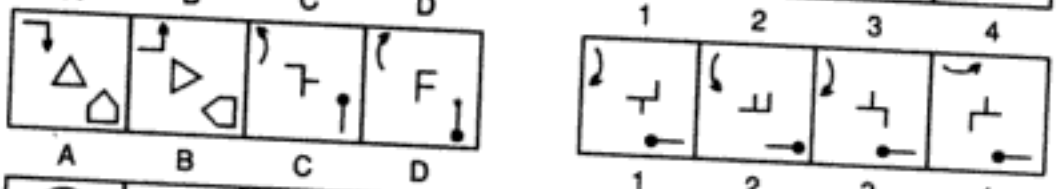
13.



A B C D

1 2 3 4

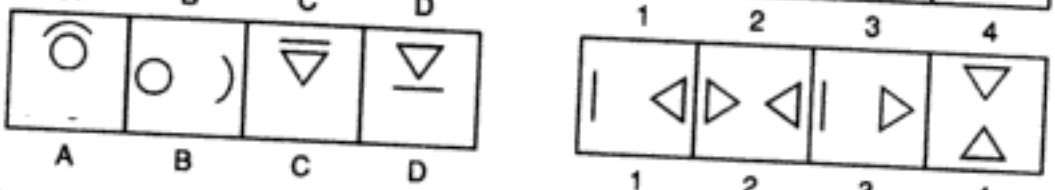
14.



A B C D

1 2 3 4

15.



A B C D

1 2 3 4

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3. CLASSIFICATION

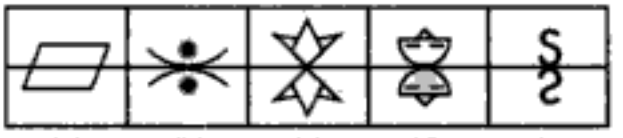
In the chapter on classification, we deal with problems of 'Odd-Man-Out' type. In such problems, we are given a set of figures, such that, all except one have similar characteristics/features. We are required to select the figure which differs from all other figures in the given set. Several other types of problems based upon classification are also discussed in details in this chapter.

TYPE 1 : CHOOSING THE ODD FIGURE

Under this heading, we study problems in each of which we are given five/four figures, out of which all except one are alike in some manner. We have to select the exclusively different figure in the given set.

Following examples will make understanding easier :

Example 1 : ***Given below are five figures, out of which four are alike in some manner. Find the figure which differs from all other figures.***



(a) (b) (c) (d) (e)

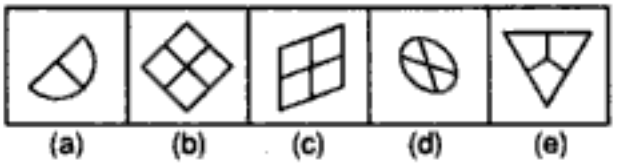
Solution : Except in fig (a), in all other figures the figures on either side of the central horizontal line are inverted images of each other. Hence, fig. (a) is the answer.

Example 2 : ***Out of the following five figures, four are alike in some manner and one differs from these in that manner. Select the odd figure.***

(a) (b) (c) (d) (e)

Solution : Except in fig. (b), in all other figures, the outer figure encloses a figure with one side more than the outer figure. Hence, fig. (b) is the answer.

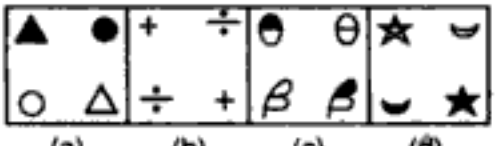
Example 3 : ***From amongst the following five figures, select the one which is different from all others.***



(a) (b) (c) (d) (e)

Solution : Except fig. (d), all other figures are divided into equal parts. Hence, fig. (d) is the answer.

Example 4 : ***From amongst the following four figures, select the one which is different from all others.***



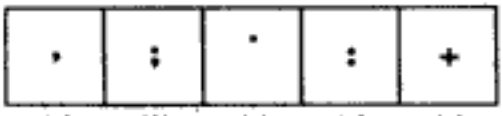
(a) (b) (c) (d)

(C.B.I. 1993)

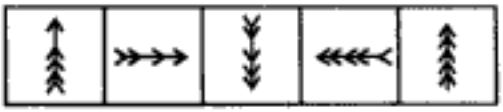
Solution : In all the figures except fig. (c), the similar symbols (one black and the other white) appear at diagonally opposite corners while in fig. (c), they appear in adjacent corners.

EXERCISE 3A

Directions : ***Out of the five figures (a), (b), (c), (d) and (e), given in each problem, four are similar in a certain way. However, one figure is not like the other four. Choose the figure which is different from the rest.***

1. 
(a) (b) (c) (d) (e)

2. 
(a) (b) (c) (d) (e)

3. 
(a) (b) (c) (d) (e)

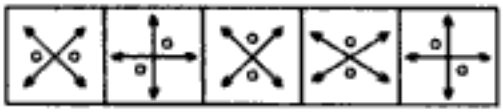
(B.S.R.B. 1990)

4. 
(a) (b) (c) (d) (e)

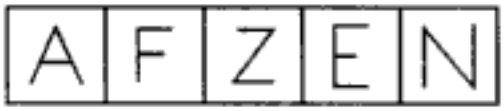
5. 
(a) (b) (c) (d) (e)

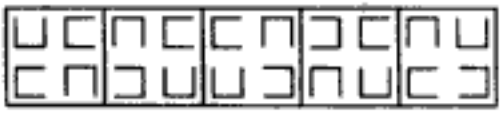
6. 
(a) (b) (c) (d) (e)

7. 
(a) (b) (c) (d) (e)

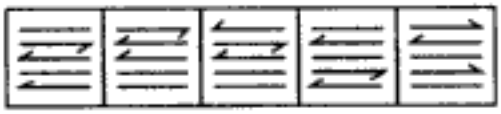
8. 
(a) (b) (c) (d) (e)

(Bank P.O. 1991)

9. 
(a) (b) (c) (d) (e)

10. 
(a) (b) (c) (d) (e)

(B.S.R.B. 1995)

11. 
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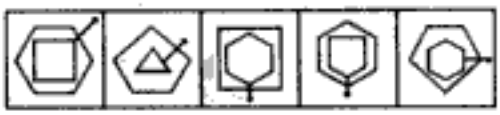
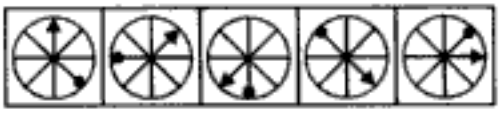
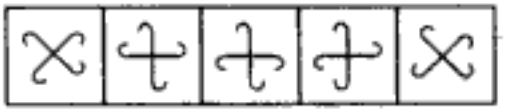
12. 
(a) (b) (c) (d) (e)

13. 
(a) (b) (c) (d) (e)

14. 
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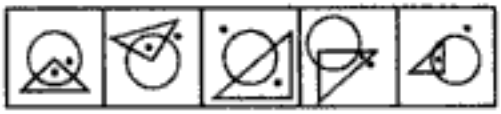
(B.S.R.B. 1996)

15. 
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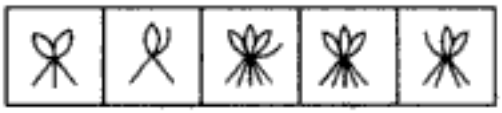
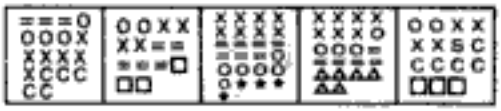
16. 
(a) (b) (c) (d) (e)

(Bank P.O. 1994)

17. 
(a) (b) (c) (d) (e)

18. 
(a) (b) (c) (d) (e)

19. 
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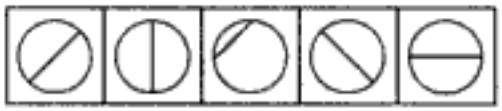
(B.S.R.B. 1995)

20. 
(a) (b) (c) (d) (e)

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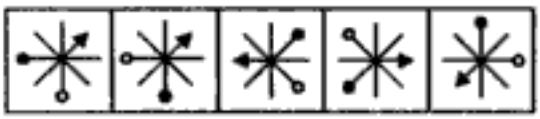
43. 
(a) (b) (c) (d) (e)

(B.S.R.B. 1995)

44. 
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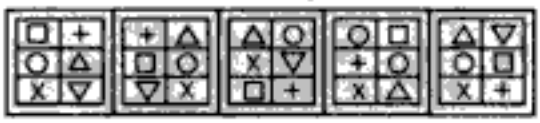
45. 
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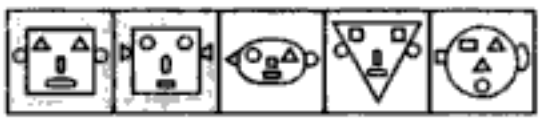
46. 
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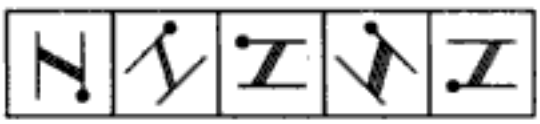
47. 
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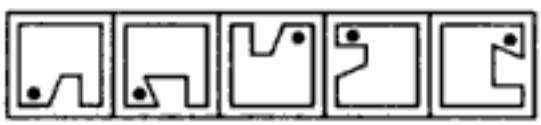
48. 
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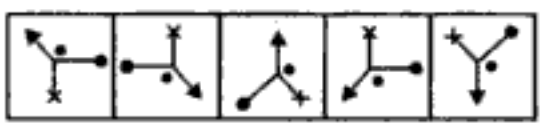
(B.S.R.B. 1992)

49. 
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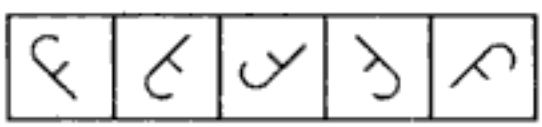
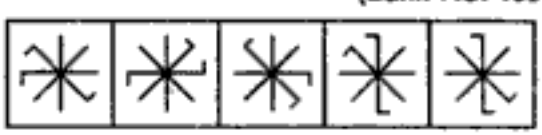
50. 
(a) (b) (c) (d) (e)

51. 
(a) (b) (c) (d) (e)

(Bank P.O. 1994)

52. 
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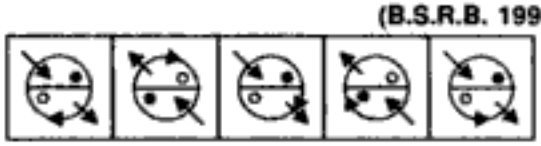
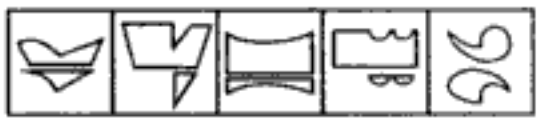
(B.S.R.B. 1994)

53. 
(a) (b) (c) (d) (e)

54. 
(a) (b) (c) (d) (e)

55. 
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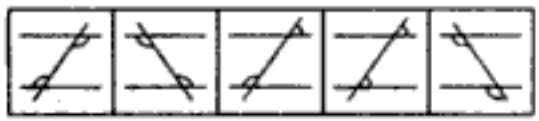
(B.S.R.B. 1995)

56. 
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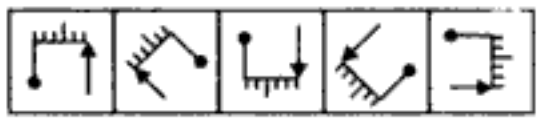
57. 
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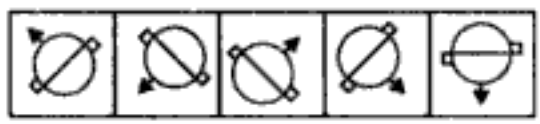
(B.S.R.B. 1995)

58. 
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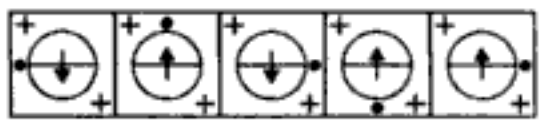
59. 
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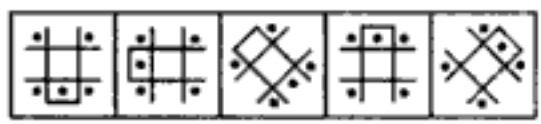
60. 
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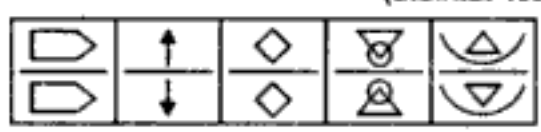
(B.S.R.B. 1996)

61. 
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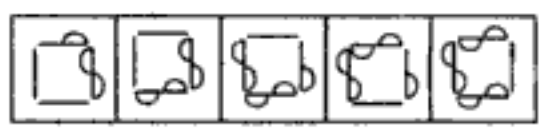
63. 
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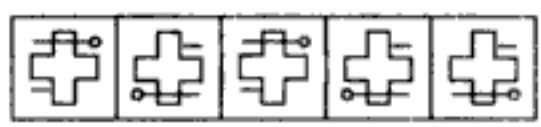
64. 
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109.

(a) (b) (c) (d) (e)

110.

(a) (b) (c) (d) (e)

111.

(a) (b) (c) (d) (e)

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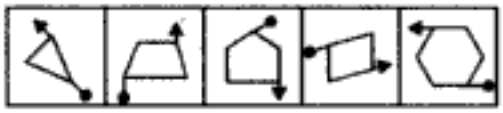

(a) (b) (c) (d) (e)
(B.S.R.B. 1992)

113.

(a) (b) (c) (d) (e)
(B.S.R.B. 1994)

114.

(a) (b) (c) (d) (e)

115.

(a) (b) (c) (d) (e)
(B.S.R.B. 1996)

116.

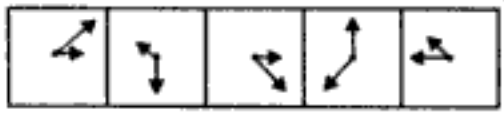
(a) (b) (c) (d) (e)
(B.S.R.B. 1994)

117.

(a) (b) (c) (d) (e)

118.

(a) (b) (c) (d) (e)
(B.S.R.B. 1995)

119.

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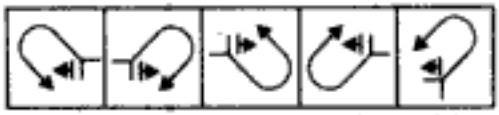
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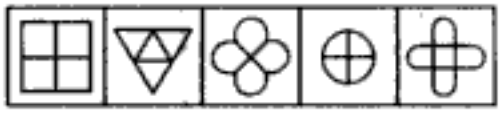
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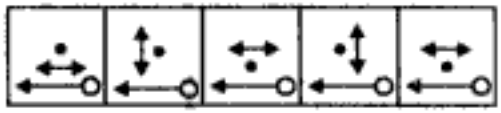
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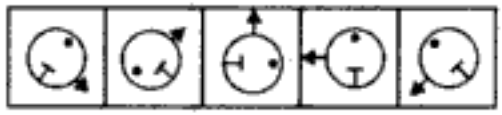
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(B.S.R.B. 1992)

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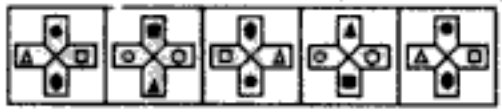
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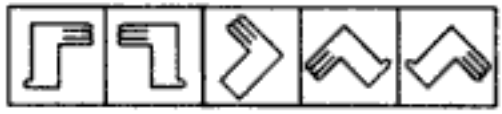
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128.

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129.

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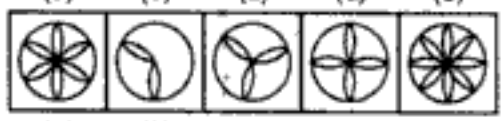
130.

(a) (b) (c) (d) (e)

131.

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(B.S.R.B. 1994)

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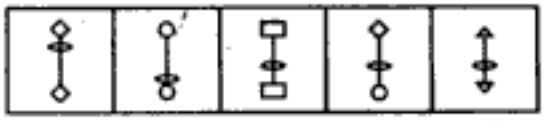
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156.

(a) (b) (c) (d) (e)

(B.S.R.B. 1992)

157.

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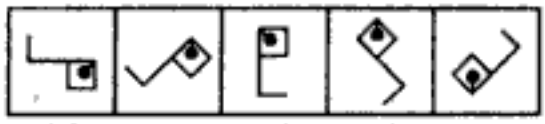
158.

(a) (b) (c) (d) (e)

(B.S.R.B 1993)

159.

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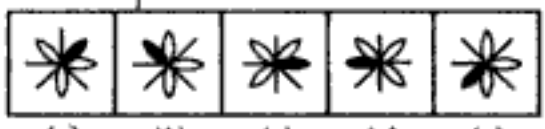
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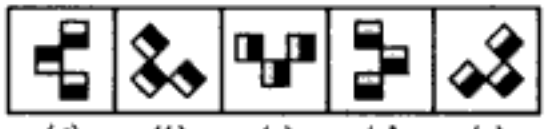
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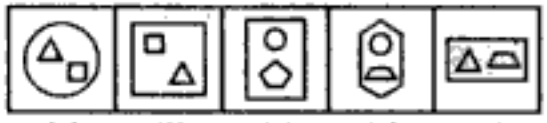
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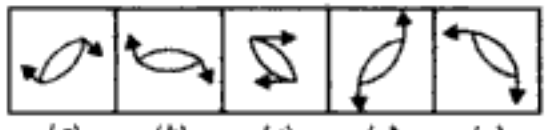
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(Bank P.O. 1991)

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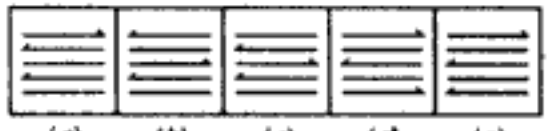
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165.

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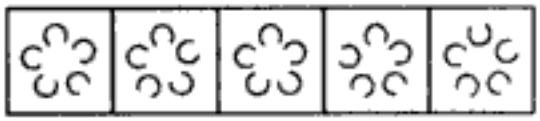
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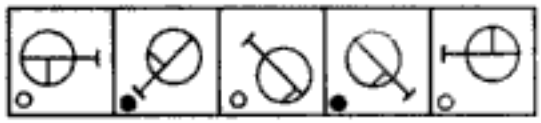
167.

(a) (b) (c) (d) (e)

(B.S.R.B. 1993)

168.

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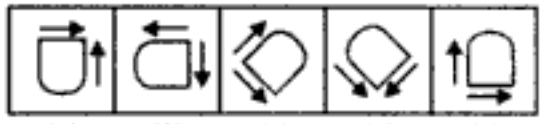
169.

(a) (b) (c) (d) (e)

(Bank P.O. 1989)

170.

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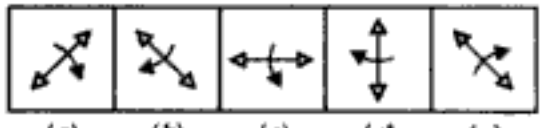
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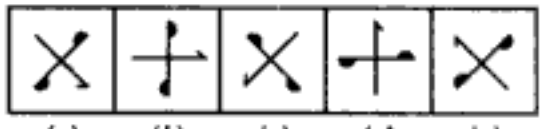
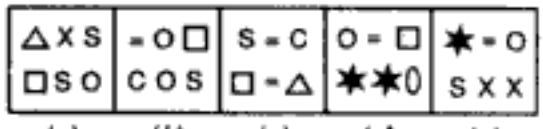
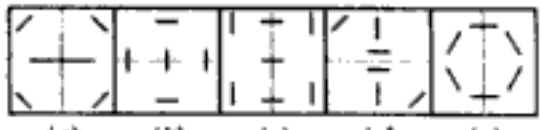

(a) (b) (c) (d) (e)

(B.S.R.B. 1993)

173.


(a) (b) (c) (d) (e)

(B.S.R.B. 1996)

174.

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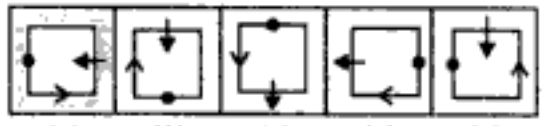
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(Bank P.O. 1993)

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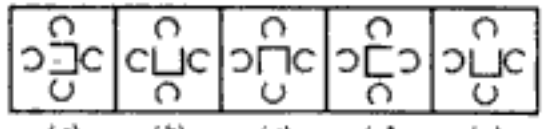
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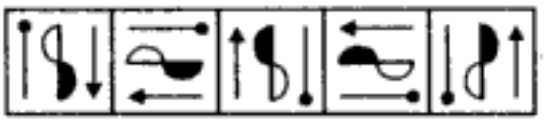
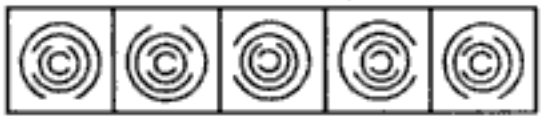

(a) (b) (c) (d) (e)

200.

(a) (b) (c) (d) (e)

(Bank P.O. 1991)

201.

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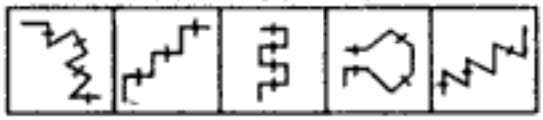
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203.

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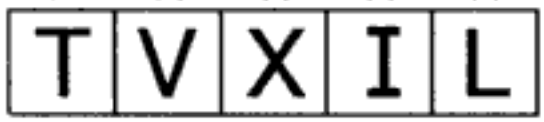

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205.

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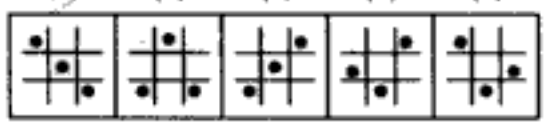
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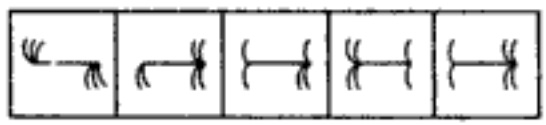
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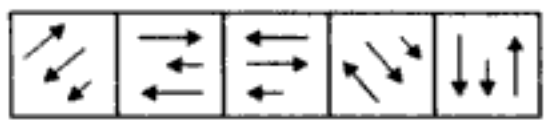
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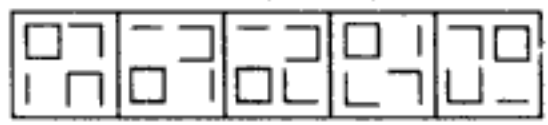
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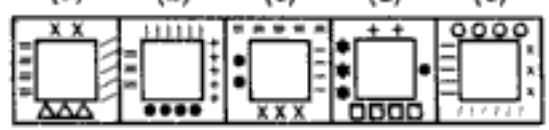
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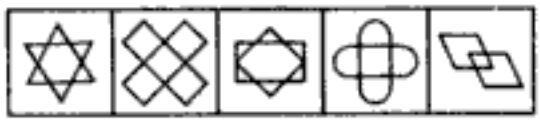
(B.S.R.B. 1996)

211.

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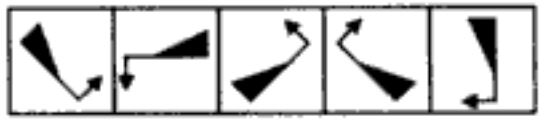
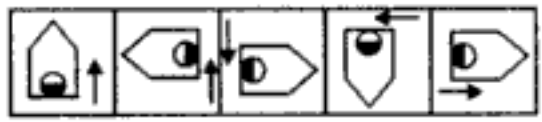

(a) (b) (c) (d) (e)

(Bank P.O. 1993)

213.

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214.

(a) (b) (c) (d) (e)

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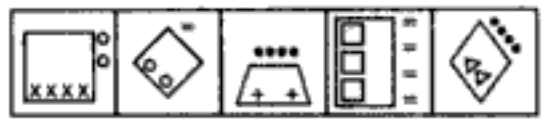
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216.

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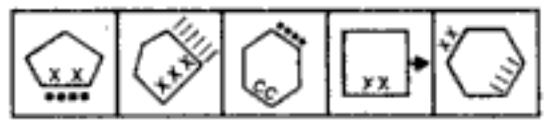
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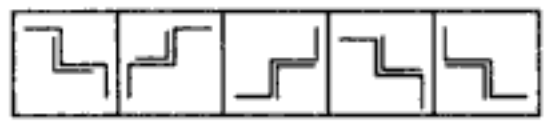
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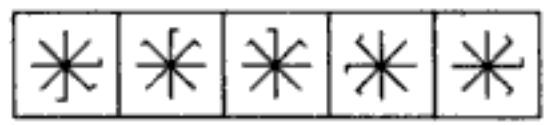
(Bank P.O. 1989)

219.

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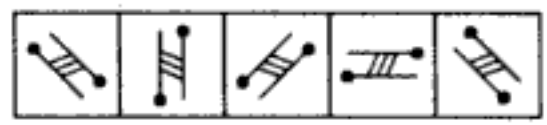
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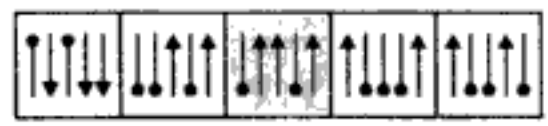
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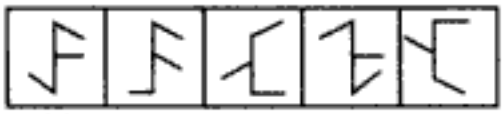
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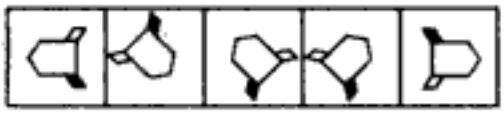
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(B.S.R.B. 1993)

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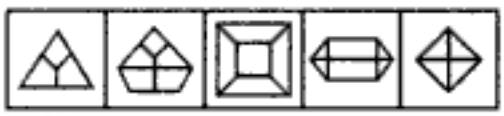
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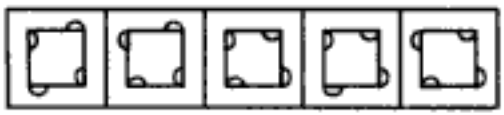
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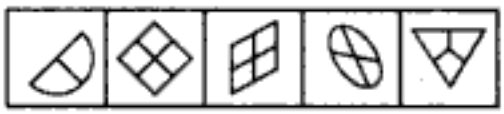
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(Bank P.O. 1993)

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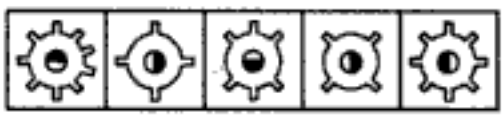
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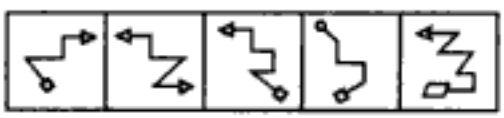
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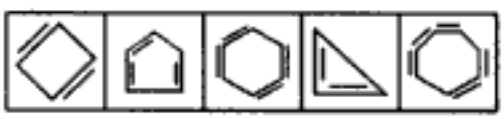
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(Bank P.O. 1989)

187.

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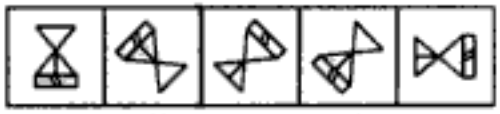
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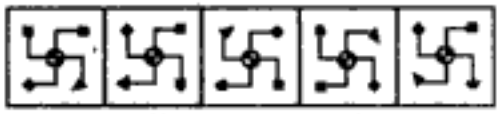
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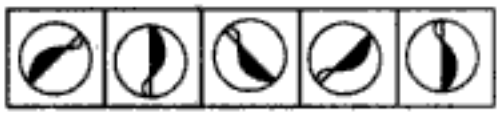
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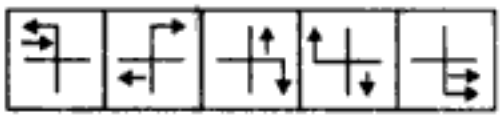
(Bank P.O. 1991)

191.

(a) (b) (c) (d) (e)

192.

(a) (b) (c) (d) (e)

193.

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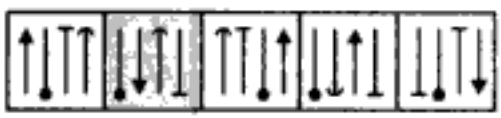

(a) (b) (c) (d) (e)

196.

(a) (b) (c) (d) (e)

197.

(a) (b) (c) (d) (e)

(Bank P.O. 1994)

198.

(a) (b) (c) (d) (e)

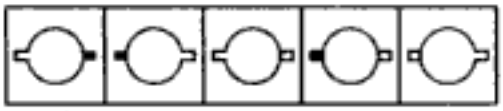
222. 

(a) (b) (c) (d) (e)

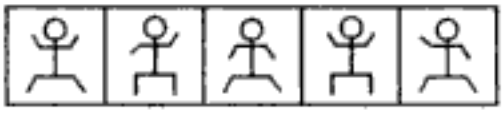
(Bank P.O. 1993)

223. 

(a) (b) (c) (d) (e)

224. 

(a) (b) (c) (d) (e)

225. 

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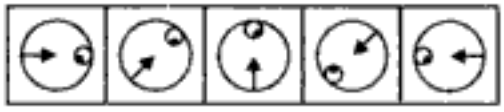
(B.S.R.B. 1996)

226. 

(a) (b) (c) (d) (e)

227. 

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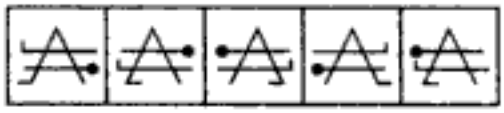
228. 

(a) (b) (c) (d) (e)

(Bank P.O. 1994)

229. 

(a) (b) (c) (d) (e)

230. 

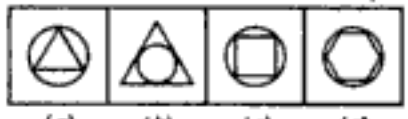
(a) (b) (c) (d) (e)

Directions : ***Choose the figure which is different from the others.***

231. 

(a) (b) (c) (d)

(I. Tax, 1994)

231. 

(a) (b) (c) (d)

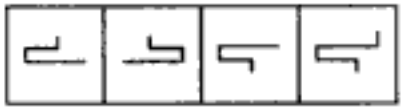
(S.S.C. 1994)

233. 

(a) (b) (c) (d)

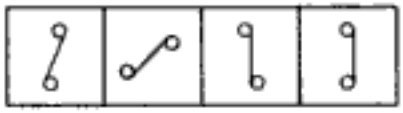
234. 

(a) (b) (c) (d)

235. 

(a) (b) (c) (d)

(Central Excise, 1992)

236. 

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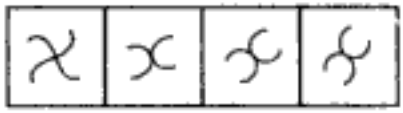
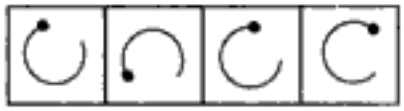
(Asstt. Grade, 1995)

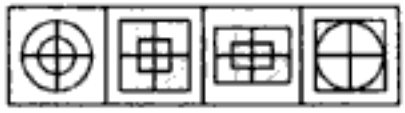
237. 

(a) (b) (c) (d)

(U.D.C. 1995)

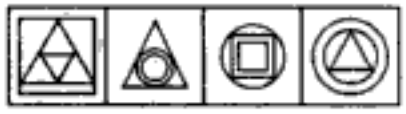
238. 

(a) (b) (c) (d)

239. 

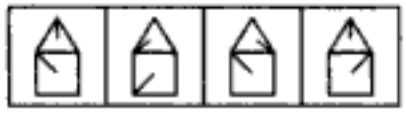
(a) (b) (c) (d)

(C.B.I. 1995)

240. 

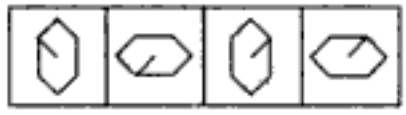
(a) (b) (c) (d)

(S.S.C. 1995)

241. 

(a) (b) (c) (d)

(C.B.I. 1994)

242. 

(a) (b) (c) (d)

(Section Officers', 1993)

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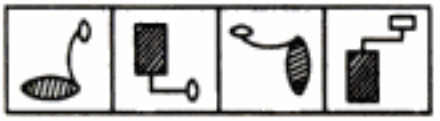
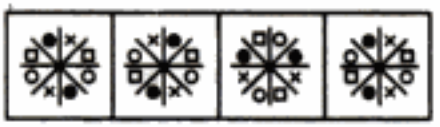
263.



(a) (b) (c) (d)

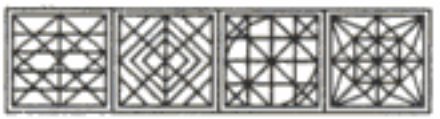
264.



(a) (b) (c) (d)

(S.S.C. 1994)

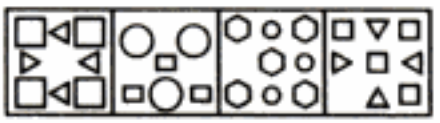
265.



(a) (b) (c) (d)

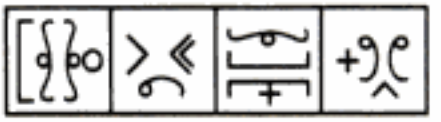
(U.D.C. 1995)

266.



(a) (b) (c) (d)

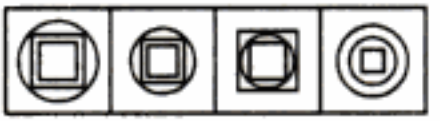
267.



(a) (b) (c) (d)

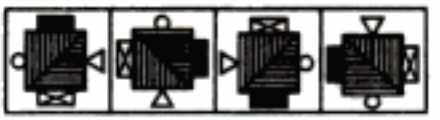
(C.B.I. 1993)

268.



(a) (b) (c) (d)

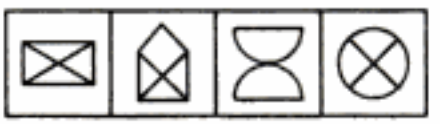
269.



(a) (b) (c) (d)

(I. Tax, 1996)

270.



(a) (b) (c) (d)

(C.B.I. 1994)

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149. (*d*) : All other figures consist of three straight lines and one semi-circle.

150. (*d*) : In all other figures, the line appears opposite the arc.

151. (*a*) : All other figures can be rotated into each other.

152. (*e*) : In all other figures, only one edge of the cuboid is absent.

153. (*d*) : In all other figures, the circle contains equal chords.

154. (*b*) : Fig. (*a*) can be rotated into fig. (*c*) and fig. (*d*) can be rotated into fig. (*e*).

155. (*d*) : The figures on either side of the line are different only in fig. (*d*).

156. (*d*) : In all other figures, the arrow and the pin are at right angles to each other.

157. (*e*) : In all other figures, the shadings in the two halves of the circle occupy similar positions.

158. (*d*) : In all other figures, a line starts from one of the ends of the diagonal of the quadrilateral and intersects one of the sides of the quadrilateral.

159. (*d*) : In all other figures, the pin inside the square is attached to one end of the extended side of the square.

160. (*a*) : All other figures have a line twice the length of a leaf.

161. (*a*) : In all other figures, the three squares have the same halves shaded.

162. (*b*) : Other figures contain a large figure enclosing two other different figures; while in fig. (*b*) the larger figure contains two figures one of which is similar to itself.

163. (*e*) : In each of the other figures, the two arrows are in the opposite directions.

164. (*d*) : In all other figures, one arrow points towards the right hand side and two arrows point towards the left hand side.

165. (*c*) : All other figure can be rotated into one another.

166. (*c*) : This is the only figure in which all the arcs are curved inside.

167. (*e*) : In each of the other cases, the outer figure encloses a similar dark figure.

168. (*c*) : If the main figure in each case is rotated such that the line outside the circle and perpendicular to the diameter of the circle comes on the top, then in each figure except (*c*), the small line inside the circle and perpendicular to the diameter occurs on the right hand side while in fig. (*c*), it occurs on the left hand side.

169. (*a*) : In all other figures, the outer figure encloses a figure with two less number of sides.

170. (*b*) : If all the figures are rotated to a position with the flat side up, then in each one of the figures except fig. (*b*) an arrow appears on the top and another one appears on the right hand side.

171. (*c*) : All other figures can be rotated into each other.

172. (*c*) : In all other figures, one of the lines has a bent end while a semi circle on the other line lies towards the bend.

173. (*a*) : In all other figures, the symbols which are repeated are placed either in the same row or in the same column.

174. (*d*) : Only fig. (*d*) is not symmetrical about the dotted line.

175. (*e*) : In all other figures, the arrow head on the square appears on the side adjacent to the side having the dot.

176. (*a*) : In all the figures, two arcs are curved inwards and two outwards. But only in fig. (*a*), the arc at the open end of the central figure is curved outwards.

177. (*b*) : In all other figures, the parallel lines attached to the vertical line, lie on either sides of the vertical line.

178. (*d*) : All other figures can be rotated into each other.

179. (*c*) : All other figures are divided into as many parts as is the number of sides in the figure.

180. (*c*) : In each of the other figures, two arcs are inside the square and two are outside the square.

181. (*d*) : In all other cases, the lines drawn inside the figure divide it into equal parts.

182. (*a*) : In all other figures, the wheel has an even number of projections.

183. (*c*) : Only in fig. (*c*), both the flags are oriented in the same direction.

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262. (*d*) : In all other alternatives, the two figures are identical, though different in size.

263. (*b*) : In all other alternatives, a big, shaded figure is attached to a similar, small, unshaded figure.

264. (*b*) : Only in this figure, the symbols in all the vertically opposite segments are identical.

265. (*c*) : This is the only pattern consisting of curved lines.

266. (*c*) : All other figures consist of an equal number of two types of symbols.

267. (*b*) : All other figures consist of two identical elements and two other different elements.

268. (*c*) : This is the only figure in which the circle and the square fall alternately.

269. (*c*) : All other figures can be rotated into each other.

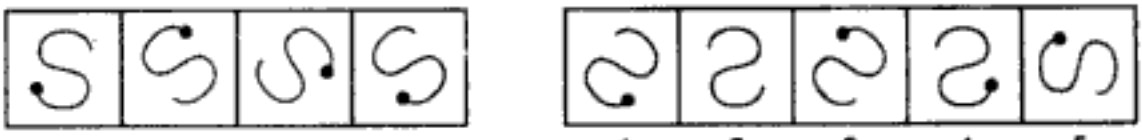
270. (*c*) : All other figures are divided into four parts.

TYPE 2 : CHOOSING A SIMILAR FIGURE

The problems on this type of classification, involve four un-numbered figures followed by five other figures numbered as 1, 2, 3, 4, & 5. The four un-numbered figures forming the Problem Set are alike in a certain manner. A figure, from amongst the numbered ones forming the Answer Set, is to chosen such that it is similar to the Problem figures in that manner.

Example :

Problem Figures **Answer Figures**



1 2 3 4 5

Solution : Clearly, all the problem figures can be rotated into each other. Fig. (5) is also similar to these in that respect.
Hence, fig. (5) is the answer.

EXERCISE 3B

Directions : ***The following problems contain four un-numbered figures forming the Problem Set and five numbered figures (1, 2, 3, 4 & 5) forming the Answer Set. The four Problem figures have certain common features. Select a figure from amongst the Answer Figures which is similar to the Problem Figures.***

Problem Figures **Answer Figures**

1.

1 2 3 4 5

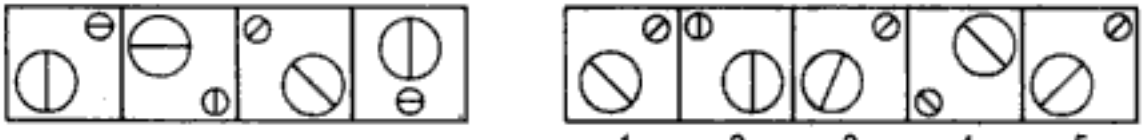
2.

1 2 3 4 5

3.

1 2 3 4 5

4.



1 2 3 4 5

5.

1 2 3 4 5

6.

1 2 3 4 5

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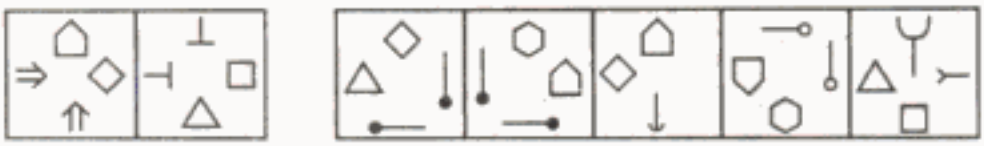
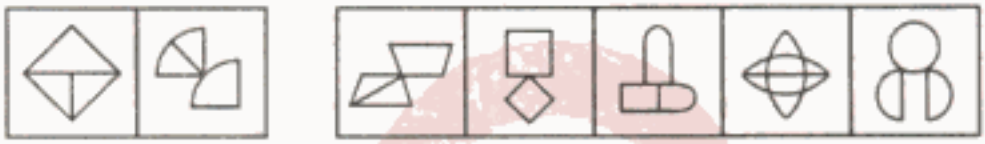
14. 

1 2 3 4 5 (Bank P.O. 1995)

15. 

1 2 3 4 5

16. 

1 2 3 4 5

17. 

1 2 3 4 5

18. 

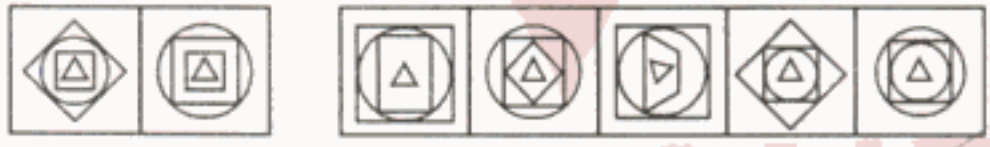
1 2 3 4 5

19. 

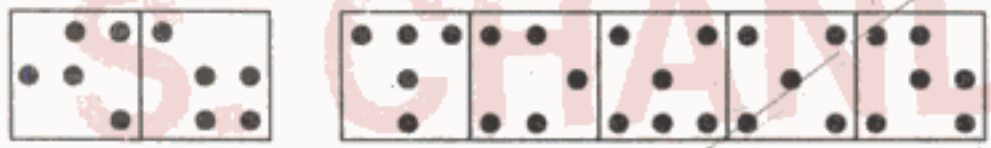
1 2 3 4 5

20. 

1 2 3 4 5

21. 

1 2 3 4 5

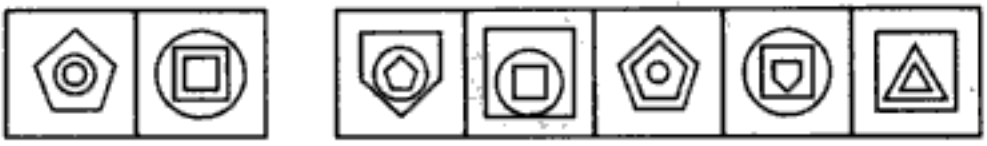
22. 

1 2 3 4 5

23. 

1 2 3 4 5

24.

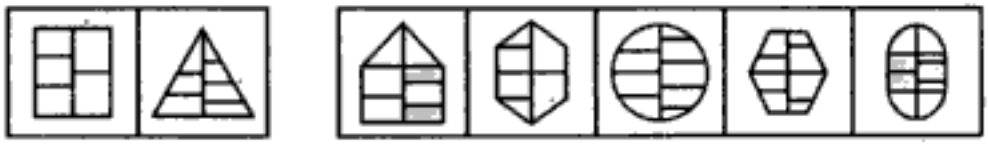


1 2 3 4 5 **(R.B.I. 1992)**

25.

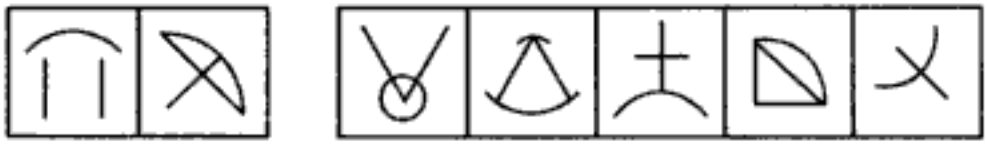
1 2 3 4 5 **(Bank P.O. 1995)**

26.



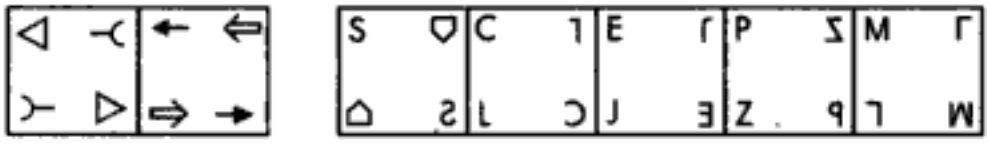
1 2 3 4 5

27.



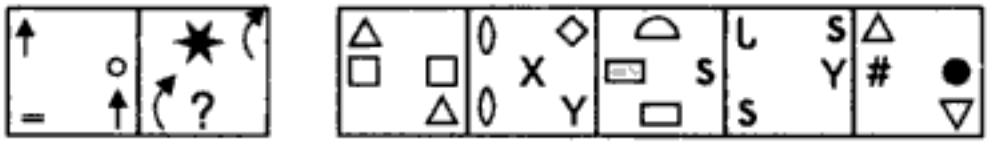
1 2 3 4 5

28.



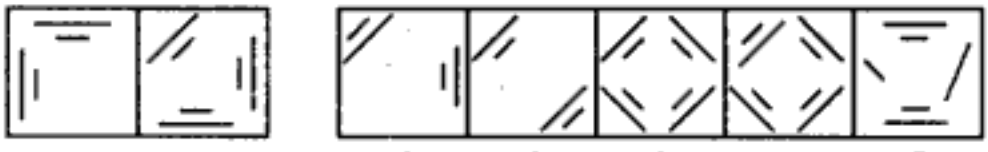
1 2 3 4 5

29.



1 2 3 4 5 **(S.B.I.P.O. 1993)**

30.

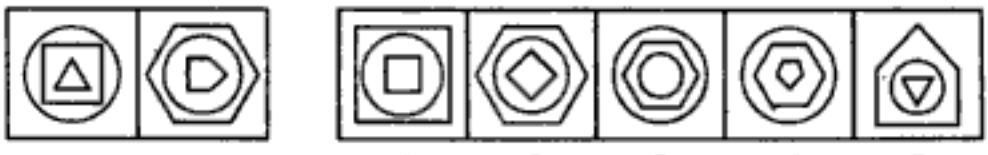


1 2 3 4 5

31.

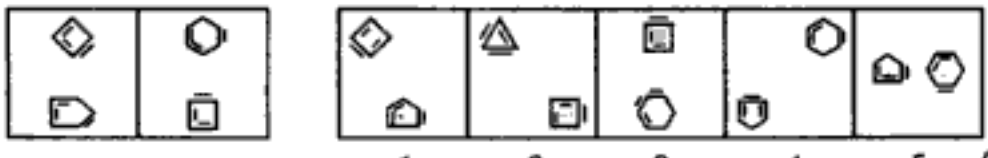
1 2 3 4 5 **(S.B.I. P.O. 1991)**

32.



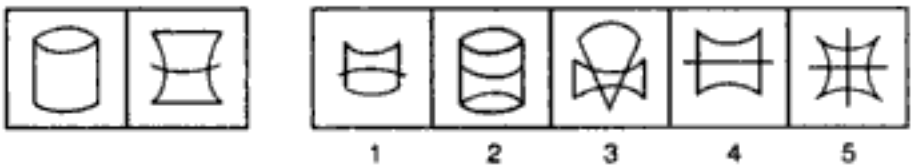
1 2 3 4 5

33.



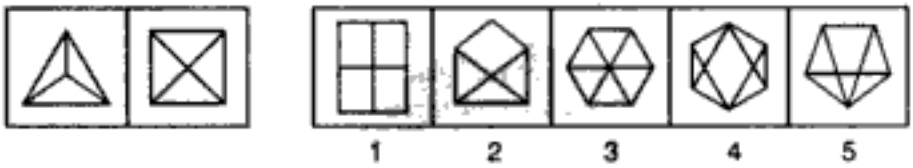
1 2 3 4 5 **(Bank P.O. 1995)**

34.



1 2 3 4 5

35.

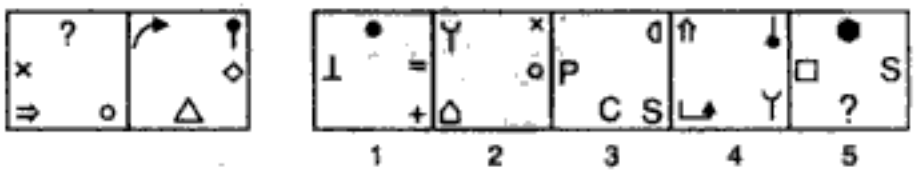


1 2 3 4 5

36.

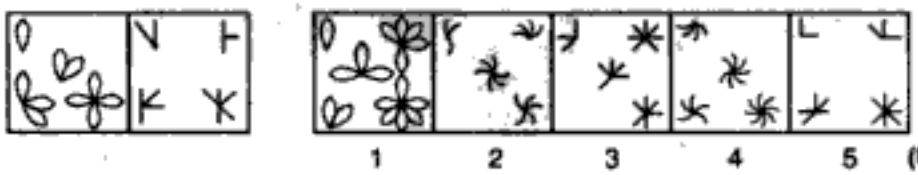
1 2 3 4 5

37.



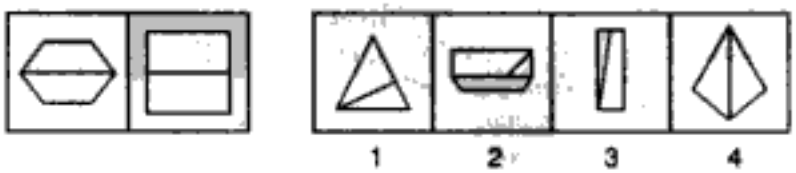
1 2 3 4 5

38.



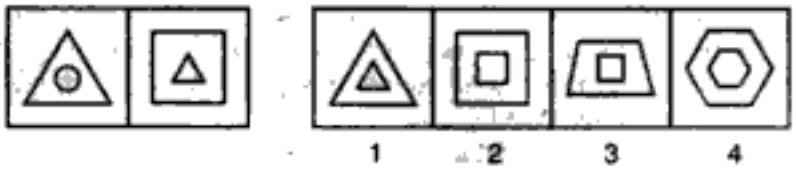
1 2 3 4 5 **(Bank P.O. 1995)**

39.



1 2 3 4 **(I. Tax, 1993)**

40.



1 2 3 4 **(U.D.C. 1994)**

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37. (*3*) : Each figure consists of four symbols, two at the adjacent corners and the other two at the mid-points of two other sides of the square.

38. (*2*) : The number of branches in the four elements of a figure form a continuous order i.e. 1, 2, 3, 4 in the first problem figure; 2, 3, 4, 5 in the second and 3, 4, 5, 6 in fig. (*2*).

39. (*4*) : Each figure is bisected by a line in the centre.

40. (*3*) : The outer and the inner figures are different.

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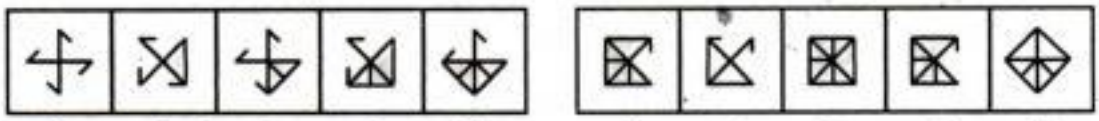
Problem Figures **Answer Figures**

9.

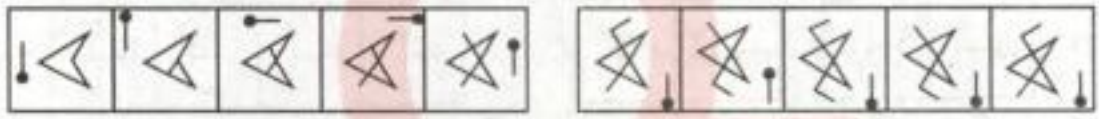


A B C D E 1 2 3 4 5

10.

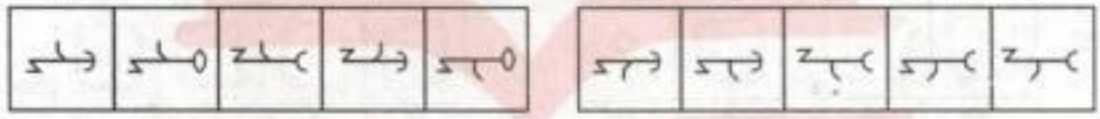
A B C D E 1 2 3 4 5

11.



A B C D E 1 2 3 4 5

12.



A B C D E 1 2 3 4 5

13.

A B C D E 1 2 3 4 5

14.

A B C D E 1 2 3 4 5

15.

A B C D E 1 2 3 4 5

16.

A B C D E 1 2 3 4 5

Directions : In the problem figure there is a definite relationship between figs. A & B. Establish the Similar relationship between figures in C & D from the set of answer figure.

17.

A B C D 1 2 3 4 5

18.

A B C D 1 2 3 4 5

Problem Figures **Answer Figures**

19.

A B C D 1 2 3 4 5

20.

A B C D 1 2 3 4 5

21.

A B C D 1 2 3 4 5

22.

A B C D 1 2 3 4 5

23.

A B C D 1 2 3 4 5

24.

A B C D 1 2 3 4 5

25.

A B C D 1 2 3 4 5

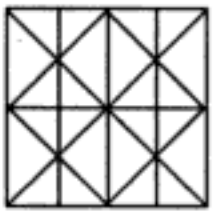
ANSWERS

1. (1) **2.** (1) **3.** (3) **4.** (2) **5.** (2) **6.** (1) **7.** (3) **8.** (3) **9.** (4) **10.** (2)
11. (4) **12.** (1) **13.** (3) **14.** (5) **15.** (2) **16.** (2) **17.** (1) **18.** (3) **19.** (4) **20.** (5)
21. (2) **22.** (4) **23.** (5) **24.** (3) **25.** (4)

4. ANALYTICAL REASONING

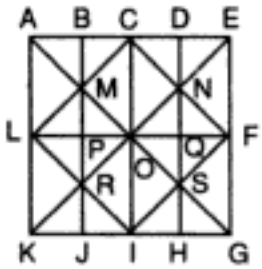
The chapter on Analytical Reasoning involves the problems relating to the counting of geometrical figures in a given complex figure. The systematic method for determining the number of any particular type of figure by the analysis of the complex figure would be clear from the examples that follow.

Ex. 1 : ***What is the number of straight lines in the following figure?***



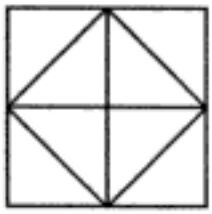
(*a*) 11 (*b*) 14
(*c*) 16 (*d*) 17

Sol. The figure is labelled as shown.



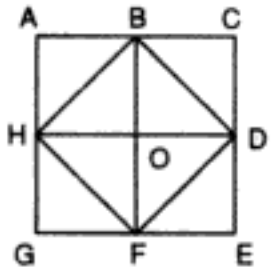
Clearly, there are 3 horizontal lines namely AE, LF and KG.
There are 5 vertical lines : AK, BJ, CI, DH and EG.
There are 6 slanting lines : LC, KE, IF, LI, AG and CF.
Thus, there are 3 + 5 + 6 = 14 straight lines in the figure.
Hence, the answer is (*b*).

Ex. 2 : ***Count the number of triangles in the following figure.***



(*a*) 8 (*b*) 10
(*c*) 12 (*d*) 14

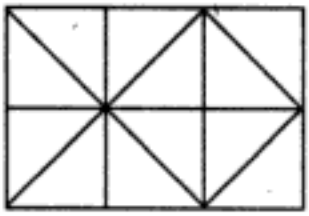
Sol. We first label the entire figure as shown.



Count the number of simplest triangles. These are ABH, BHO, BCD, BOD, DEF, DFO, FGH and FHO. Thus, there are 8 such triangles.
Next count the number of triangles which are composed of two compnents each. Such triangles are HBD, BDF, DFH and FHB. Thus, there are 4 such triangles.
Triangles with more than two components do not exist in the given figure.

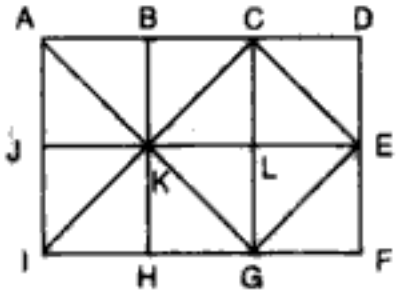
∴ The total number of triangles in the given figure = 8 + 4 = 12
Thus, (*c*) is the answer.

Ex. 3 : ***How many squares does the figure have?***



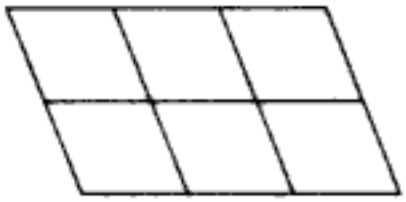
(*a*) 6 (*b*) 7
(*c*) 9 (*d*) 10

Sol. The figure may be labelled as shown :



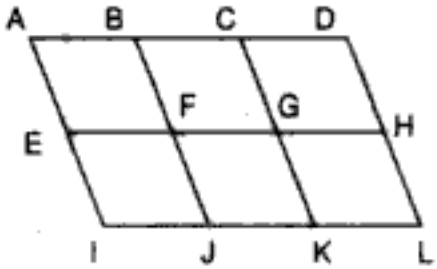
The squares composed of two components each, are ABKJ, BCLK, CDEL, LEFG, KLGH and JKHI. Thus, there are 6 such squares.
Only one square, KCEG is composed of four components.
Two squares namely, ACGI and BDFH are composed of eight components each. Thus, there are 2 such squares.
∴ There are 6 + 1 + 2 = 9 squares in the given figure.
Hence, (*c*) is the answer.

Ex. 4 : *How many parallelograms are there in the figure below ?*



(*a*) 14 (*b*) 15
(*c*) 16 (*d*) 18

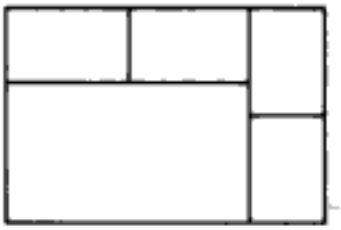
Sol. We can label the figure as shown.



The simplest || gms are ABFE, BCGF, CDHG, EFJI, FGKJ AND GHKL. These are 6 in number.
The || gms composed of two components each, are ACGE, BDHF, EGKI, FHLJ, ABJI, BCKJ, and CDLK. Thus, there are 7 such || gms.

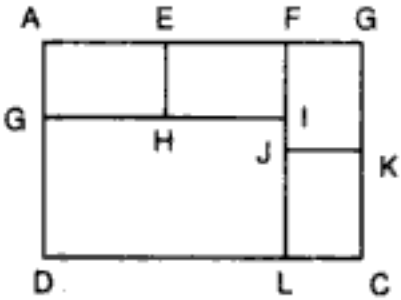
The || gms composed of four components each, are ACKI and BDLJ. i.e. 2 in number.
There is only one || gm composed of six components, namely, ADLI.
Thus, there are 6+7+2+1=16 parallelograms in the figure.
Hence, (c) is the answer.

Ex 5. *What is the number of rectangles in the following figure?*



(*a*) 6 (*b*) 7
(*c*) 8 (*d*) 9

Sol. The figure is labelled as shown :



Simplest rectangles are AEHG, EFIH, FBKJ, JKCL and GILD. i.e. there are 5 such rectangles.
The rectangles composed of two components each are AFIG and FBCL. Thus, there are 2 such rectangles.
Only one rectangle, namely AFLD is composed of 3 components and only one rectangle, namely ABCD is composed of 5 components.
Thus, there are 5 + 2 + 1 + 1 = 9 rectangles in the figure
Hence, (*d*) is the answer.

Ex. 6 : *Determine the number of pentagons in the following figure :*

(*a*) 5 (*b*) 6
(*c*) 8 (d) 10

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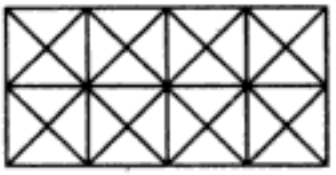
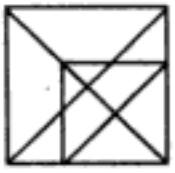
32. Count the number of squares in the figure given below :



(*a*) 11 (*b*) 21
(*c*) 24 (*d*) 26

33. How many triangles are there in the figure given below?

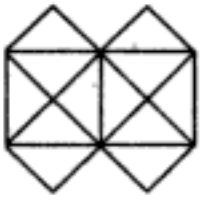


(*a*) 16 (*b*) 18
(*c*) 19 (*d*) 20

34. How many squares does the following figure have?

(*a*) 22 (*b*) 20
(*c*) 18 (*d*) 16

Directions : ***Study the following figure and answer questions 35 to 37.***

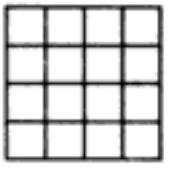


35. What is the minimum number of straight lines that is needed to construct the figure ?
(*a*) 11 (*b*) 13 (*c*) 15 (*d*) 21

36. Count the number of triangles in the figure.
(*a*) 12 (*b*) 16 (*c*) 20 (*d*) 24

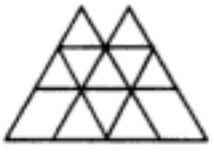
37. How many squares does the figure contain?
(*a*) 5 (*b*) 6 (*c*) 7 (*d*) 8

38. How many squares are there in the following figure?



(*a*) 16 (*b*) 17
(*c*) 25 (*d*) 27

39. Count the number of triangles and parallelograms in the figure given below .



(*a*) 16, 22 (*b*) 18, 16
(*c*) 14, 20 (*d*) 15, 21

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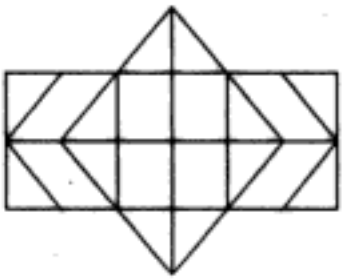
48. Count the number of pentagons in the following figure :

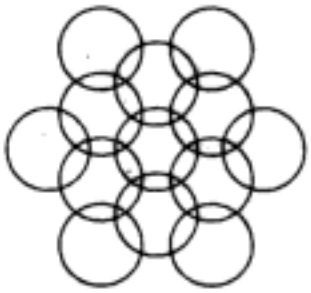
(*a*) 16 (*b*) 14
(*c*) 12 (*d*) 10

49. Determine the number of rectangles and hexagons in the following figure :



(*a*) 8 rectangles, 3 hexagons
(*b*) 15 rectangles, 3 hexagons
(*c*) 24 rectangles, 5 hexagons
(*d*) 30 rectangles, 5 hexagons

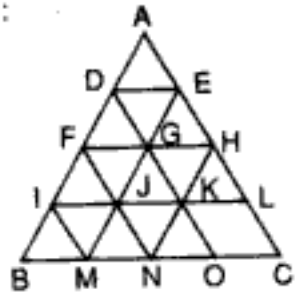
50. How many circles are there in the figure given below?



(*a*) 11 (*b*) 12
(*c*) 13 (*d*) 14

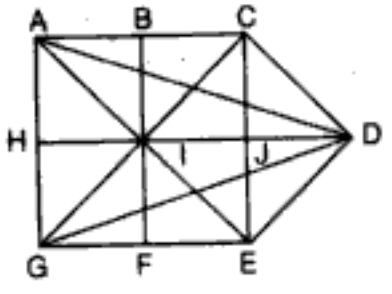
ANSWERS

1. (*b*) : The figure is labelled as shown :



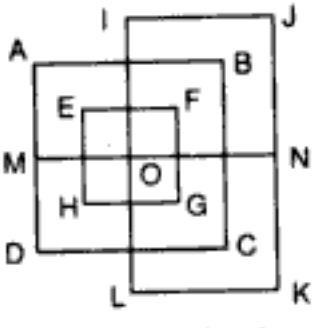
Horizontal lines are DE, FH, IL and BC i.e. 4 in number.
Slanting lines are IM, FN, DO, AC, AB, EM and HN i.e. 7 in number.
∴ Total number of lines is 4 + 7 = 11.

2. (*b*) : We can label the figure as shown :



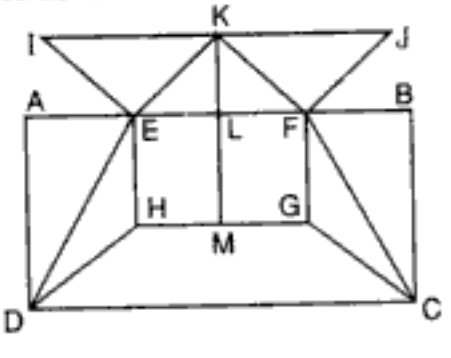
In this figure :
the horizontal lines are AC, HD and GE i.e. 3 in number ;
the vertical lines are AG, BF and CE i.e. 3 in number ;
and the slanting lines are AE, CD, AD, CG, DE and GD i.e. 6 in number.
Thus, there are 3 + 3 + 6 = 12 lines in all.

3. (*a*) : The figure may be labelled as follows :



Vertical lines are AD, EH, IL, FG, BC and JK i.e. 6.
Horizontal lines are IJ, AB, EF, MN, HG, DC, LK i.e. 7.
∴ Total number of lines is 6 + 7 = 13

4. (*b*) : The figure may be labelled as follows :



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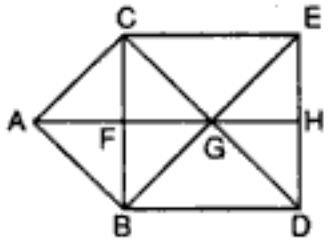
Triangles :

The simplest triangles are IJQ, JKQ, KLQ, LMQ, MNQ, NOQ, OPQ and PIQ i.e. 8 in number.
The triangles composed of two components are ABQ, BCQ, CDQ, DEQ, EFQ, FGQ, GHQ, HAQ, IKQ, KMQ, MOQ and OIQ i.e. 12 in number.
The triangles composed of four components are ACQ, CEQ, EGQ, GAQ, IKM, KMO, MOI and OIK i.e. 8 in number.
The triangles composed of eight components are ACE, CEG, EGA and GAC i.e. 4 in number.
Thus, there are 8 + 12 + 8 + 4 = 32 triangles.

Squares :

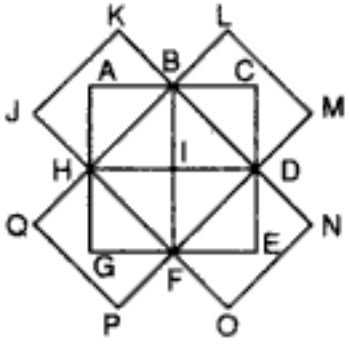
Squares composed of two components are IJQP, JKLQ, LMNQ and OPQN i.e. 4 in number.
Squares composed of four components are ABQH, BCDQ, QDEF and HQFG i.e. 4 in number.
The only square composed of eight components is IKMO.
There is only one square composed of sixteen components which is ACEG.
Hence, there are 4 + 4 + 1 + 1 = 10 squares in the figure.

8. (*c*) : We label the figure as shown :



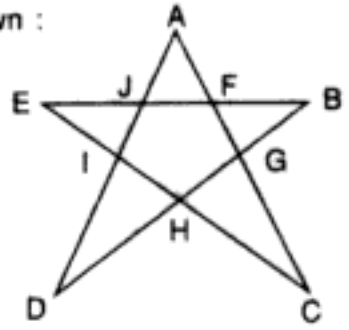
Count the number of simplest triangles. These are AFC, AFB, BGF, CGF, CGE, BGD, EHG, and DHG. Thus there are 8 such triangles.
Next, count the number of triangles which are composed of two small triangles each. These are ABC, ACG, CGB, ABG and GDE. Thus, there are 5 such triangles.
Also, count the number of triangles each of which contains three small triangles. These are BCD, CEB, EDC and EDB. Thus, there are 4 such triangles.
Consequently, there are 8 + 5 + 4 = 17 triangles in the figure.

9. (*d*) : The figure can be labelled as shown :



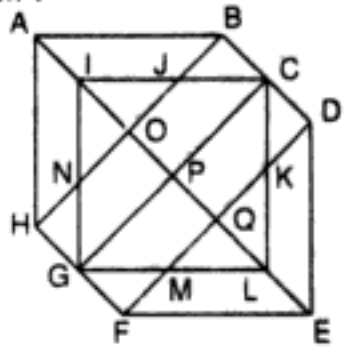
The rectangles composed of two components are JKBH, LMDB, NOFD and PQHF i.e. 4 in number.
The rectangles composed of four components are ACDH, BCEF, DEGH and FGAB i.e. 4 in number.
The rectangles composed of six components are HLMF, BNOH, PQBD and JKDF i.e. 4 in number.
The rectangles composed of eight components are JKNO and PQLM i.e. 2 in number.
Hence, the total number of rectangles in the figure = 4 + 4 + 4 + 2 = 14

10. (*d*) : The figure is labelled as shown :



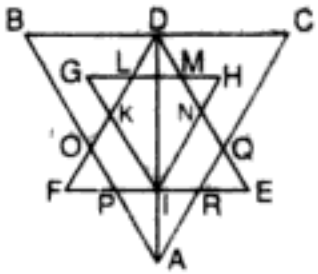
The simplest triangles are AJF, BFG, CGH, DHI and EJI i.e. 5.
The triangles having three parts are AIC, ADG, EHB, EFC and DJB i.e. 5.
∴ There are 10 triangles in the figure.

11. (*c*) : The figure is labelled as shown :



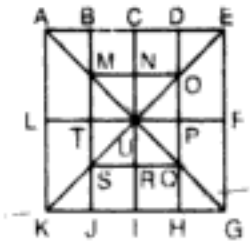
The simplest triangles are BCJ, CDK, KLQ, LMQ, FGM, GHN, NOI and IJO i.e. 8 in number.
The triangles composed of two components each are AOB, DEQ, EFQ, AOH, GIP, CIP, CLP, GLP, KLM and NIJ i.e. 10 in number.
The triangles composed of four components each are ABH, DEF, ICL, CLG, LGI and GIC i.e. 6 in number.
∴ Total number of triangles in the figure = 8 + 10 + 6 = 24.

12. (*c*) : The figure may be labelled as shown :



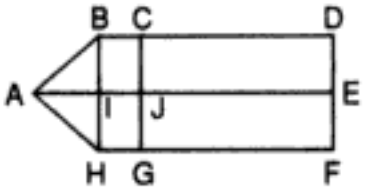
The simplest triangles are GKL, MHN, DLJ, DMJ, QRE, OPF, PIA and IRA i.e. 8.
The triangles having two components each, are BDO, CDQ, DLM, PRA, KFI, NEI, HJI, GJI, DKI and DNI i.e. 10.
The triangles having four components each, are DIE, DFI, DOA, DQA and DHI i.e. 5.
The triangles having six components each, are DCA and DBA i.e. 2.
DEF is the only triangle having eight components.
ABC is the only triangle having twelve components.
Thus, there are 8 + 10 + 5 + 2 + 1 + 1 = 27 triangles in the figure.

13. (*b*) : We label the figure as shown :



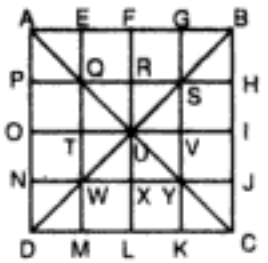
The simplest squares are BCNM, CDON, HIRQ and SRIJ i.e. 4.
The squares composed of two components are MNUT, NOPU, UPQR and TURS i.e. 4.
The squares composed of five components are CEFU, GIUF, IKLU and ACUL i.e. 4.
The squares composed of six components are BDPT and TPHJ i.e. 2.
There is only one square i.e. MOQS composed of eight components.
There is only one square i.e. AEGK composed of twenty components.
Hence, there are 4 + 4 + 4 + 2 + 1 + 1 = 16 squares in the figure.

14. (*d*) : The figure may be labelled as shown :



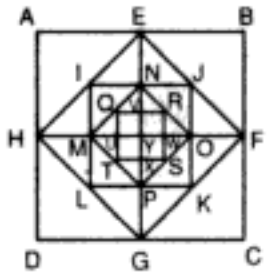
The simplest rectangles are BCJI, IJGH, CDEJ and JEFG i.e. 4.
The rectangles composed of two components are BDEI, IEFH, CDFG and BCGH i.e. 4.
The only rectangles composed of four components is BDFH.
Thus, there are 4 + 4 + 1 = 9 rectangles in the figure.

15. (*d*) : The figure may be labelled as shown :



Now, the simplest triangles are APQ, QTU, UXY, YKC, AEQ, QRU, UVY, YJC, BGS, SRU, UTW, WND, BHS, SVU, UXW and WMD i.e. 16.
The triangles having two components each, are QUS, SUY, WUY and QUY i.e. 4.
The triangles having three components each, are AFU, UIC, AOU, ULC, UOD, ULD, BFU and BIU i.e. 8.
The triangles having four components each, are QSY, SQW, SYW and QWY i.e. 4.
The triangles having six components each, are ABU, ADU, CDU and CBU i.e. 4.
The triangles having seven components each, are ANY, AGY, QMC, QHC, BJW, BEW, SKD and DPS i.e. 8.
The triangles having twelve components each are ADC, BDC, ABC and ABD i.e. 4.
Thus, there are in all 16 + 4 + 8 + 4 + 4 + 8 + 4 = 48 triangles in the figure.

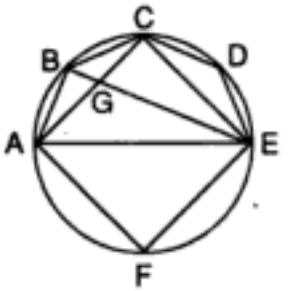
16. (*d*) : The figure may be labelled as shown :



The simplest squares are VRWY, YWSX, UYXT and QVYU i.e. 4.
The squares composed of four components are QRST, NJOY, OYPK, MYLP and INYM i.e. 5.
The squares composed of seven components are EBFY, YFCG, HYGD and AEYH i.e. 4.

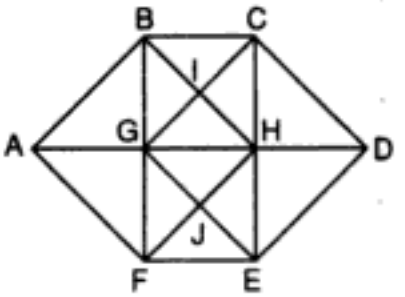
The square MNOP is composed of twelve components.
The square IJKL is composed of sixteen components.
The square EFGH is composed of twenty four components.
The square ABCD is composed of twenty eight components.
Hence, there are 4 + 5 + 4 + 1 + 1 + 1 + 1 = 17 squares in the figure.

17. (*d*) : We label the figure as shown :



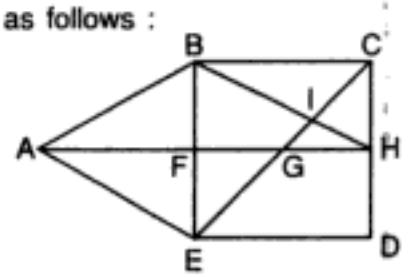
Simplest triangles are ABG, BCG, CDE,GCE, AGE and AFE i.e. 6.
Triangles composed of two triangles each, are ABC, ABE, ACE and BCE i.e. 4.
∴ There are 6 + 4 = 10 triangles in the figure.

18. (*d*) : The figure is labelled as shown :



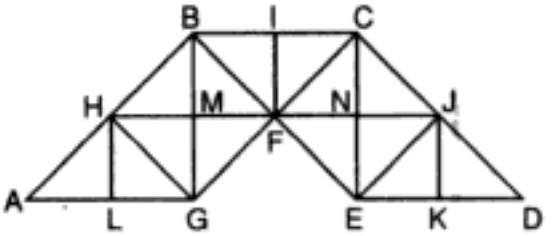
Simplest triangles are ABG, AGF, CHD, HDE, BGI, BCI, HCI, HGI, GHJ, HEJ, EFJ and GFJ i.e. 12.
The triangles composed of two triangles are ABF, CDE, BCG, BCH, HCG, BHG, GHE, HEF, GFE and GHF i.e. 10.
The triangles composed of three triangles are ABH, AFH, CDG and GDE i.e. 4.
The triangles composed of four triangles are BHF and CGE i.e. 2.
∴ Total number of triangles = 12 + 10 + 4 + 2 = 28.

19. (*d*) : The figure may be labelled as follows :



The simplest triangles are CHI, GHI, BCI, EFG, AFE and ABF i.e. 6.
The triangles composed of two components are ABE, BHF, BEI, CGH, BCH and AEG i.e. 6.
The triangles composed of three components are ABH, BCE and CED i.e. 3.
Hence, the total number of triangles in the figure = 6 + 6 + 3 = 15.

20. (*c*) : The figure may be labelled as shown.



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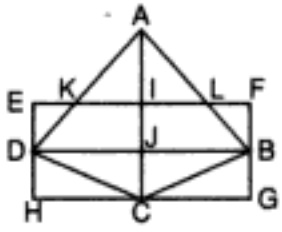
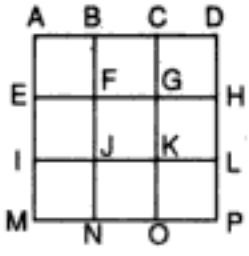
Simplest triangles are AFE, EFC, CFD, BFD and ABF i.e. 5.
Triangles having two components are AFC, CFB, ABD and BAE i.e. 4.
Triangles having three components are ADC and EBC i.e. 2.
Triangles having five components are ABC i.e. 1.
∴ Total number of triangles in the figure = 5 + 4 + 2 + 1 = 12.

24. (*c*) : The figure may be labelled as shown.



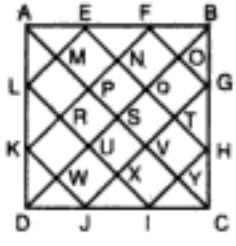
The simplest triangles are AIK, AIL, EKD, FLB, CDJ, CBJ, CDH and CBG i.e. 8.
The triangles composed of two components are ADJ, ABJ, AKL and BCD i.e. 4.
The triangles composed of three components are ADC and ACB i.e. 2.
The only triangle composed of four components is ADB.
Thus, there are 8 + 4 + 2 + 1 = 15 triangles in the figure.

25. (*a*) : The figure is labelled as shown.



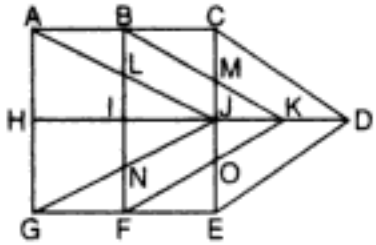
The simplest squares are ABFE, BCGF, CDHG, EFJI, FGKJ, GHLK, IJNM, JKON and KLPO i.e. 9.
The squares composed of four components are ACKI, BDLJ, EFOM and FHPN i.e. 4.
There is only one square i.e. ADPM which is composed of nine components.
Thus, there are 9 + 4 + 1 = 14 squares in the figure.

26. (*c*) : The figure is labelled as shown.



Simplest triangles in the figure are AML, LRK, KWD, DWJ, JXI, IYC, CYH, HTG, GOB, BOF, FNE and EMA i.e. 12.
Triangles having two components each, are ALE, KDJ, HIC and BFG i.e. 4.
Triangles having three components each, are APK, LUD, DUI, JVC, CVG, HQB, BQE and FPA i.e. 8.
Triangles having six components each, are ASD, DSC, BSC, BSA, AFK, LDI, JCG and BEH i.e. 8.
Triangles having twelve components each, are ADC, BDC, ABC and BAD i.e. 4.
∴ Total number of triangles in the figure = 12 + 4 + 8 + 8 + 4 = 36.

27. (*d*) : The figure may be labelled as shown.



Triangles :

Simplest triangles are ILJ, IJN, MJK, OJK, ABL, BCM, GNF and FOE i.e. 8.

Triangles composed of two components are AHJ, CJD, LJN, MOK, GHJ and EJD i.e. 6.

Triangles composed of three components are BIK and FIK i.e. 2.

Triangles composed of four components are AGJ and CDE i.e. 2.

The only triangle composed of six components is BFK.

Thus, there are 8 + 6 +2 + 2 + 1 = 19 triangles in the figure.

Parallelograms :

Simplest || gms are BLJM and FNJO i.e. 2.

The || gms. composed of two components are ABIH, HIFG, CBKD and DEFK i.e. 4.

The || gms composed of three components are ABKJ, GFKJ, BCJI and IJEF i.e. 4.

The only || gm composed of four components is ABFG.

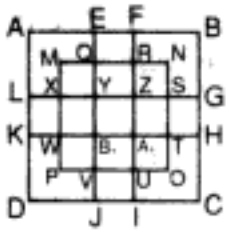
The || gms composed of five components are ACDJ, GEDJ, ACJH and HJEG i.e. 4.

The only || gm composed of six components is BCEF.

The only || gm composed of ten components is ACEG.

Thus, there are 2 + 4 + 4 + 1 + 4 + 1 + 1 = 17 parallelograms in the figure.

28. (*d*) : The figure may be labelled as shown.



The simplest squares are EFRQ, RNSZ, QRZY, MQYX, LXWK, XYB$_1$W, YZA$_1$B$_1$, ZSTA$_1$, SGHT, A$_1$TOU, B$_1$A$_1$UV, WB$_1$VP and VUIJ i.e. 13.

The squares having two components each, are AEYL, BFZG, HA$_1$IC and KB$_1$JD i.e. 4.

The squares having four components each, are XZUP, YSOV, QNTB$_1$ and MRA$_1$W i.e. 4.

The squares having seven components each, are AFA$_1$K, EBHB$_1$, LZID and YGCJ i.e. 4.

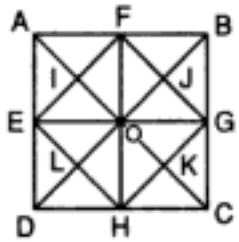
The only square having nine components is MNOP.

ABCD is the only square having seventeen components.

29. (*d*) : The figure may be labelled as shown.

Simplest triangles are ABL, BCD, DEF, FGP, PGH, HIQ, IJQ, JKR and KLR i.e. 9.
Triangles composed of two components are OGS, SGQ, SPI, SRI, KSQ, KSM, FGH, HIJ and JKL i.e. 9.
The only triangle composed of four components is KSG.
Triangles composed of five components are CGM, INE, INA and KOC i.e. 4.
Triangles composed of six components are GMK and KOG i.e. 2.
The only triangle composed of ten components is AIE and the only triangle composed of eleven components is CKG.
∴ Total number of triangles in the figure = 9 + 9 + 1 + 4 + 2 + 1 + 1 = 27.

30. (*a*) : The figure is labelled as shown below.



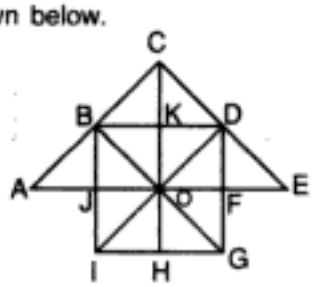
Determination of the number of triangles :

Simplest triangles are AIF, IFO, IEO, AIE, FBJ, BJG, JGO, FJO, GKC, HKC, HOK, GOK, OLH, LDH, ELD and ELO i.e. 16.
The triangles having two simple triangles each, are AFE, EDH, HCG, FBG, EOH, HOG, GOF, EOF, AEO, BOG, BOF, AOF, DOE, DOH, GOC and HOC i.e. 16.
The triangles having four simple triangles each, are AOD, DOC, COB, BOA, FEH, EGH, GFH and EFG i.e. 8.
The triangles having eight simple triangles each, are ADC, DBC, ABC and BAD i.e. 4.
∴ The number of triangles in the figure = 16 + 16 + 8 + 4 = 44.

Determination of the number of squares :

The squares containing two triangles each, are GJOK, JOIF, IOLE and LOKH i.e. 4.
The squares containing four triangles each, are BFOG, AFOE, EOHD and GOHC i.e. 4.
EFGH is the only square containing eight triangles.
ABCD is the only square containing sixteen triangles.
∴ The total number of squares in the figure = 4 + 4 + 1+ 1 = 10.

31. (*b*) : The figure is labelled as shown below.



Triangles :

Simplest triangles are ABJ, BCK, CDK, DEF, BOJ, BOK, KOD, DOF, OFG, HOG, HIO and JOI i.e. 12.
Triangles composed of two components are BCD, ABO, ODE, BOI, BOD, DOG and GOI i.e. 7.
Triangles composed of four components are ACO, COE, DIG, BIG, BID and BDG i.e. 6.
The only triangle composed of eight components is ACE.
Thus, there are 12 + 7 + 6 + 1 = 26 triangles in the given figure.

Squares :

The squares composed of two components are KDFO, FOHG, JOHI and BKOJ i.e. 4.
The only square composed of four components is BCDO.
The only square composed of eight components is BDGI.
Thus, there are 4 + 1 + 1 = 6 squares in the figure.

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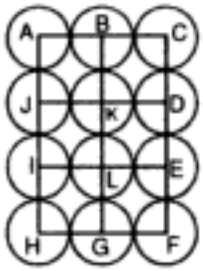
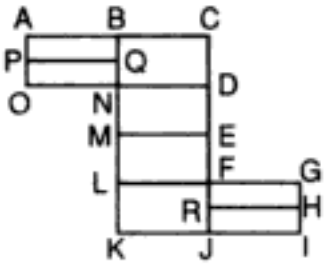
The || gms composed of four triangles each, are AGOD, EILM, DOKF, AFNE, DHJM, ENKG, NICK, HOLJ, FGIN, HOKB, NILJ and FGOH i.e. 12.
The || gms composed of six triangles each, are HICJ, HILB, DECL, ADLI, AEJH and DEJB i.e. 6.
The || gms composed of eight triangles each, are FGCK, FGKB and AGKF i.e. 3.
∴ Total number of parallelograms in the figure = 18 + 12 + 6 + 3 = 39.

43. (*c*) : The centres of all the circles are joined and all the vertices are labelled as shown :



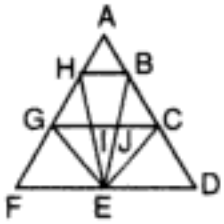
The simplest squares are ABKJ, BCDK, JKLI, KDEL, ILGH and LEFG i.e. 6.
The squares composed of four simple squares each, are ACEI & JDFH i.e. 2
Thus, in this way, 6 + 2 = 8 squares will be formed.

44. (*c*) : The figure may be labelled as shown :



The simplest rectangles are ABQP, PQNO, BCDN, NDEM, MEFL, LFJK, FGHR and RHIJ i.e. 8.
The rectangles composed of two components each, are ABNO, BCEM, NDFL, MEJK and FGIJ i.e. 5.
The rectangles composed of three components each, are ACDO, BCFL, NDJK and LGIK i.e. 4.
The only rectangle composed of four components is BCJK.
∴ Total number of rectangles in the given figure = 8 + 5 + 4 + 1 = 18.

45. (*b*) : The figure is labelled as follows :



The simplest triangles are ABH, BJC, GHI, IJE, JCE, GIE, CDE and GEF i.e. 8.
The triangles composed of two components each, are ICE, GJE, HBE, HEG and BCE i.e. 5.
The triangles composed of three components each, are BED, HEF and GCE i.e. 3.
The only triangle composed of four components is AGC.
The only triangle composed of nine components is AFD.
Thus, there are 8 + 5 + 3 + 1 + 1 = 18 triangles in the given figure.

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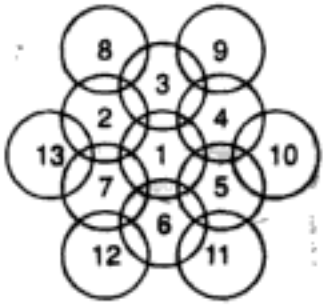
50. (*c*) : There are 13 circles in the given figure. This is clear from the following figure in which all the circles have been numbered from 1 to 13.



5. MIRROR-IMAGES

Mirror Image : *The image of an object, as seen in a mirror, is called its mirror reflection or mirror image.*

In such an image, the right side of the object appears on the left side and vice versa. A mirror-image is therefore said to be laterally inverted and the phenomenon is called **Lateral Inversion.**

MIRROR-IMAGES OF CAPITAL LETTERS

Letters	Mirror-Images	Letters	Mirror-Images	Letters	Mirror-Images
A	A	J	ᒐ	S	S
B	ᗺ	K	ꓘ	T	T
C	Ɔ	L	⅃	U	U
D	ᗡ	M	M	V	V
E	Ǝ	N	И	W	W
F	ᖵ	O	O	X	X
G	⅁	P	ᑫ	Y	Y
H	H	Q	Ꝺ	Z	Z
I	I	R	Ꝛ	-	-

Remark : The letters having identical mirror images are :

A, H, I, M, O, T, U, V, W, X, Y

Ex. *Mirror-images of certain words are given below :*

1. MOUTH : HTUOM
2. NATIONAL : ⅃AИOITAИ
3. PROPER : ꝚƎꝚOꝚ
4. DEFICIT : TIƆIƎᗡ

MIRROR-IMAGES OF SMALL LETTERS

Letters	Mirror-Images	Letters	Mirror-Images	Letters	Mirror-Images
a	ɐ	j	ᒧ	s	ƨ
b	d	k	ʞ	t	ʇ
c	ɔ	l	l	u	ᴎ
d	b	m	ɯ	v	v
e	ɘ	n	n	w	w
f	ʇ	o	o	x	x
g	ᵷ	p	q	y	ʎ
h	ɥ	q	p	z	z
i	i	r	ɹ	-	-

MIRROR-IMAGES OF NUMBERS

Numbers	Mirror-Images	Numbers	Mirror-Images	Numbers	Mirror-Images
1	↾	4	↊	7	⅂
2	ᘔ	5	ϛ	8	8
3	Ɛ	6	9	9	6

EXERCISE 5A

Directions : ***In each one of the following questions, you are given a combination of letters or / and numbers followed by four alternatives (a), (b), (c) and (d). Choose the alternative which most closely resembles the mirror-image of the given combination.***

1. STROKE
   (a) ƧTRƟKƎ (b) EKORTS
   (c) ROKETS (d) ƎKƟRTƧ
2. LATERAL
   (a) ⅃ATƎRA⅃ (b) ⅃ATƎRA⅃
   (c) LARETAL (d) ⅃AƎRƎTAL
3. QUALITY
   (a) ϽUA⅃⅃TY (b) YTILAUQ
   (c) YTI⅃⅃AUϽ (d) YTI⅃⅃AUϽ
4. WESTERN
   (a) NRƎTƧƎW (b) NRƎTƧƎW
   (c) NRƎTƧƎW (d) NRƎTƧƎW
5. BUZZER
   (a) RƎZZUB (b) REZZUB
   (c) BUZZƎR (d) RƎZZUB
6. FIXING
   (a) GNIXIF (b) ƓNIXIF
   (c) ƓNIXIF (d) ƓNIXIF
7. CHEAPER
   (a) RƎPƎHC (b) RƎPƎHC
   (c) RƎPƎHC (d) RƎPƎHC
8. JUDGEMENT
   (a) TNEMEGDUJ (b) TNƎMƎGDU⅃
   (c) TNƎMƎGDU⅃ (d) ⅃UDGƎMƎNT
9. QUANTITATIVE
   (a) ϽUANTITATIVE (b) EVITATITNAUQ
   (c) ϽUANTITATIVƎ (d) ƎVITATITNAUϽ
10. REASONING
   (a) RƎASONINϽ (b) ƓNINOSAƎR
   (c) GNINOSAER (d) RƎASONINϽ

11. TERMINATE

(a) TERMINATE (b) TERMINATE

(c) TERMINATE (d) ETANIMRET

12. EFFECTIVE

(a) EFFECTIVE (b) EVITCEFFE

(c) EFFECTIVE (d) EVITCEFFE

13. COLONIAL

(a) LAINOLOC (b) COLONIAL

(c) LAINOLOC (d) COLONIAL

14. EMANATE

(a) EMANATE (b) EMANATE

(c) ETANAME (d) EATEMAN

15. INFORMATIONS

(a) INFORMATIONS (b) INFORMATIONS

(c) INFORMATIONS (d) INFORMATIONS

16. R4E3N2U

(a) R4E3N2U (b) U2N3E4R

(c) R4E3N2U (d) R4E3N2U

17. BR4AQ16HI

(a) BR4AQ16HI (b) IH61QA4RB

(c) BR4AQ16HI (d) BR4AQ16HI

18. DBV8476

(a) DBV8476 (b) 6748VBD

(c) 8476DBV (d) DBV8476

19. 15UP5062

(a) 5062UP15 (b) 26O5PU51

(c) 15UP5062 (d) 26O5PUP51

20. DL3N469F

(a) F964N3LD (b) DL3N469F

(c) F469N3DL (d) DL3N469F

21. T3S4P5H6

(a) 6H5P4S3T (b) H6P5S4T3

(c) T3S4P5H6 (d) T3S4P5H6

22. KALINGA261B

(a) KALINGA261B (b) B162AGNILAK

(c) B261KALINGA (d) KALINGA261B

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35. NiCaRaGuA

(a) AuGaRaCiN (b) AnGaRaCiN

(c) AnGaRaCiN (d) AuGaRaCiN

ANSWERS *(EXERCISE--1A)*

1. (d)	2. (b)	3. (c)	4. (d)	5. (a)	6. (b)	7. (c)	8. (c)	9. (d)	10. (b)
11. (c)	12. (a)	13. (d)	14. (b)	15. (d)	16. (c)	17. (a)	18. (d)	19. (c)	20. (b)
21. (d)	22. (d)	23. (a)	24. (c)	25. (d)	26. (b)	27. (c)	28. (b)	29. (d)	30. (a)
31. (d)	32. (a)	33. (c)	34. (b)	35. (d)					

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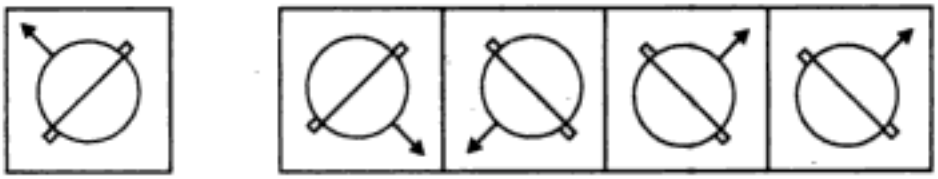
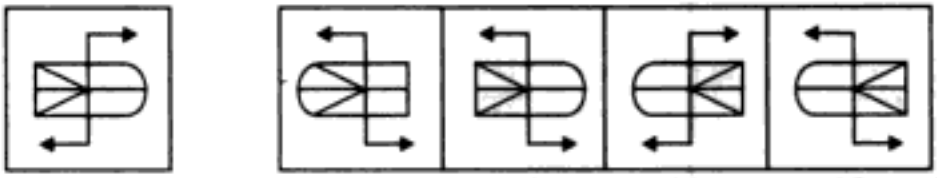
8.



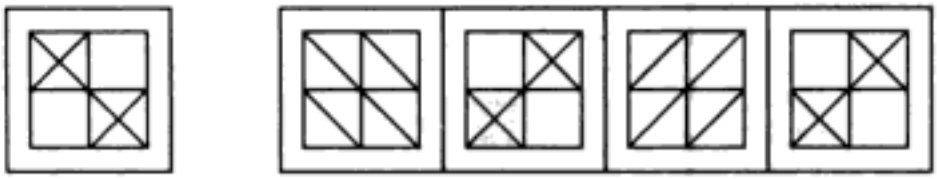
(x) (a) (b) (c) (d)

9.



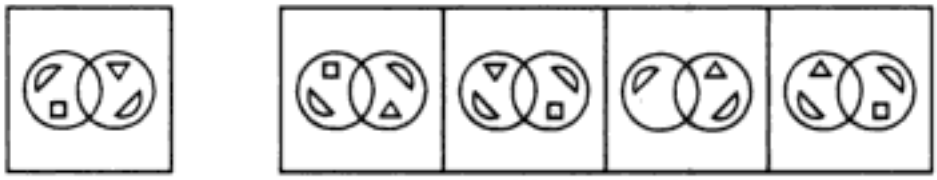
(x) (a) (b) (c) (d) **(C.B.I. 1995)**

10.



(x) (a) (b) (c) (d)

11.

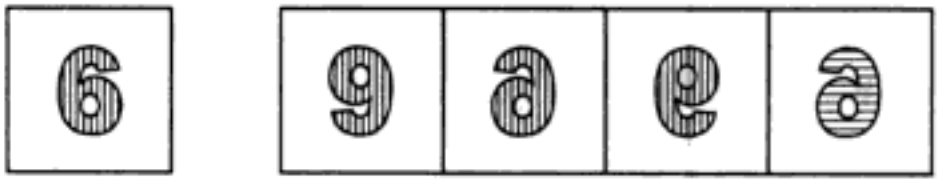


(x) (a) (b) (c) (d)

12.

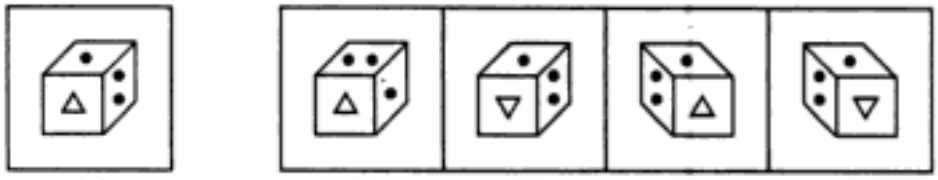
(x) (a) (b) (c) (d)

13.



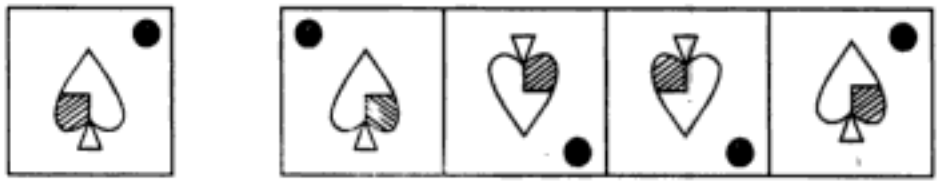
(x) (a) (b) (c) (d)

14.



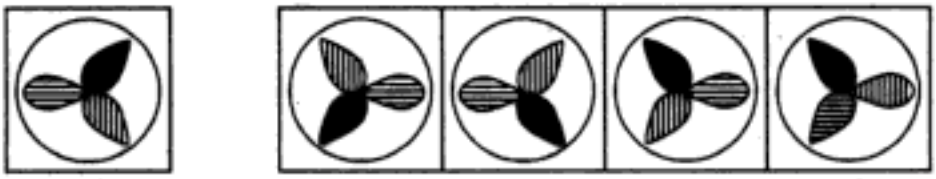
(x) (a) (b) (c) (d)

15.



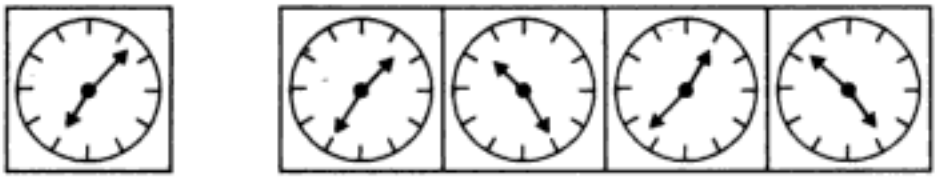
(x) (a) (b) (c) (d)

16.



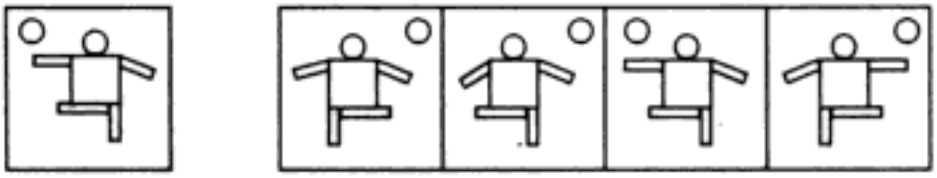
(x) (a) (b) (c) (d)

17.



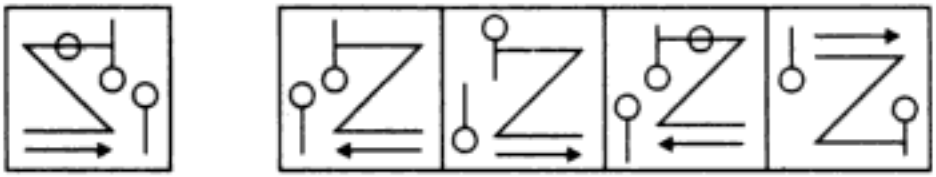
(x) (a) (b) (c) (d)

18.



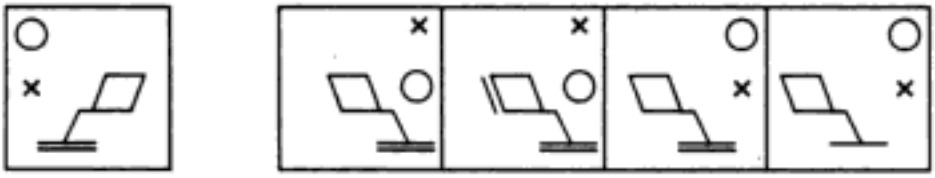
(x) (a) (b) (c) (d)

19.



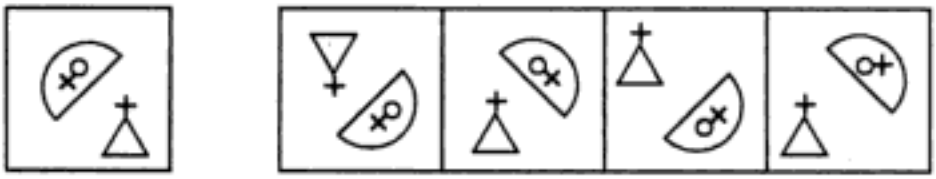
(x) (a) (b) (c) (d)

20.



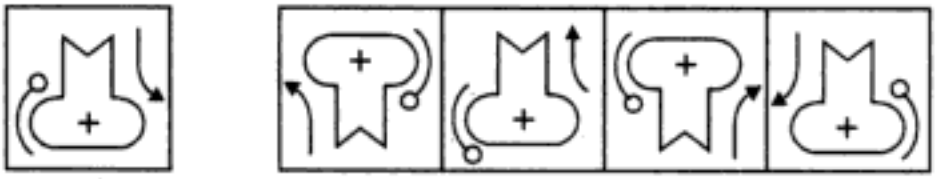
(x) (a) (b) (c) (d)

21.



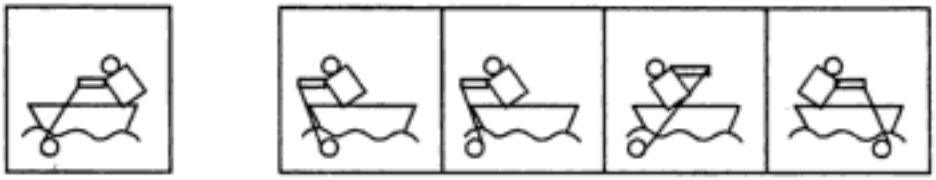
(x) (a) (b) (c) (d)

22.



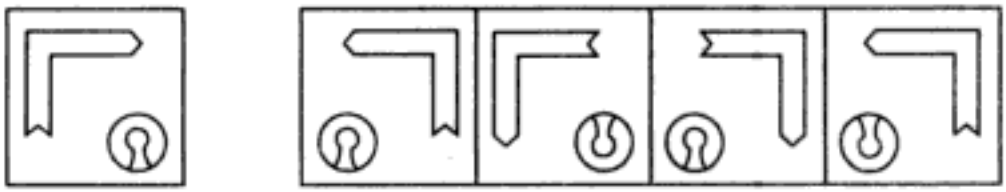
(x) (a) (b) (c) (d)

23.



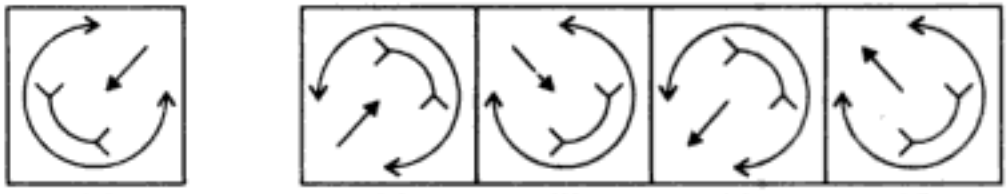
(x) (a) (b) (c) (d)

24.



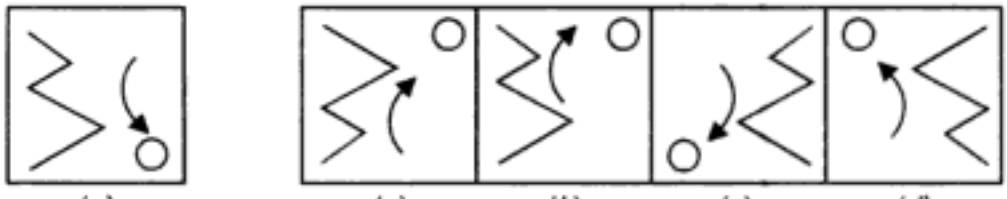
(x) (a) (b) (c) (d)

25.



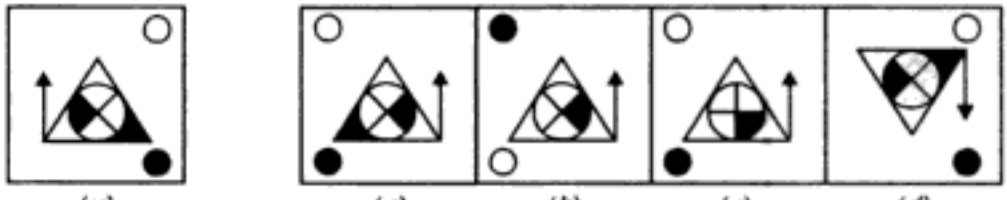
(x) (a) (b) (c) (d)

26.



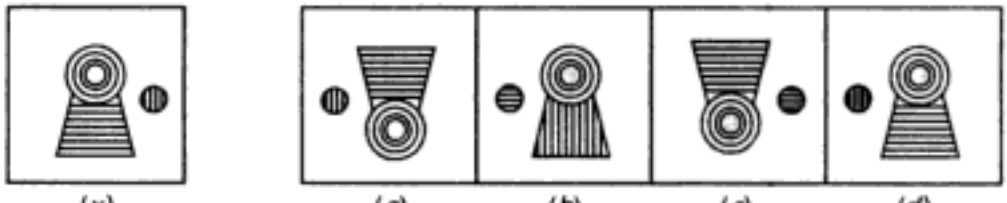
(x) (a) (b) (c) (d)

27.



(x) (a) (b) (c) (d)

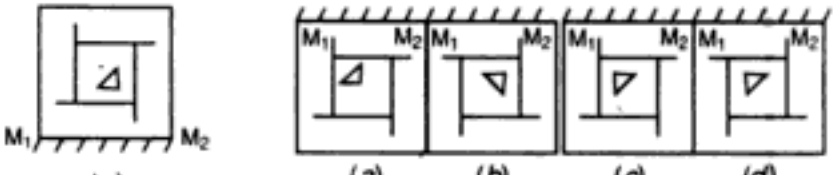
28.



(x) (a) (b) (c) (d)

Directions : ***In each of the questions from 29 to 32, which is the mirror image of the given figure when the mirror is placed along the line shown in each one of the figures.***

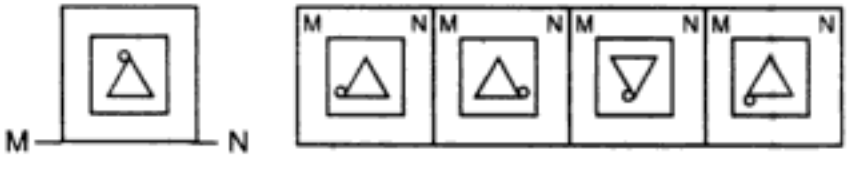
29.



(x) (a) (b) (c) (d)

(U.D.C. 1995)

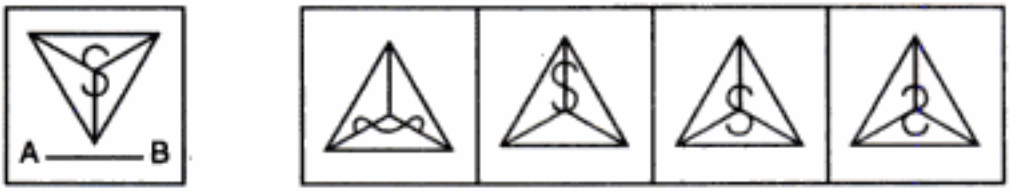
30.



(x) (a) (b) (c) (d)

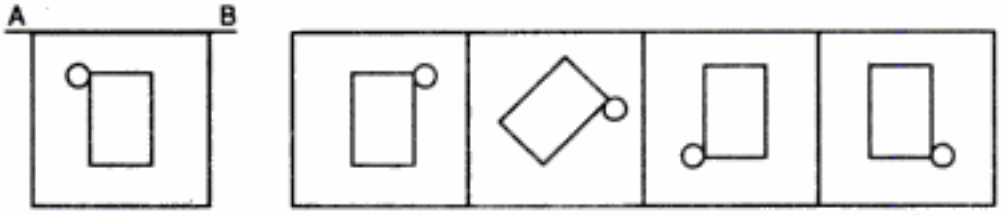
(U.D.C. 1995)

31.



(*x*) (*a*) (*b*) (*c*) (*d*) **(C.B.I. 1995)**

32.



(*x*) (*a*) (*b*) (*c*) (*d*)

(Asstt. Grade, 1993)

ANSWERS

1. (c)	**2.** (a)	**3.** (d)	**4.** (b)	**5.** (a)	**6.** (d)	**7.** (c)	**8.** (c)	**9.** (d)	**10.** (d)
11. (b)	**12.** (d)	**13.** (b)	**14.** (c)	**15.** (a)	**16.** (c)	**17.** (d)	**18.** (d)	**19.** (c)	**20.** (c)
21. (b)	**22.** (d)	**23.** (d)	**24.** (a)	**25.** (b)	**26.** (c)	**27.** (a)	**28.** (d)	**29.** (b)	**30.** (c)
31. (d)	**32.** (c)								

6. WATER-IMAGES

Water Image : *The reflection of an object as seen in water is called its water image. It is the inverted image obtained by turning the object upside down.*

WATER-IMAGES OF CAPITAL LETTERS

Letters	A	B	C	D	E	F	G	H	I
Water-Images	∀	B	C	D	E	Ⅎ	⅁	H	I
Letters	J	K	L	M	N	O	P	Q	R
Water-Images	ſ	K	Γ	W	И	O	ꝑ	Ꝋ	Ꝑ
Letters	S	T	U	V	W	X	Y	Z	--
Water-Images	S	⊥	∩	Λ	M	X	⅄	Z	--

Remark 1 : The letters whose water-images remain unchanged are :

C, D, E, H, I, K, O and X.

Remark 2 : Certain words which have identical water-images are :

KICK, KID, CHIDE, HIKE, CODE, CHICK

WATER-IMAGES OF SMALL LETTERS

Letters	a	b	c	d	e	f	g	h	i
Water-Images	ɐ	q	ɔ	p	ǝ	ɟ	ƃ	ɥ	ı
Letters	j	k	l	m	n	o	p	q	r
Water-Images	ɾ	ʞ	l	ɯ	u	o	d	b	ɹ
Letters	s	t	u	v	w	x	y	z	--
Water-Images	s	ʇ	n	ʌ	ʍ	x	ʎ	z	--

WATER-IMAGES OF NUMBERS

Letters	0	1	2	3	4	5	6	7	8	9
Water-Images	0	⇂	ᄅ	Ɛ	ᔭ	ϛ	9	∠	8	6

EXERCISE 6A

Directions : ***In each one of the following questions, you are given a combination of letters or / and numbers followed by four alternatives (a), (b), (c), (d). Choose the alternative which most closely resembles the water-image of the given combination.***

1. DISC
   (a) CSID (b) ƆSIᗡ
   (c) DIƆC (d) DISC
2. TRAY
   (a) ⊥ꓤAʎ (b) YART
   (c) ʎAꓤ⊥ (d) ⊥ꓤAʎ

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14. BK50RP62
    (a) BK50RP65 (b) BK50RP62
    (c) BK50RP62 (d) BK50RP62
15. 5DOB6V2
    (a) 5DOB6V5 (b) 5DOB9V5
    (c) 5DOB9V5 (d) 5DOB6V5
16. 96FSH52
    (a) 96FSH25 (b) 69FSH52
    (c) 96FSH25 (d) 69FSH52
17. 50JA32DEO6
    (a) 50JA35DEO9 (b) 50JA35DEO6
    (c) 50JA35DEO6 (d) 50JA35DEO6
18. RAJ589D8
    (a) RAJ589D8 (b) RAJ589D8
    (c) RAJ589D8 (d) RAJ589D8
19. GR98AP76ES
    (a) GR68AP79ES (b) GR98AP79ES
    (c) GR98AP76ES (d) GR98AP76ES
20. US91Q4M5W3
    (a) US91Q4M5W3 (b) US91Q4M5W3
    (c) US91Q4M5W3 (d) US91Q4M5W3
21. monday
    (a) yadnom (b) yadnom
    (c) yadnom (d) monday
22. rise
    (a) rise (b) esir
    (c) rise (d) rise
23. wrote
    (a) wrote (b) wrote
    (c) wrote (d) wrote
24. bridge
    (a) bridge (b) bridge
    (c) bridge (d) bridge
25. national
    (a) national (b) national
    (c) national (d) national

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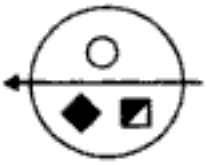
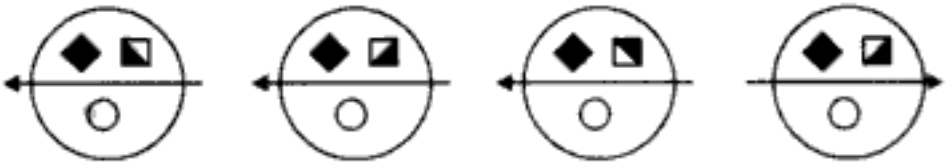
EXERCISE 6B

Directions : ***In each one of the following questions, choose the correct water-image of the figure (x) from amongst the four alternatives (a), (b), (c), (d) given along with it.***

1.

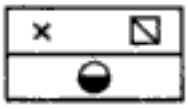


(x)

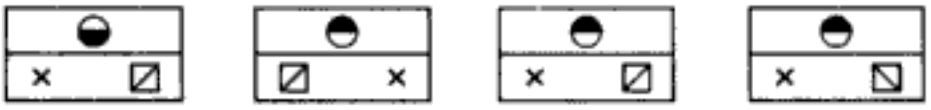


(a) (b) (c) (d)

2.



(x)



(a) (b) (c) (d)

3.

(x)

(a) (b) (c) (d)

4.

(x)

(a) (b) (c) (d)

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15.

(x)

(a)

(b)

(c)

(d)

16.

(x)

(a)

(b)

(c)

(d)

17.

(x)

(a)

(b)

(c)

(d)

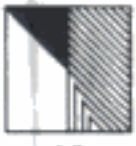
18.

(x)

(a)

(b)

(c)



(d)

19.

(x)

(a)

(b)

(c)

(d)

20.

(x)

(a)

(b)

(c)

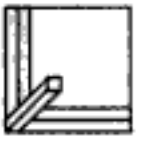
(d)

21.

(x)

(a)

(b)



(c)

(d)

22.

(x)

(a)

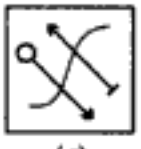
(b)

(c)

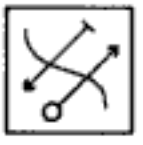
(d)

23.

(x)



(a)



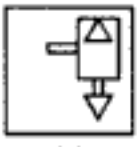
(b)

(c)

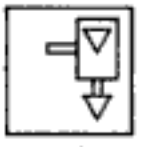
(d)

24.

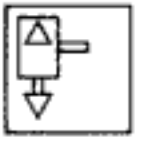
(x)



(a)



(b)



(c)

(d)

25.

(*x*)

(*a*)

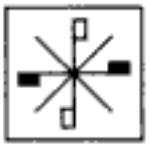
(*b*)

(*c*)

(*d*)

26.

(*x*)



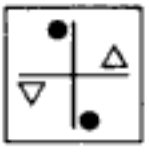
(*a*)

(*b*)

(*c*)

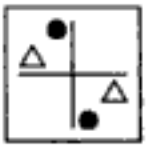
(*d*)

27.



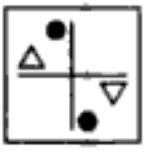
(*x*)

(*a*)



(*b*)

(*c*)



(*d*)

ANSWERS

1. (a)	**2.** (c)	**3.** (d)	**4.** (d)	**5.** (b)	**6.** (b)	**7.** (a)	**8.** (d)	**9.** (c)	**10.** (b)
11. (a)	**12.** (d)	**13.** (b)	**14.** (c)	**15.** (d)	**16.** (b)	**17.** (d)	**18.** (c)	**19.** (d)	**20.** (a)
21. (c)	**22.** (b)	**23.** (c)	**24.** (a)	**25.** (d)	**26.** (b)	**27.** (c)			

7. SPOTTING OUT THE EMBEDDED FIGURE

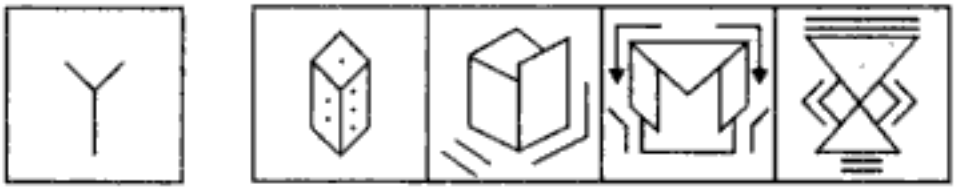
Embedded Figure : A figure X is said to be embedded in a figure Y, if Y contains figure X as its part.

TYPE 1 : In such type of problems, a figugre (X) is given, followed by four complex figures in such a way that fig. (X) is embedded in one of the them. One has to choose

Solved Examples

Directions : Fig. (X) is embedded in any one of the four alternative figures. Find the alternative which contains fig. (X).

Ex. 1.

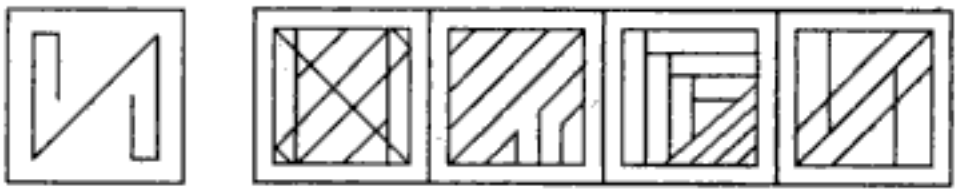


(X) (a) (b) (c) (d)

Sol. : On close observation we find that fig. (X) is embedded in fig. (a). This will be more clear from the following figure :

Hence, the answer is (a).

Ex. 2.

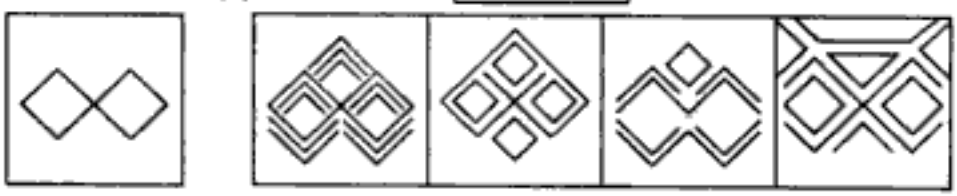


(X) (a) (b) (c) (d)

Sol. : Fig. (X) can be traced out in fig. (d) as shown below :

Hence, the answer is (d).

Ex. 3.



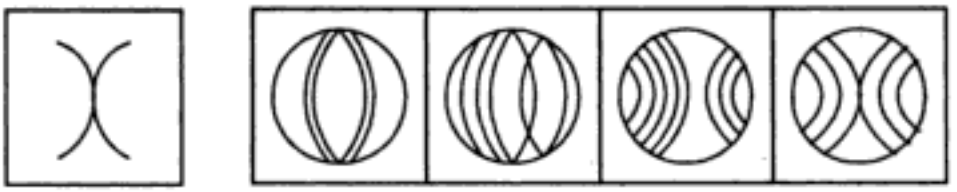
(X) (a) (b) (c) (d)

Sol. : Fig. (X) is embedded in fig. (a) as shown below :

Hence, fig. (a) is the correct answer.

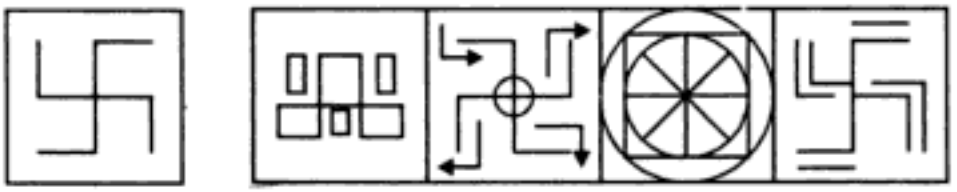
Hidden page

5.



(X) (a) (b) (c) (d)

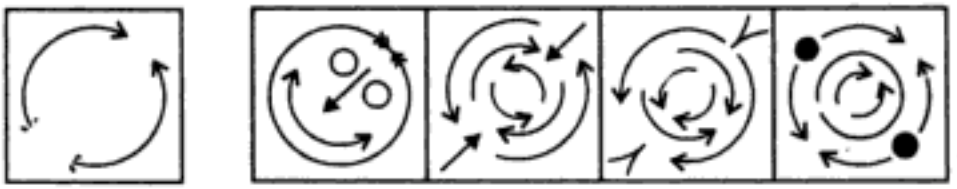
6.



(X) (a) (b) (c) (d)

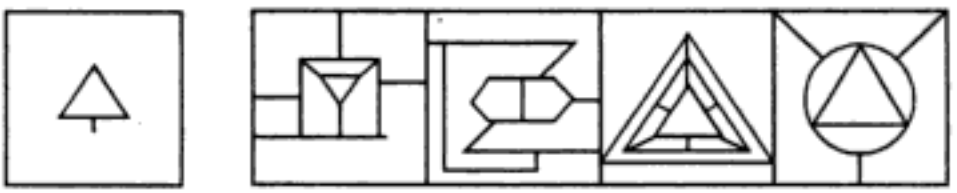
(I. Tax 1994)

7.



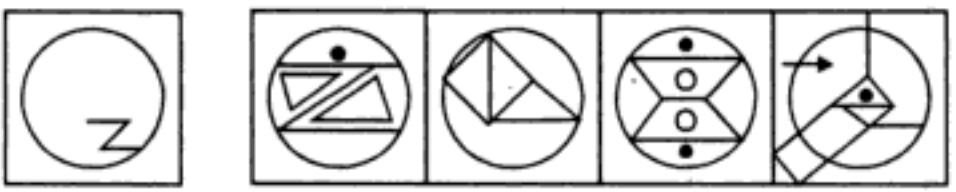
(X) (a) (b) (c) (d)

8.



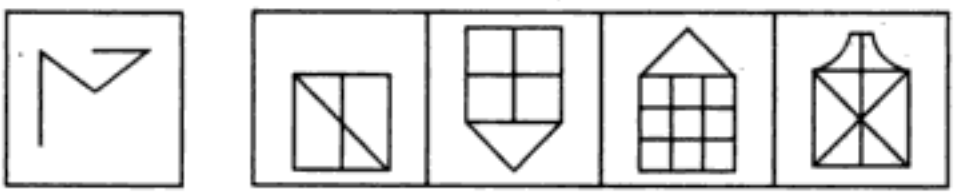
(X) (a) (b) (c) (d) **(Asstt. Grade, 1996)**

9.



(X) (a) (b) (c) (d)

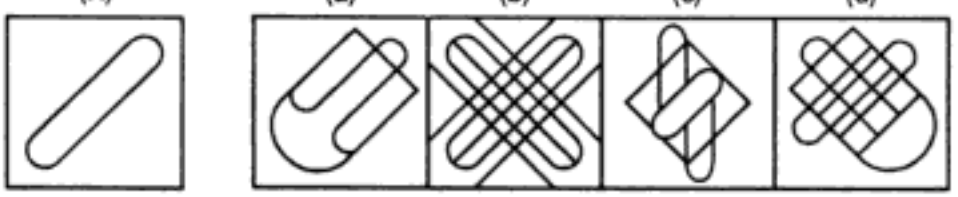
10.



(X) (a) (b) (c) (d)

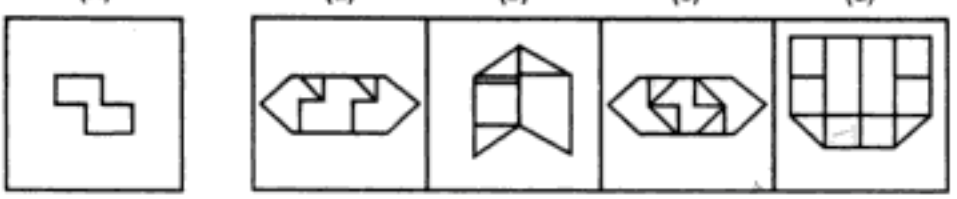
(S.S.C. 1995)

11.



(X) (a) (b) (c) (d)

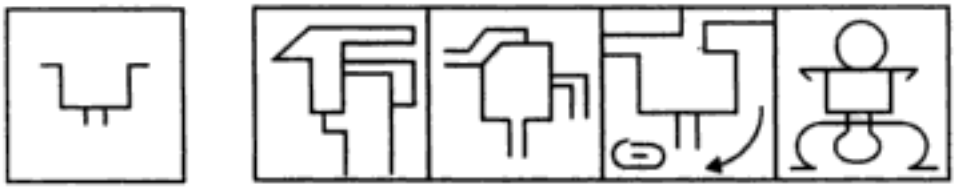
12.



(X) (a) (b) (c) (d)

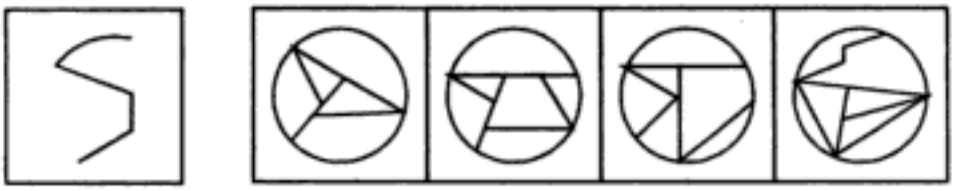
(C.B.I. 1993)

13.



(X) (a) (b) (c) (d)

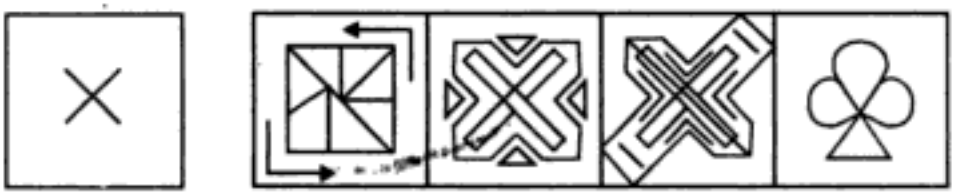
14.



(X) (a) (b) (c) (d)

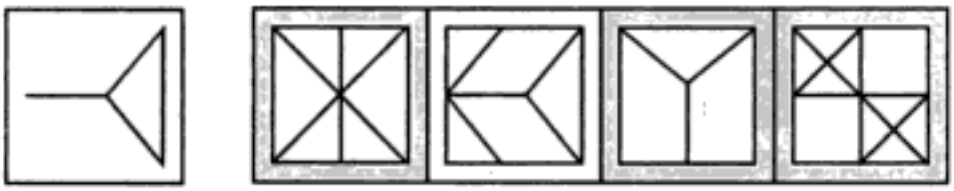
(U.D.C. 1995)

15.



(X) (a) (b) (c) (d)

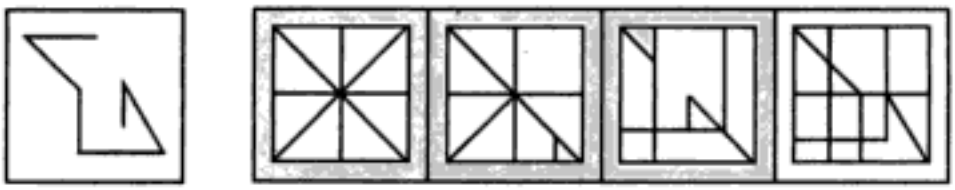
16.



(X) (a) (b) (c) (d)

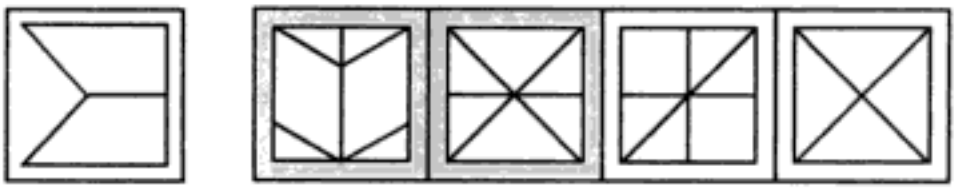
(Railways, 1993)

17.



(X) (a) (b) (c) (d)

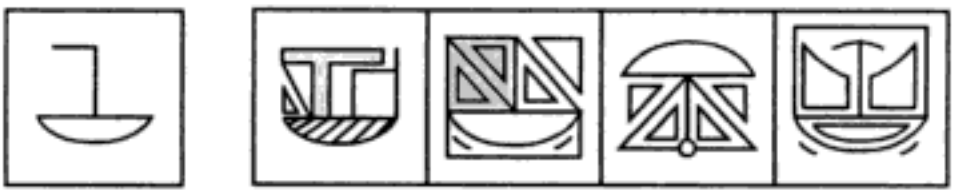
18.



(X) (a) (b) (c) (d)

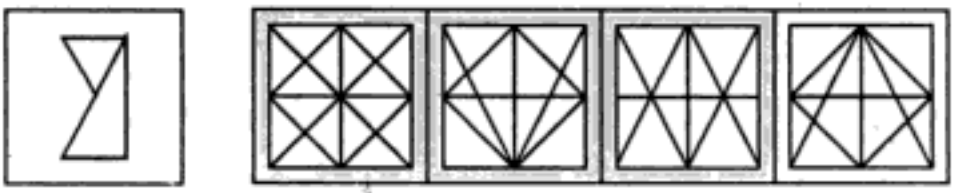
(S.S.C. 1994)

19.



(X) (a) (b) (c) (d)

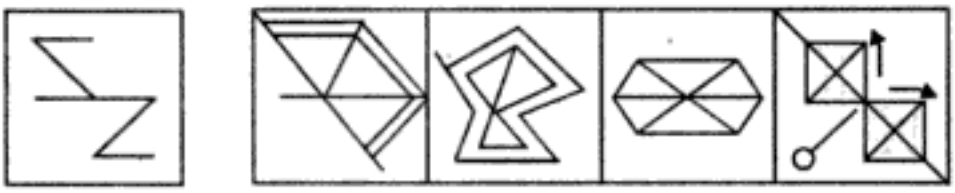
20.



(X) (a) (b) (c) (d)

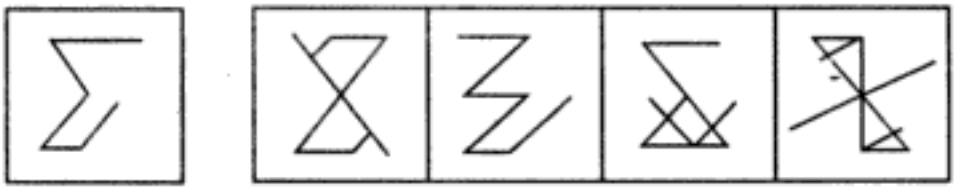
(O.B.J. 1994)

21.



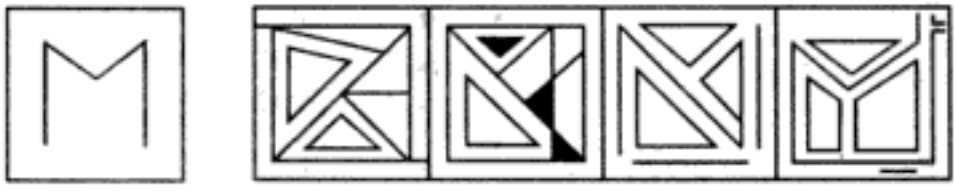
(X) (a) (b) (c) (d)

22.



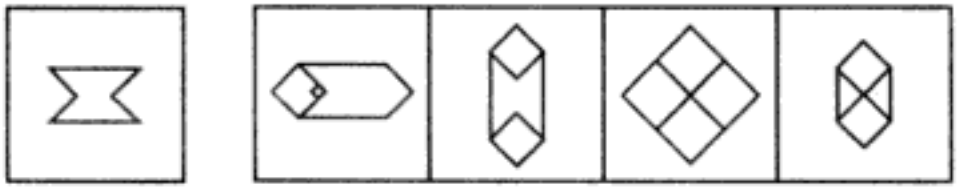
(X) (a) (b) (c) (d)

23.



(X) (a) (b) (c) (d)

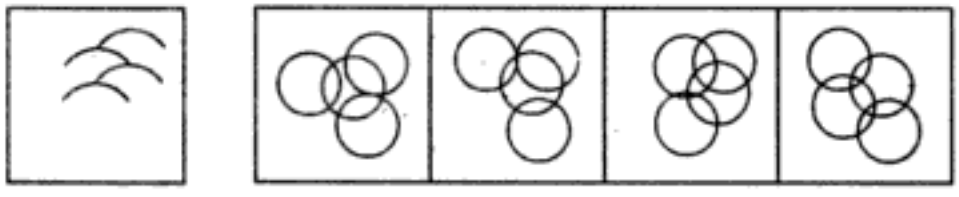
24.



(X) (a) (b) (c) (d)

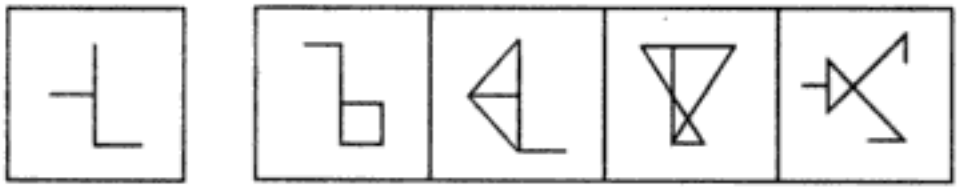
(I. Tax, 1993)

25.



(X) (a) (b) (c) (d)

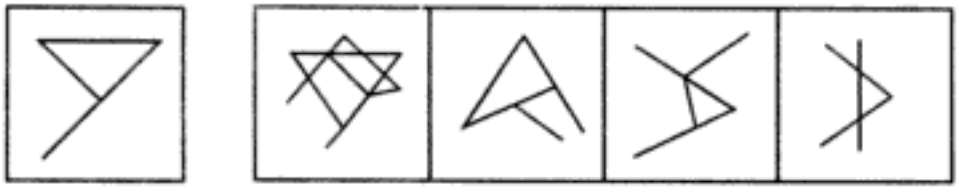
26.



(X) (a) (b) (c) (d)

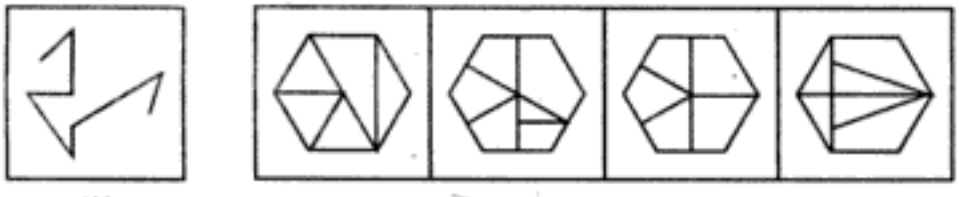
(Railways, 1993)

27.



(X) (a) (b) (c) (d)

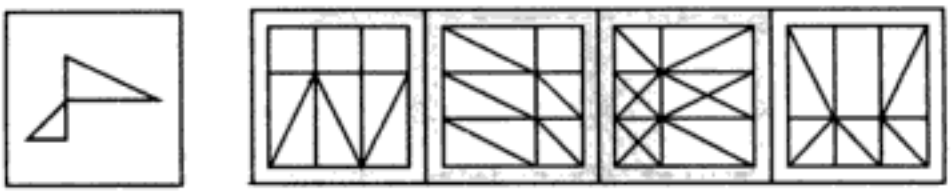
28.



(X) (a) (b) (c) (d)

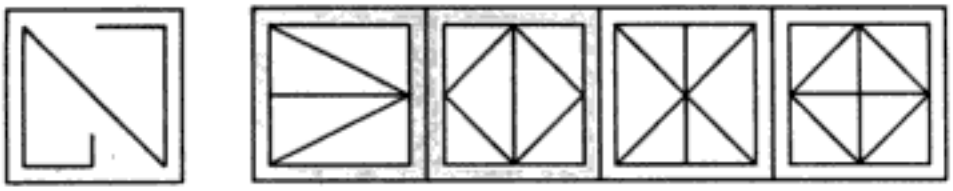
(U.D.C. 1995)

29.



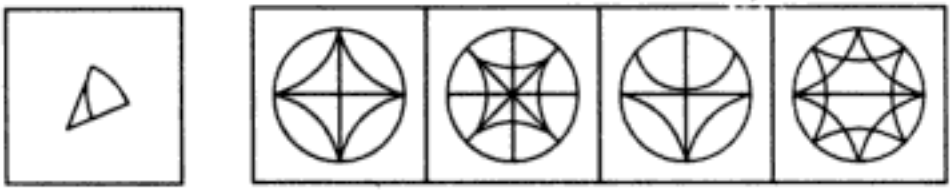
(X) (a) (b) (c) (d)

30.



(X) (a) (b) (c) (d)

31.

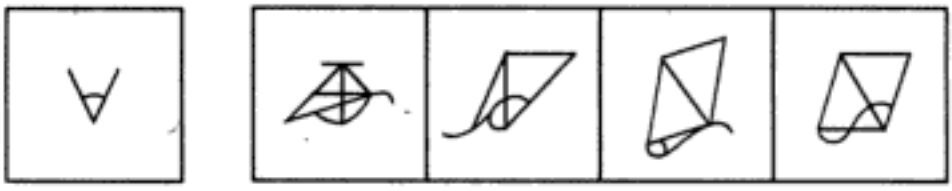


(X) (a) (b) (c) (d) **(Central Excise, 1994)**

32.

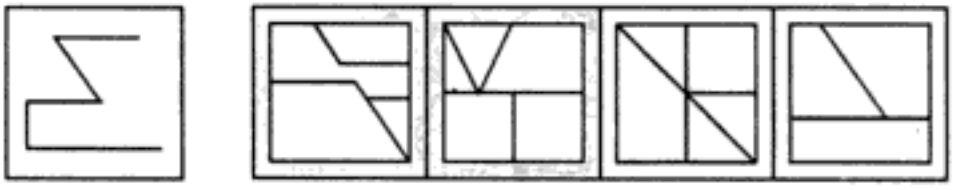
(X) (a) (b) (c) (d)

33.



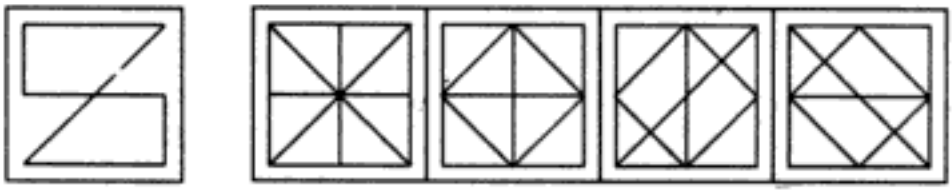
(X) (a) (b) (c) (d) **(Assistant Grade, 1995)**

34.



(X) (a) (b) (c) (d)

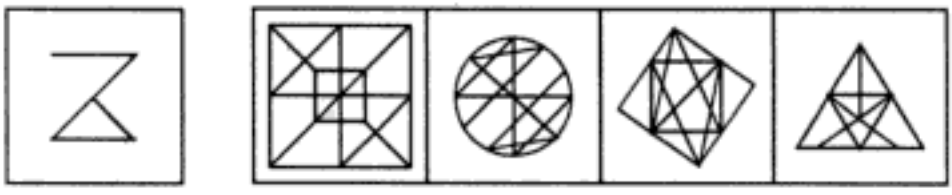
35.



(C.B.I. 1994)

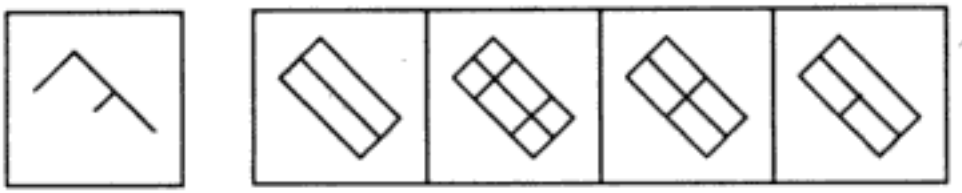
(X) (a) (b) (c) (d)

36.



(X) (a) (b) (c) (d)

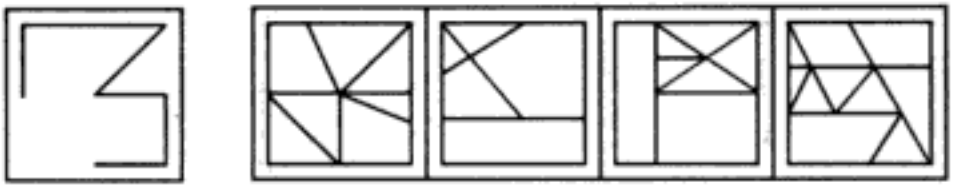
37.



(X) (a) (b) (c) (d)

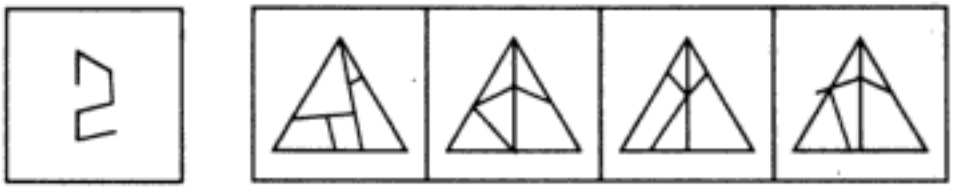
(I. Tax, 1993)

38.



(X) (a) (b) (c) (d)

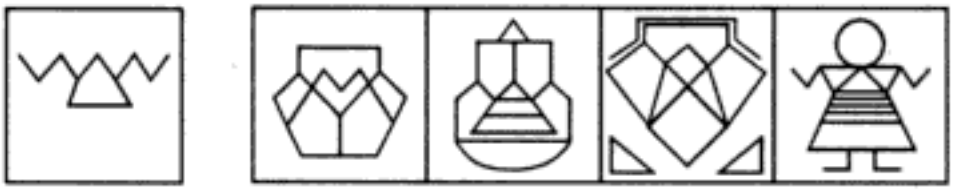
39.



(X) (a) (b) (c) (d)

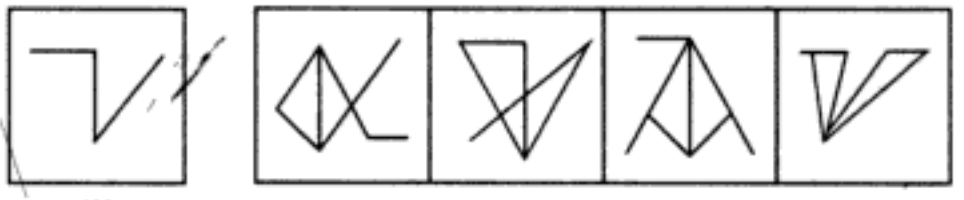
(U.D.C. 1995)

40.



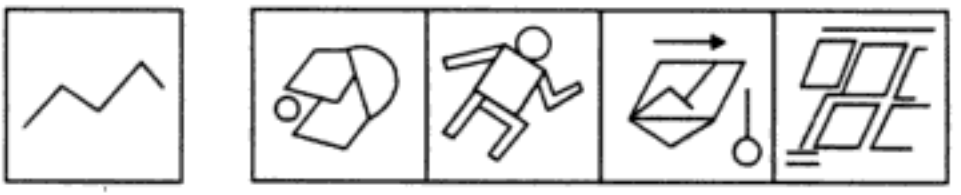
(X) (a) (b) (c) (d)

41.



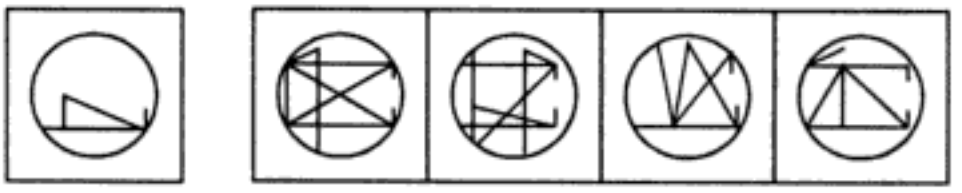
(X) (a) (b) (c) (d) **(Central Excise, 1993)**

42.



(X) (a) (b) (c) (d)

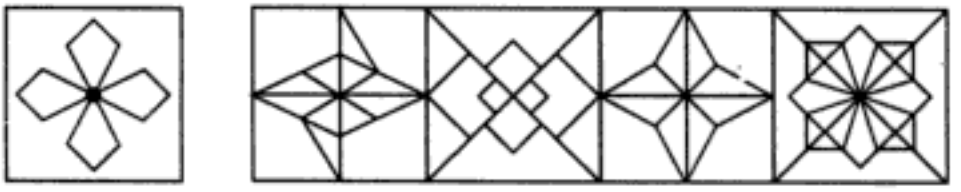
43.



(X) (a) (b) (c) (d)

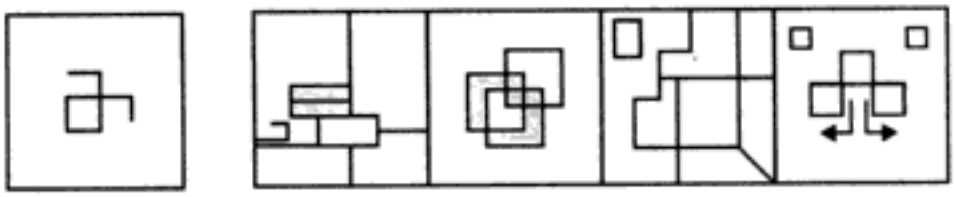
(C.B.I. 1995)

44.



(X) (a) (b) (c) (d)

45.

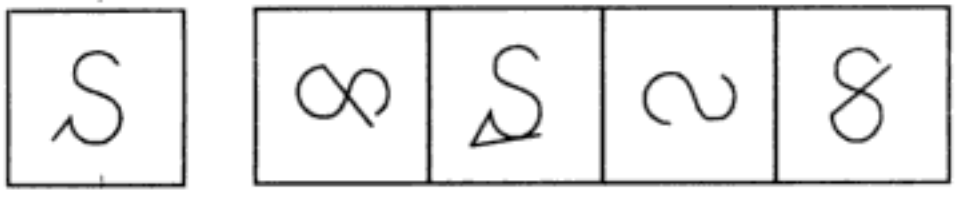


(X) (a) (b) (c) (d) **(Asstt. Grade, 1996)**

46.

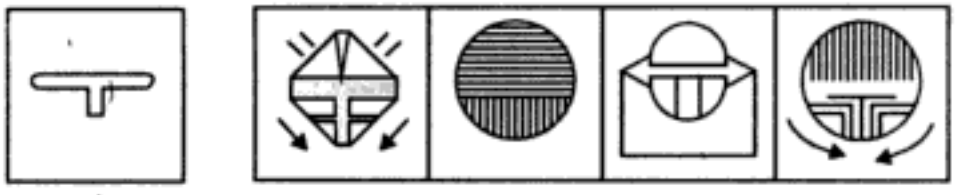
(X) (a) (b) (c) (d)

47.



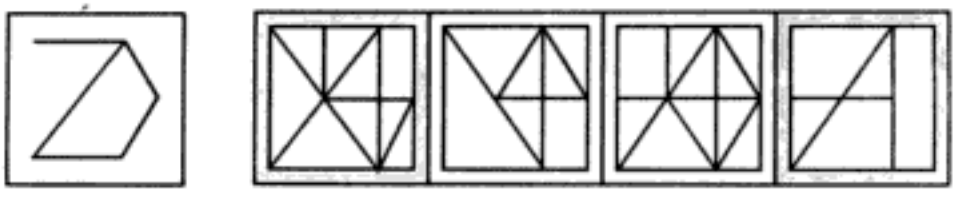
(X) (a) (b) (c) (d) **(Assistant Grade, 1995)**

48.



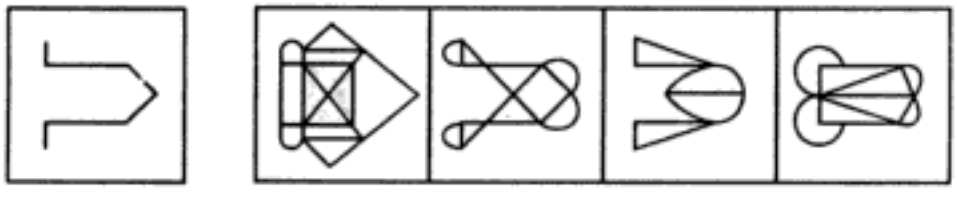
(X) (a) (b) (c) (d)

49.



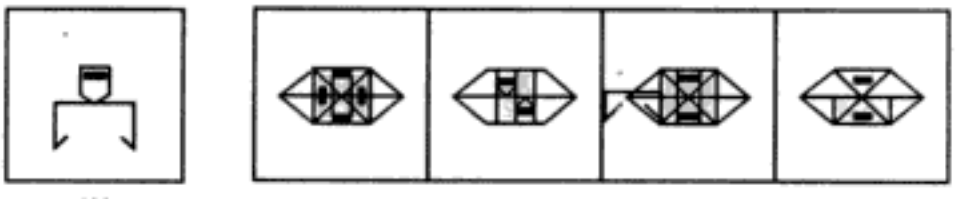
(X) (a) (b) (c) (d) **(CB.I. 1993)**

50.



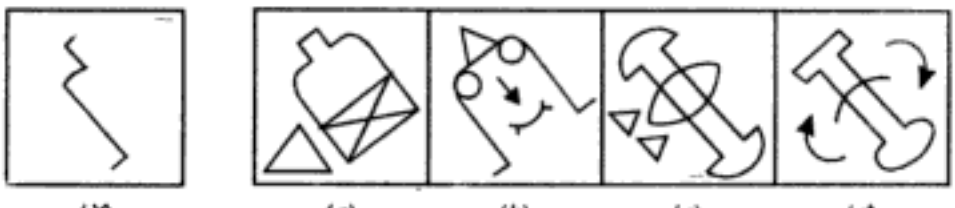
(X) (a) (b) (c) (d)

51.



(X) (a) (b) (c) (d)

52.



(X) (a) (b) (c) (d)

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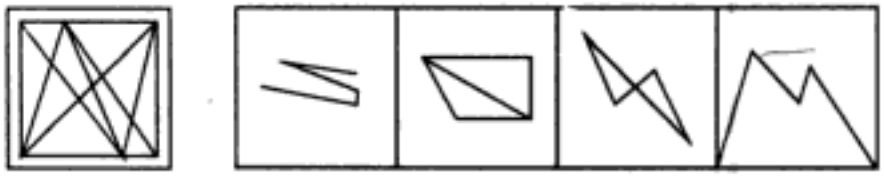
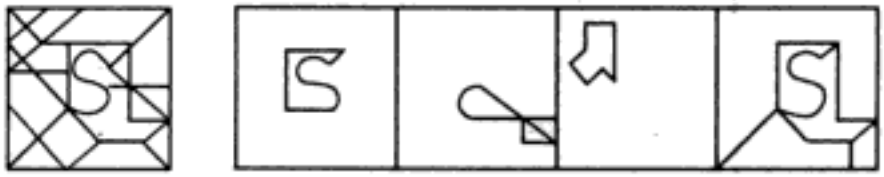
Directions : *In each of the following questions, choose the alternative figure which is embedded in the given fig. (X).*

61.



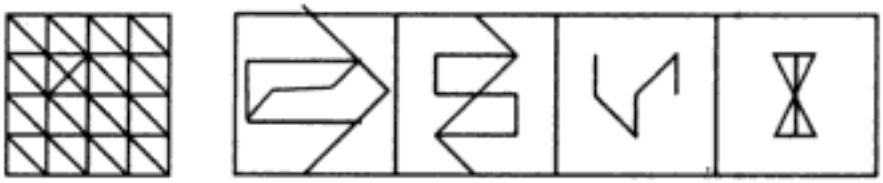
(X) (a) (b) (c) (d)

62.



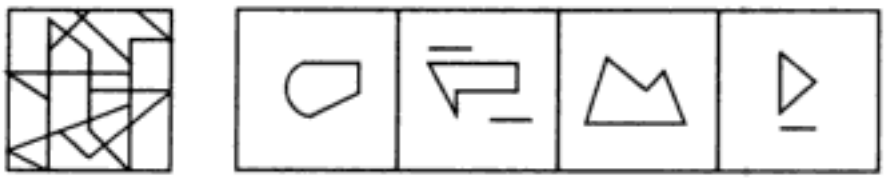
(X) (a) (b) (c) (d)

63.



(X) (a) (b) (c) (d)

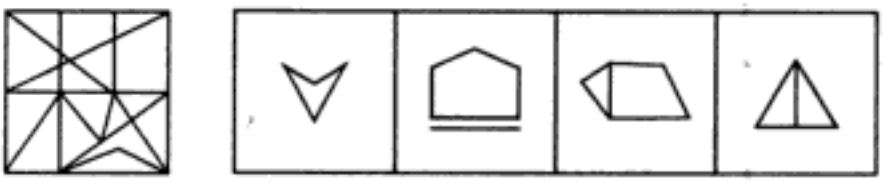
64.



(X) (a) (b) (c) (d)

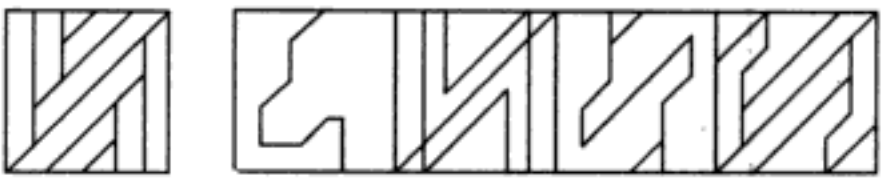
(C.B.I. 1995)

65.



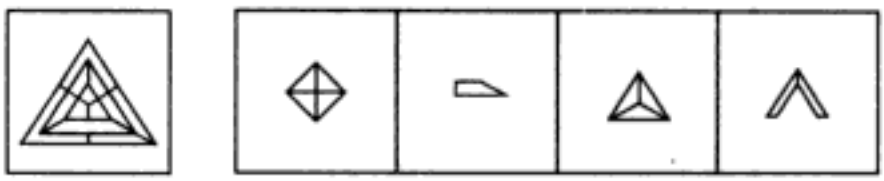
(X) (a) (b) (c) (d)

66.



(X) (a) (b) (c) (d)

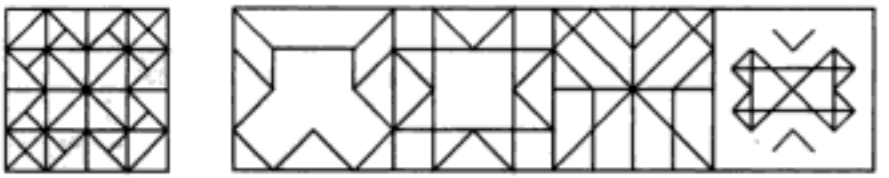
67.



(X) (a) (b) (c) (d)

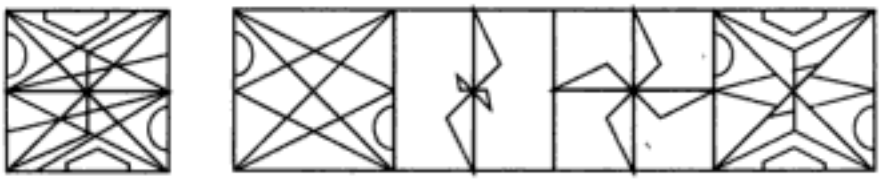
(Railways, 1993)

68.



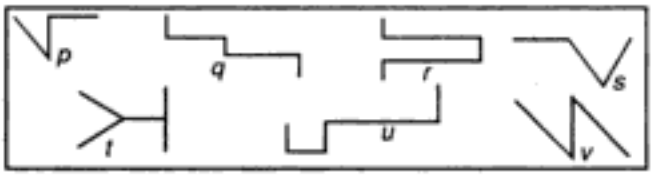
(X) (a) (b) (c) (d)

69.



(X) (a) (b) (c) (d)

Directions : *Consider the figures given below.*



Now answer questions 70 to 74

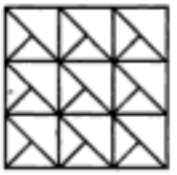
70. Which of the above figures is embedded in the figure given below? **(C.B.I. 1992)**

(a) r (b) s
(c) u (d) p

71. Which of the above figures is not embedded in the figure given below?

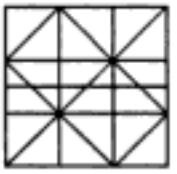
(a) r (b) s (c) q
(d) u (e) p

72. Which of the above figures is embedded in the following pattern? **(C.B.I. 1992)**



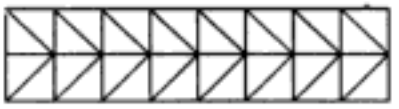
(a) q (b) t
(c) u (d) s

73. Which of the above figures is not embedded in the given pattern?



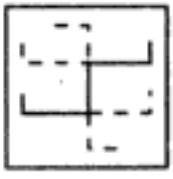
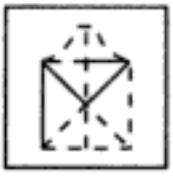
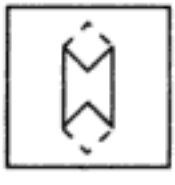
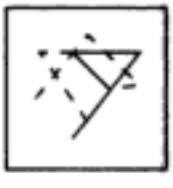
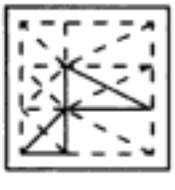
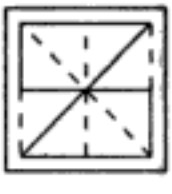
(a) p (b) q (c) r
(d) u (e) v

74. Which of the above figures is embedded in the following figure? **(C.B.I. 1992)**



(a) s (b) v
(c) r (d) q

ANSWERS

1. (*c*) 
2. (*b*) 
3. (*d*) 
4. (*c*) 
5. (*d*) 
6. (*c*) 
7. (*a*) 
8. (*c*) 
9. (*d*) 
10. (*d*) 
11. (*b*) 
12. (*c*) 
13. (*d*) 
14. (*b*) 
15. (*d*) 
16. (*b*) 
17. (*d*) 
18. (*b*) 
19. (*b*) 
20. (*c*) 
21. (*d*) 
22. (*c*) 
23. (*b*) 
24. (*b*) 
25. (*c*) 
26. (*b*) 
27. (*a*) 
28. (*d*) 
29. (*c*) 
30. (*c*) 
31. (*b*) 
32. (*d*) 
33. (*d*) 
34. (*d*) 
35. (*a*) 
36. (*b*) 

37. (*c*) 

38. (*a*) 

39. (*a*) 

40. (*d*) 

41. (*b*) 

42. (*b*) 

43. (*b*) 

44. (*d*) 

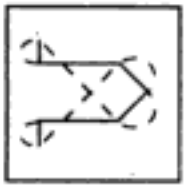
45. (*b*) 

46. (*d*) 

47. (*b*) 

48. (*b*) 

49. (*c*) 

50. (*b*) 

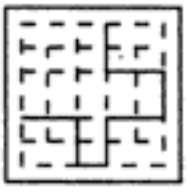
51. (*c*) 

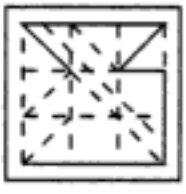
52. (*c*) 

53. (*d*) 

54. (*a*) 

55. (*d*) 

56. (*d*) 

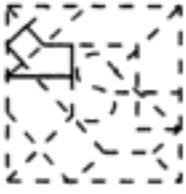
57. (*a*) 

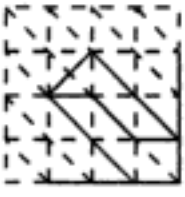
58. (*b*) 

59. (*a*) 

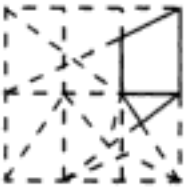
60. (*a*) 

61. (*a*) 

62. (*c*) 

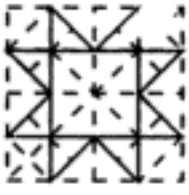
63. (*a*) 

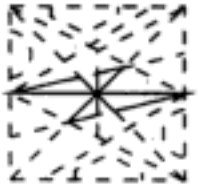
64. (*d*) 

65. (*c*) 

66. (*c*) 

67. (*b*) 

68. (*b*) 

69. (*b*) 

70. (*b*) 

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8. COMPLETION OF INCOMPLETE PATTERN

In this type of problems, a figure or a matrix containing a set of figures following a particular sequence or pattern is given, in which a part, generally a quarter is left blank. This problem figure is followed by four alternative figures. The candidate is required to choose the one which best fits into the blank space of problem figure so as to complete the original pattern?

ILLUSTRATIVE EXAMPLES

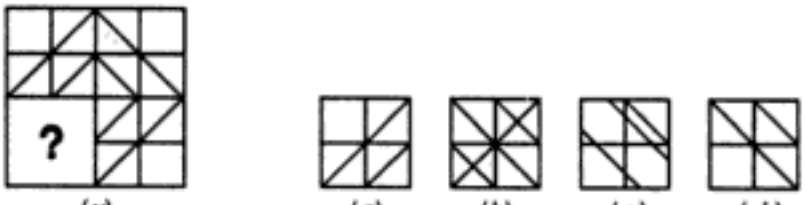
Ex. 1. ***Select a figure from the four alternatives, which when placed in the blank space of fig (x) would complete the pattern.***

(x) (a) (b) (c) (d)

Sol. Clearly, fig. (d) will complete the pattern when placed in the blank space of fig (x) as shown below.

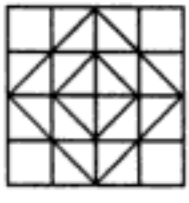
Hence, the answer is (*d*)

Ex. 2. ***Complete the pattern in fig (x) by selecting one of the figures from the four alternatives :***



(x) (a) (b) (c) (d)

Sol. Clearly, fig (d) when placed in the blank space of fig (x) will complete the pattern, as shown below.

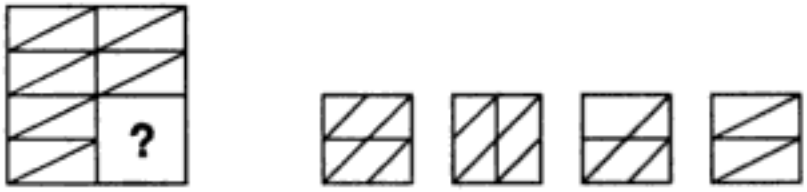


Hence, the answer is (*d*).

EXERCISE 8

Directions : ***In each of the following questions, complete the missing portion of the given pattern by selecting from the given alternatives (a), (b), (c) and (d).***

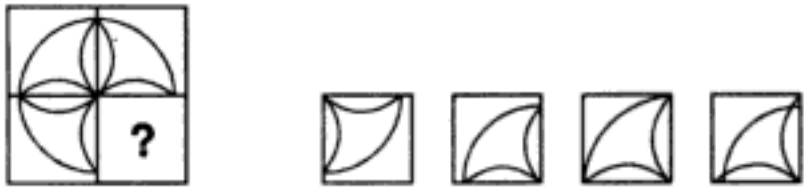
1.



(x) (a) (b) (c) (d)

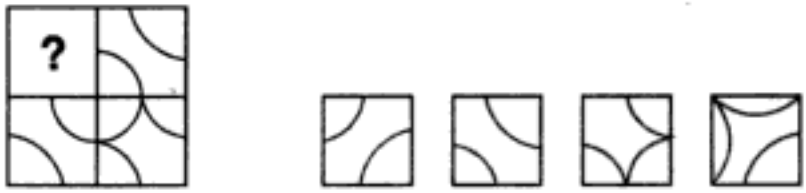
(U.D.C. 1993)

2.



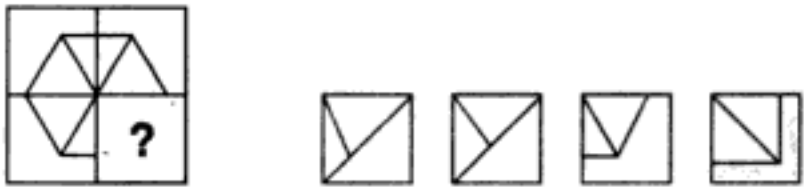
(x) (a) (b) (c) (d)

3.



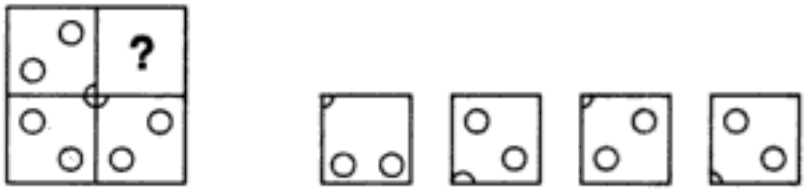
(x) (a) (b) (c) (d)

4.



(x) (a) (b) (c) (d)

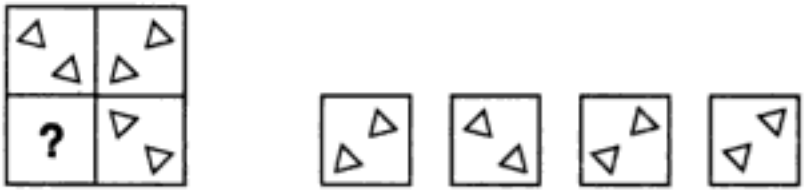
5.



(x) (a) (b) (c) (d)

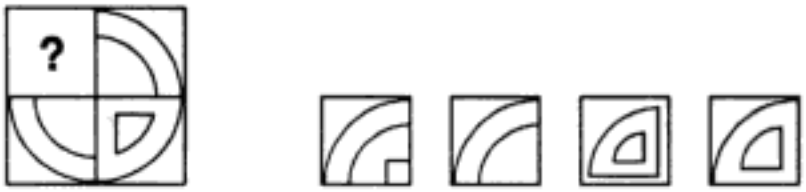
(C.B.I. 1988)

6.



(x) (a) (b) (c) (d)

7.



(x) (a) (b) (c) (d)

(S.S.C. 1993)

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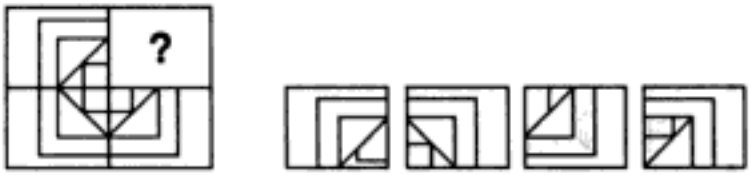
16.



(x) (a) (b) (c) (d)

(U.D.C. 1993)

17.

(x) (a) (b) (c) (d)

18.

(x) (a) (b) (c) (d)

19.

(x) (a) (b) (c) (d)

20.

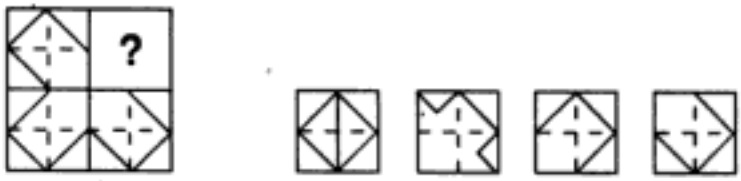
(x) (a) (b) (c) (d)

21.

(x) (a) (b) (c) (d)

(Asstt. Grade, 1993)

22.



(x) (a) (b) (c) (d)

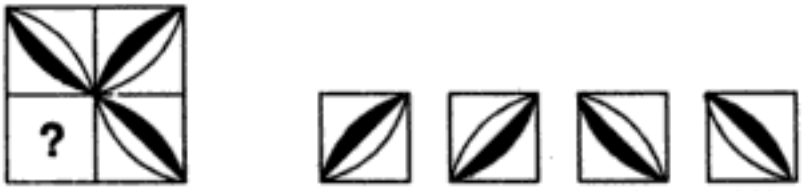
23.

(x) (a) (b) (c) (d)

(C.B.I. 1994)

Hidden page

32.

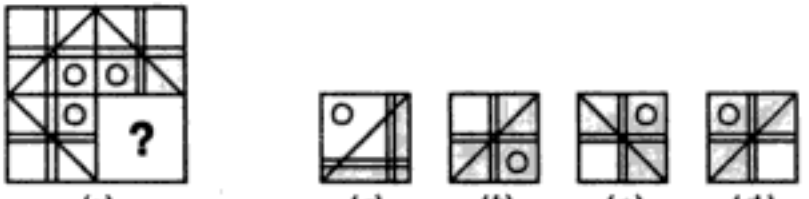


(*x*) (*a*) (*b*) (*c*) (*d*) **(Transmission Executives', 1994)**

33.

(*x*) (*a*) (*b*) (*c*) (*d*) **(U.D.C. 1993)**

34.



(*x*) (*a*) (*b*) (*c*) (*d*)

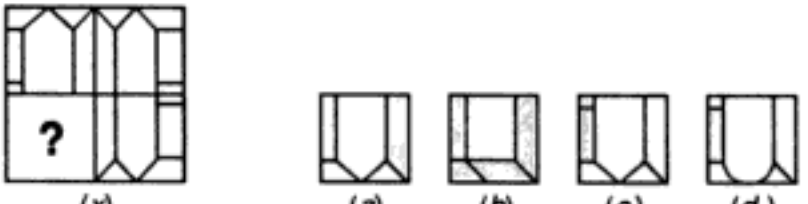
35.

(*x*) (*a*) (*b*) (*c*) (*d*)

36.

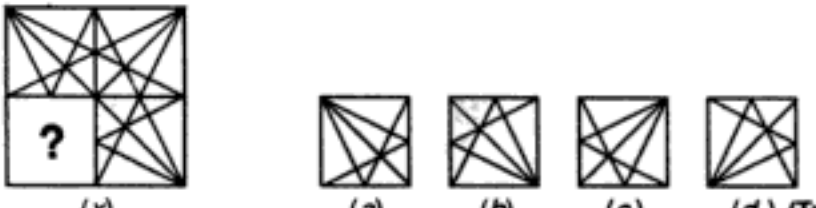
(*x*) (*a*) (*b*) (*c*) (*d*) **(C.B.I. 1994)**

37.



(*x*) (*a*) (*b*) (*c*) (*d*)

38.



(*x*) (*a*) (*b*) (*c*) (*d*) **(Transmission Executives', 1994)**

39.

(*x*) (*a*) (*b*) (*c*) (*d*)

40.

(x) (a) (b) (c) (d) **(U.D.C. 1995)**

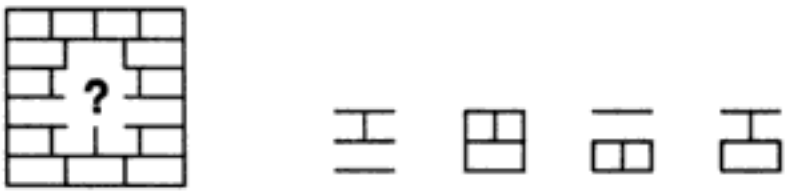
41.

(x) (a) (b) (c) (d) **(Asstt. Grade, 1995)**

42.

(x) (a) (b) (c) (d) **(S.S.C. 1993)**

43.

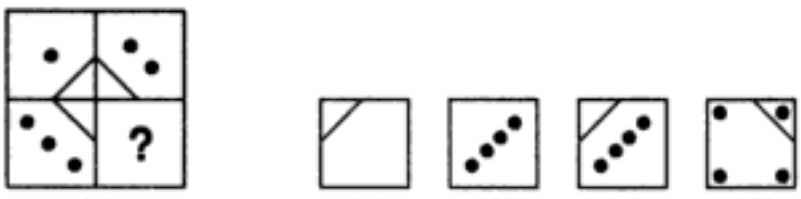


(x) (a) (b) (c) (d) **(U.D.C. 1993)**

44.

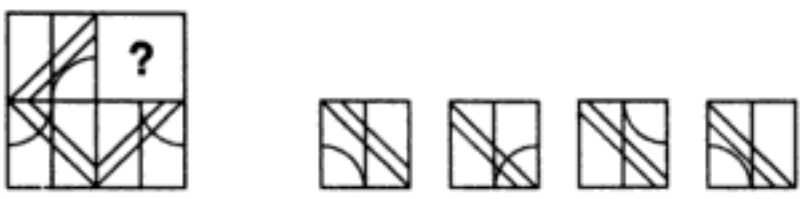
(x) (a) (b) (c) (d)

45.



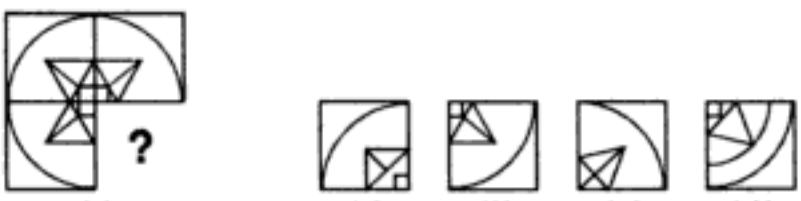
(x) (a) (b) (c) (d) **(Asstt. Grade, 1995)**

46.



(x) (a) (b) (c) (d)

47.

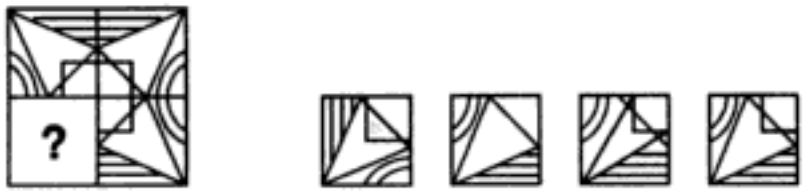


(x) (a) (b) (c) (d) **(U.D.C. 1995)**

48.

(*x*) (*a*) (*b*) (*c*) (*d*)

49.

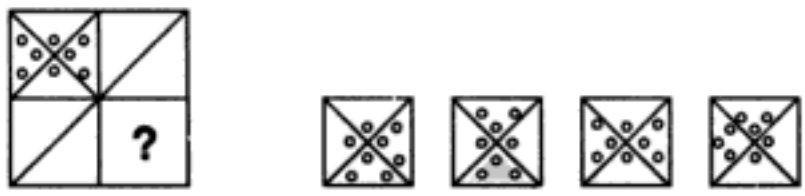


(*x*) (*a*) (*b*) (*c*) (*d*)

50.

(*x*) (*a*) (*b*) (*c*) (*d*) **(U.D.C. 1995)**

51.

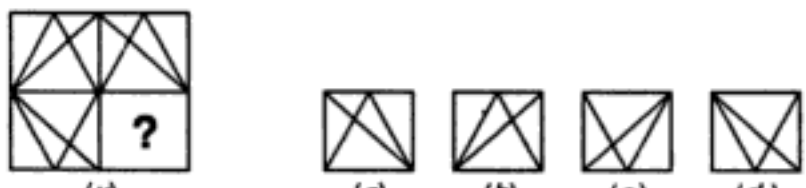


(*x*) (*a*) (*b*) (*c*) (*d*) **(Asst. Grade, 1995)**

52.

(*x*) (*a*) (*b*) (*c*) (*d*)

53.



(*x*) (*a*) (*b*) (*c*) (*d*) **(S.S.C. 1995)**

54.

(*x*) (*a*) (*b*) (*c*) (*d*)

55.

(*x*) (*a*) (*b*) (*c*) (*d*) **(U.D.C. 1995)**

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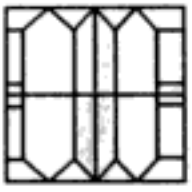
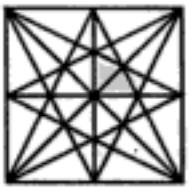
37. (*c*)

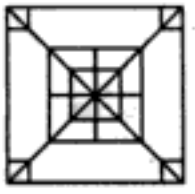


38. (*d*)

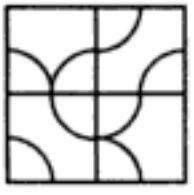


39. (*a*)

40. (*d*)

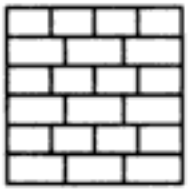


41. (*a*)



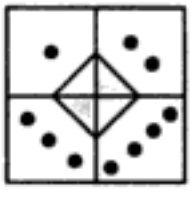
42. (*d*)

43. (*d*)

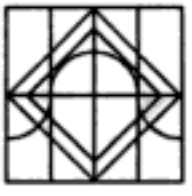


44. (*d*)

45. (*c*)



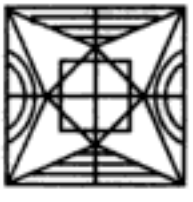
46. (*d*)



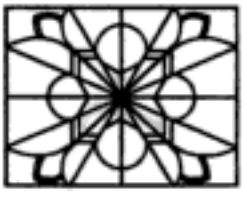
47. (*a*)

48. (*c*)

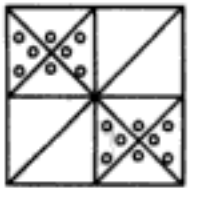
49. (*d*)



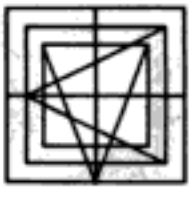
50. (*b*)



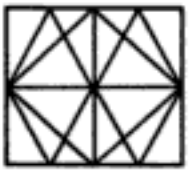
51. (*c*)



52. (*d*)

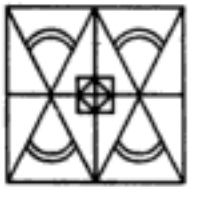


53. (*c*)



54. (*c*)

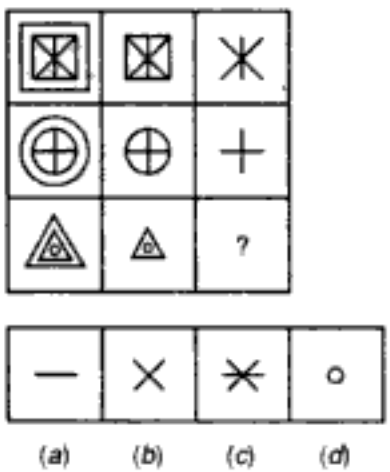
55. (*a*)



9. FIGURE MATRIX

In this type of questions, more than one set of figures is given in the form of a matrix, all of them following the same rule. The candidate is required to analyse the complete sets; find out the common rule and then on its basis, find the missing figure in the incomplete set.

Example 1 : ***Select one alternative figure out of (a), (b), (c) and (d), which completes the given matrix.***



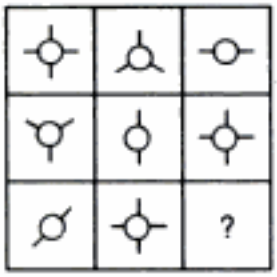
(Assistant Grade, 1994)

Solution : Clearly, in the first and second rows, the second figure is the inner part of the first figure and the third figure is the inner part of the second figure.
Thus, the missing figure should be the inner part of the second figure in third row, i.e. a small circle.
Hence, the answer is (d).

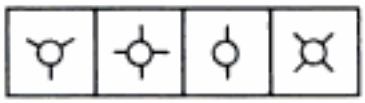
EXERCISE 9

Directions : ***In each of the following questions, find out which of the answer figures (a), (b), (c) and (d) completes the figure - matrix ?***

1.

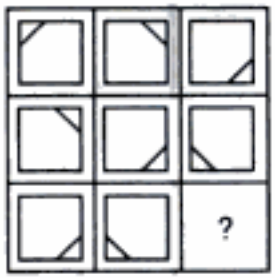


(Asstt. Grade, 1995)



(a) (b) (c) (d)

2.



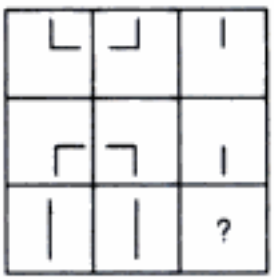
(Railways, 1994)

(a) (b) (c) (d)

3.

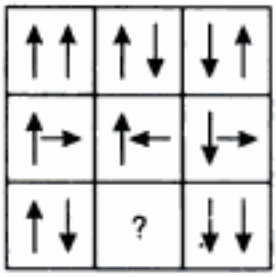
(a) (b) (c) (d)

4.

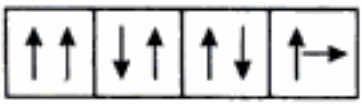


(a) (b) (c) (d)

5.

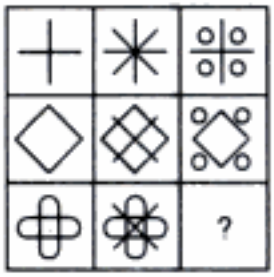


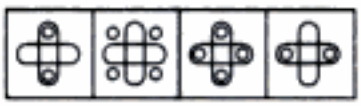
(Railways, 1993)



(a) (b) (c) (d)

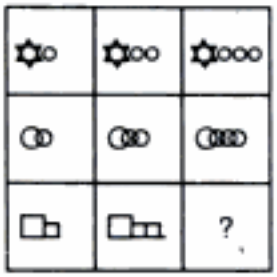
6.



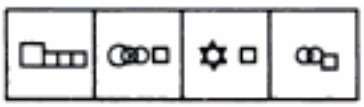


(a) (b) (c) (d)

7.

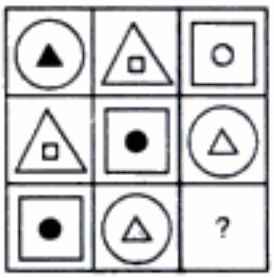


(Assistant Grade, 1995)



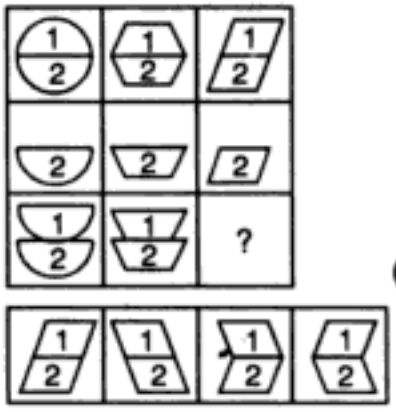
(a) (b) (c) (d)

8.



(a) (b) (c) (d)

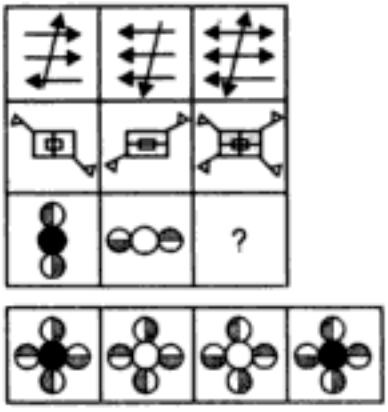
9.



(P.C.S. 1995)

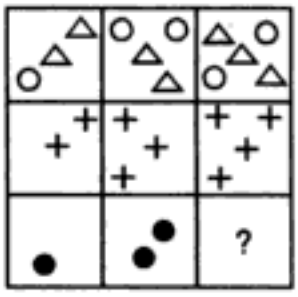
(a) (b) (c) (d)

10.

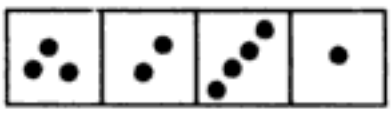


(a) (b) (c) (d)

11.

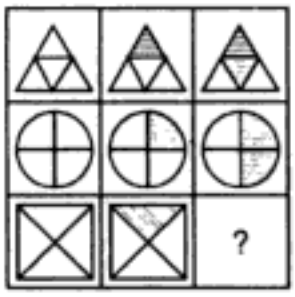


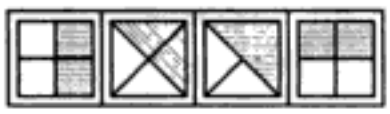
(C.B.I. 1993)



(a) (b) (c) (d)

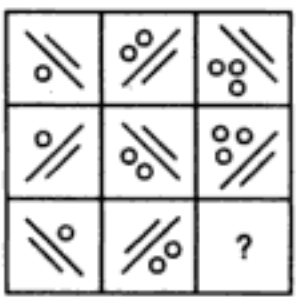
12.



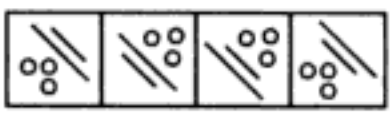


(a) (b) (c) (d)

13.

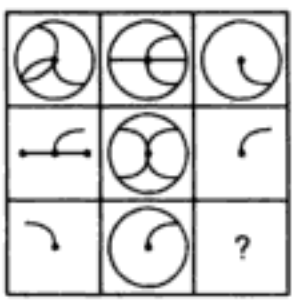


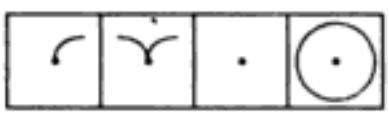
(Asstt. Grade, 1996)



(a) (b) (c) (d)

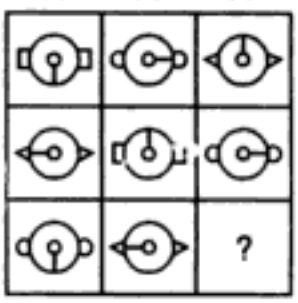
14.

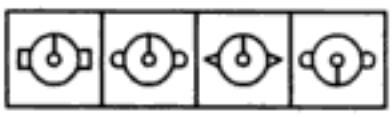




(a) (b) (c) (d)

15.

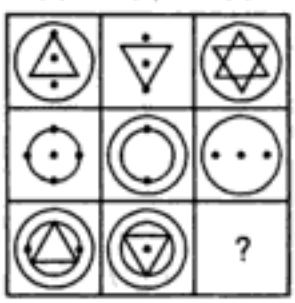


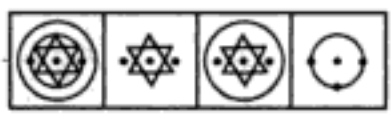


(a) (b) (c) (d)

(Investigators' Exam, 1992)

16.





(a) (b) (c) (d)

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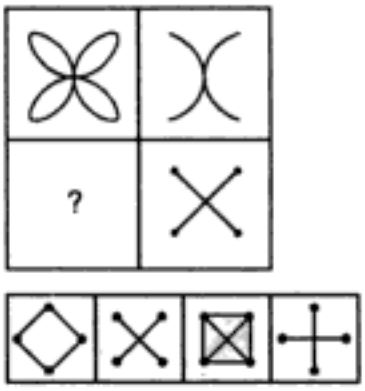
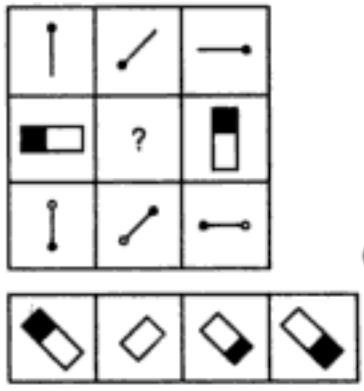
25.



(a) (b) (c) (d)

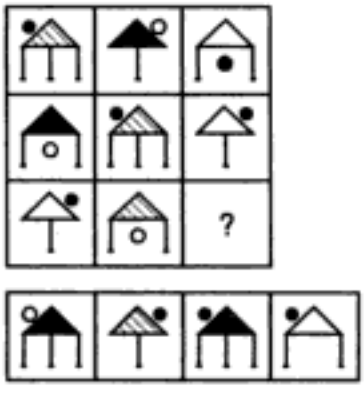
26.



(C.B.I. 1993)

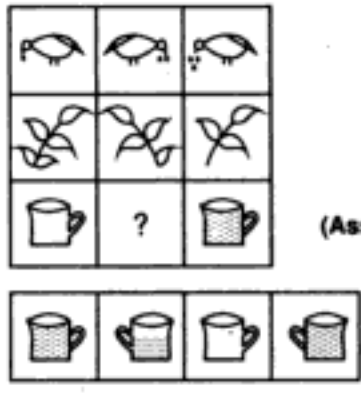
(a) (b) (c) (d)

27.



(a) (b) (c) (d)

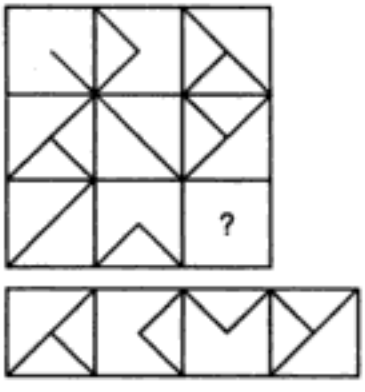
28.



(Assistant Grade, 1996)

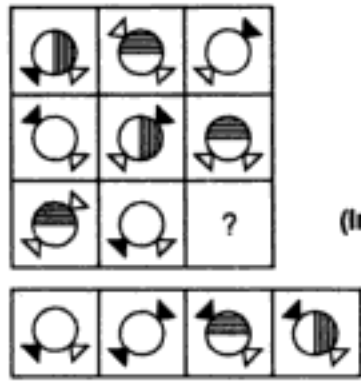
(a) (b) (c) (d)

29.



(a) (b) (c) (d)

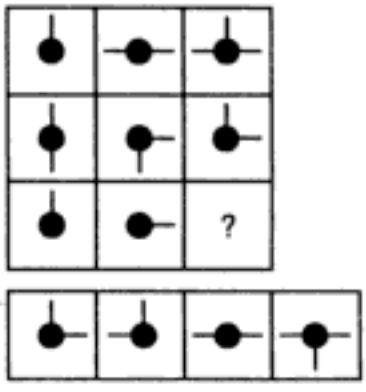
30.



(Investigators' Exam, 1992)

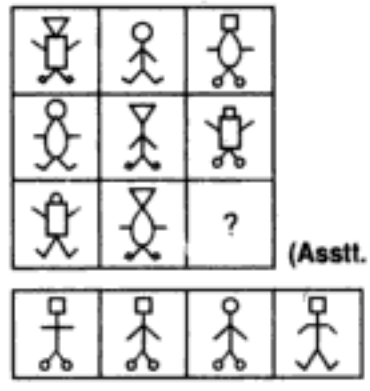
(a) (b) (c) (d)

31.



(a) (b) (c) (d)

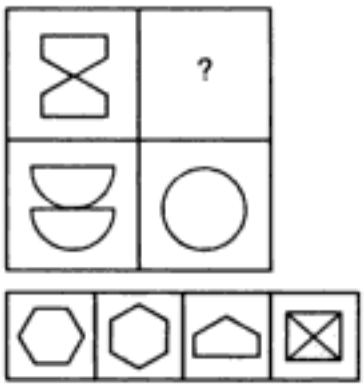
32.



(Asstt. Grade, 1994)

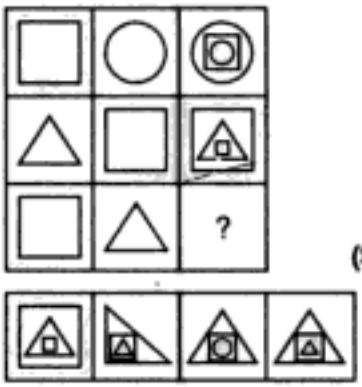
(a) (b) (c) (d)

33.



(*a*) (*b*) (*c*) (*d*)

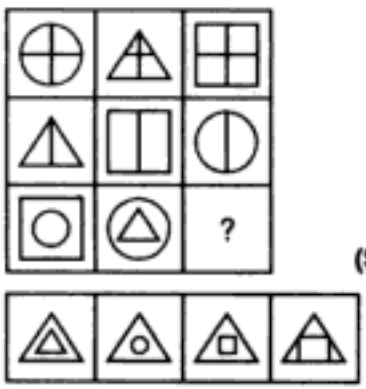
34.



(S.S.C. 1995)

(*a*) (*b*) (*c*) (*d*)

35.



(S.S.C. 1995)

(*a*) (*b*) (*c*) (*d*)

ANSWERS

1. (*b*) : Each row of the matrix contains one circle with two bars, one with three bars and one circle with four bars.

2. (*b*) : The line inside the square moves from one corner to another, clockwise, as we move from left to right in a row.

3. (*d*) : The third tile from the left, in a row has design which is a union of the designs of the two tiles on its left.

4. (*c*) : The third coloumn contains the line which is common to the designs in the first two columns.

5. (*a*) : Second figure in each row consists of first arrow of the first figure as such and the second one in an inverted position. The third figure consists of the first arrow of the first figure in an inverted position and the second arrow as such.

6. (*b*) : As we move from the first to the second figure in a row, the figure gets intersected by two mutually perpendicular lines. In the next step, dots appear at the ends of these lines and the lines disappear to give the third figure.

7. (*a*) : In each row, the number of smaller figures increase by one at each step from left to right.

8. (*c*) : There are 3 outer figures (circle, triangle & square), 3 inner figures (circle, triangle and square) and 3 types of shading—plane, line and dark.

9. (*c*) : Each figure in third row comprises of fig. 1 of first row in inverted position and fig. 2 as it is.

10. (*d*) : The third figure in each row is the union of first two figures.

11. (*a*) : The number of objects increases by 1 at each step from left to right in each row.

12. (*b*) : The first figure in each row is completely unshaded, the second one has one-fourth part shaded and the third one is half shaded.

13. (*b*) : In each figure, the circles are towards the longer line. The number of circles increases by 1 at each step from left to right in each row. Also, the positions of the lines in the first and third figures are identical.

14. (*c*) : The third figure in each row comprises of the parts common to the first two figures.

15. (*a*) : In the third row, the inner circle with the bar moves 90° clockwise at each step. Also, there are 3 types of side figures—triangle, circle and square, of which only square remains unused in the third row.

16. (*b*) : The third figure in each row comprises of parts which are not common to the first two figures.

17. (*b*) : The number of squares follow the pattern +1 in first row, +2 in second row and +3 in third row.

18. (*c*) : The third figure in each row comprises of parts which are not common to the first two figures.

19. (*a*) : There are three types of arrows—a single arrow with a line, a double arrow and a triple arrow. There are 3 positions of arrows—upwards, downwards and sideways towards right. The arrows have 3 types of bases—plane, rectangular and circular. Each of these features is used once in each row.

20. (*d*) : The number of dots in the second figure is thrice the number in the first figure in each row.

21. (*b*) : The number of each type of figures decreases by 1 at each step from left to right in each row.

22. (*d*) : There are 3 types of faces, 3 types of hands and 3 types of legs. Each type is used once in each row. So, the features not used in the first two figures of the third row would together from the missing figure.

23. (*d*) : The third figure in each row comprises of parts which are not common to the first two figures.

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10. PAPER FOLDING

The problems based on paper folding involve the process of selecting a figure which would most closely resemble the pattern that would be formed when a transparent sheet carrying designs on either side of a dotted line, is folded along this line. The figure has to be selected from a set of four alternatives.

Directions : ***In each one of the following examples, find from amongst the four response figures, the one which resembles the pattern formed when the transparent sheet, carrying a design is folded along the dotted line.***

Example 1 :

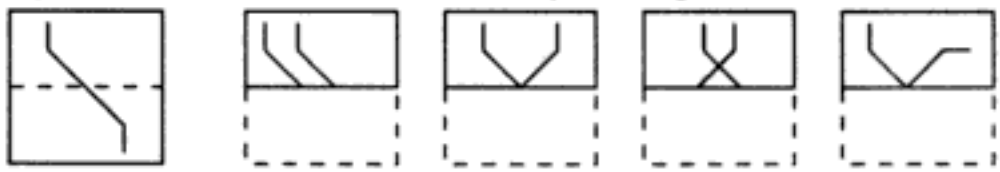
Transparent Sheet **Response Figures**

A B C D

Solution : The right halves of the response figures being dotted, indicate that the right half of the transparent sheet has been folded and placed over the left half. Visualising the combination of the designs on the two parts, we obtain fig. (D).
Hence, fig. (D) is the correct answer.

Example 2 :

Transparent Sheet **Response Figures**



A B C D

Solution : Clearly, the lower half of the square sheet has been folded over the upper half. Hence, the bent line in the lower half will be inverted over the other half so that a 'V' shaped figure is formed.
Hence, the answer is (B).

Example 3 :

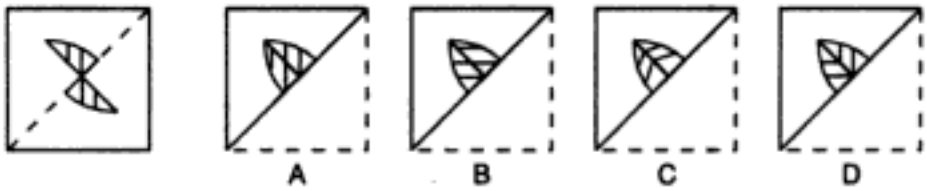
Transparent Sheet **Response Figures**

A B C D

Solution : The circular sheet of transparent paper has been folded along the dotted line such that left half overlaps the right half and consequently the smaller arrows will appear to penetrate inside the larger ones.
Hence, fig. (C) is the answer.

Example 4 :

Transparent Sheet **Response Figures**



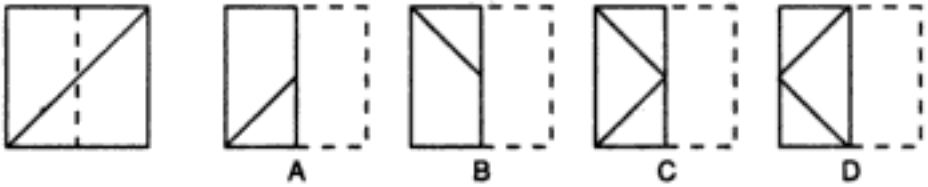
Solution : Here, the sheet has been folded diagonally and the designs on the either side of the dotted line combine to form fig. (D).
Hence, fig. (D) is the answer.

EXERCISE 10

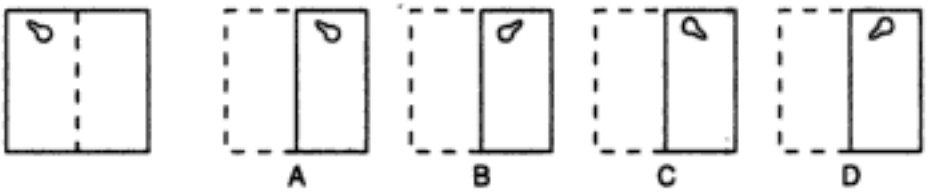
Directions : ***In each one of the following problems, a square transparent sheet with a pattern is given. Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.***

Transparent Sheet **Response Figures**

1.

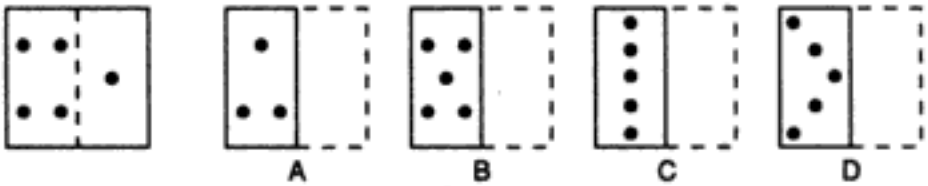


2.

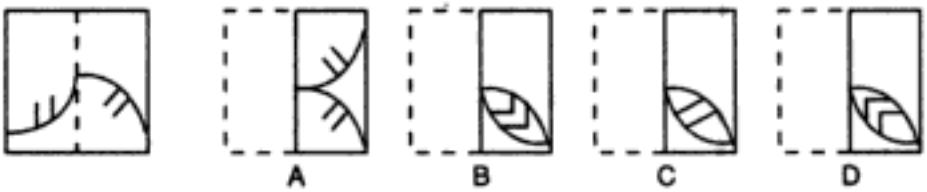


(C.B.I. 1989)

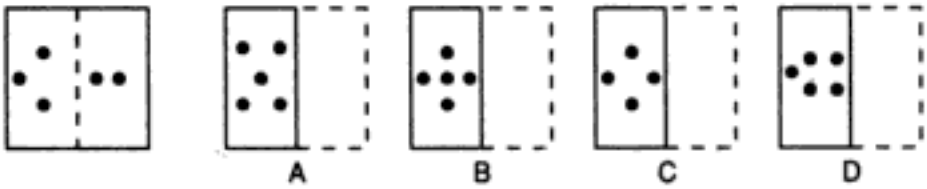
3.



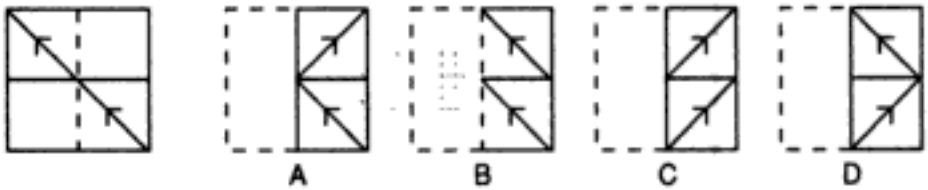
4.



5.



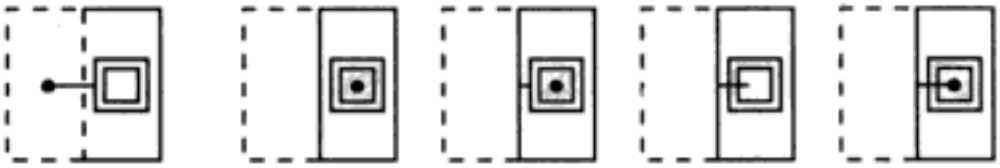
6.



(C.B.I. 1990)

Transparent Sheet **Response Figures**

7.

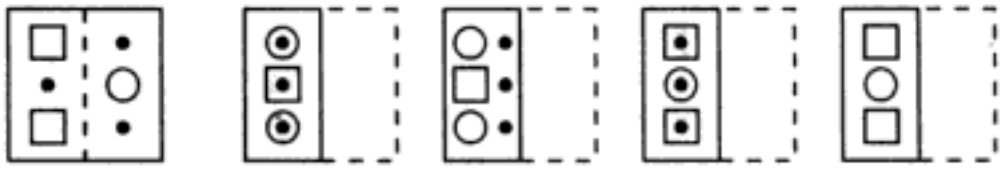


A B C D

8.

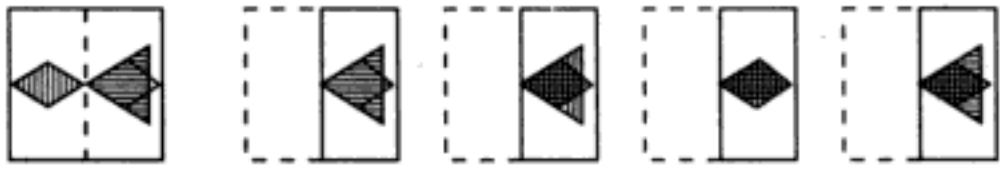
A B C D

9.



A B C D

10.

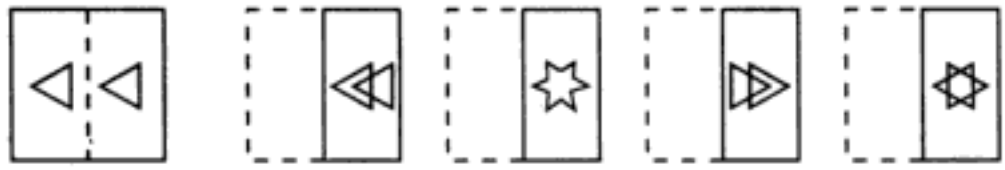


A B C D

11.

A B C D

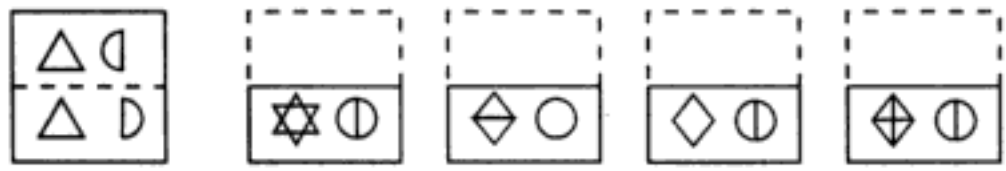
12.



A B C D

(Delhi Police, 1989)

13.



A B C D

14.

A B C D

15.

A B C D

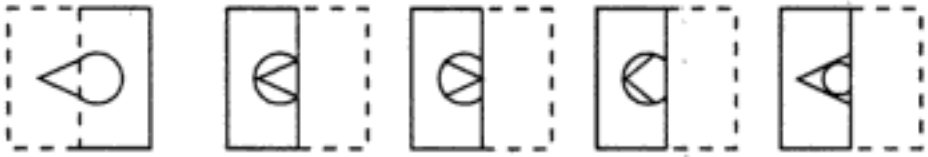
(C.B.I. 1990)

Transparent Sheet **Response Figures**

16.

A B C D

17.



A B C D

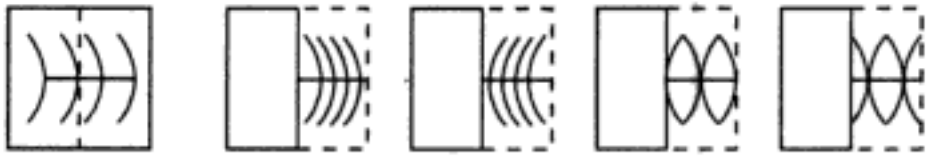
18.

A B C D

19.

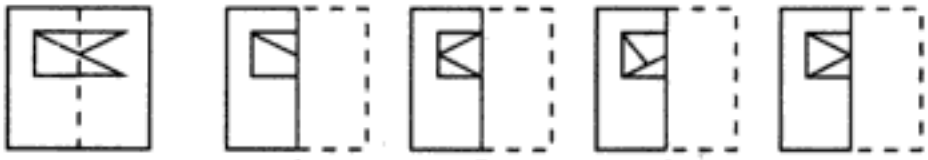
A B C D

20.



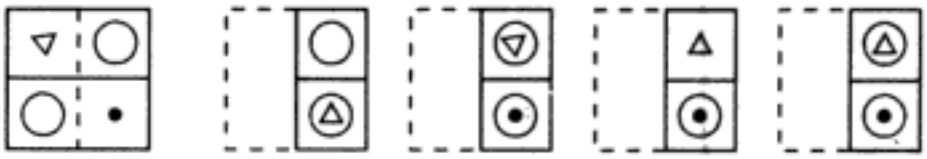
A B C D

21.



A B C D

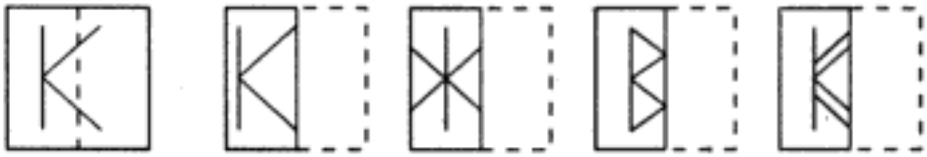
22.



A B C D

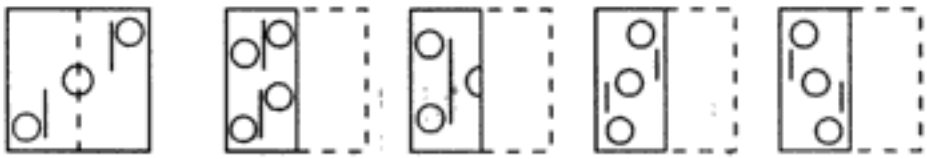
(C.B.I. 1990)

23.



A B C D

24.



A B C D

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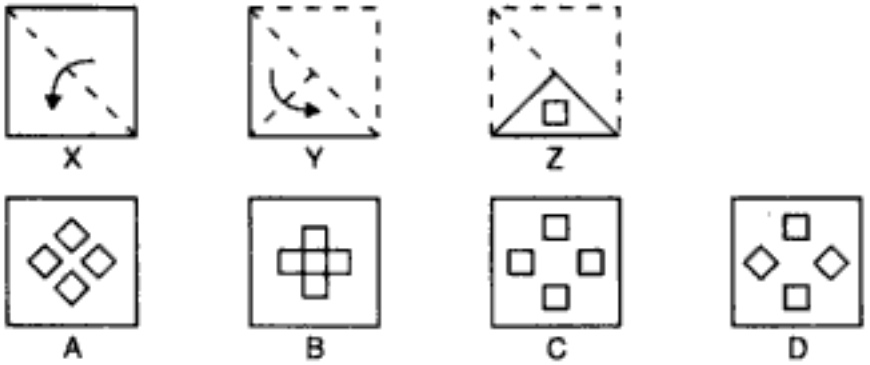
11. PAPER CUTTING

In this chapter we shall study the problems relating to the analysis of pattern that is formed when a folded piece of paper has been cut in a definite design.

Problems on Paper Cutting : In this type of questions, a set of three figures showing the manner in which a piece of paper has been folded, are being given. In each of the first two figures, a dotted line together with an arrow on it has been given. The dotted line is the reference line along which the paper has to be folded and the arrow indicates the direction of the fold. In the third figure, there are marks showing the position and the nature of the cut made in the folded sheet. The examinee has to select one of the figures from the set of four answer figures A, B, C and D which would most closely resemble the pattern when the paper is unfolded.

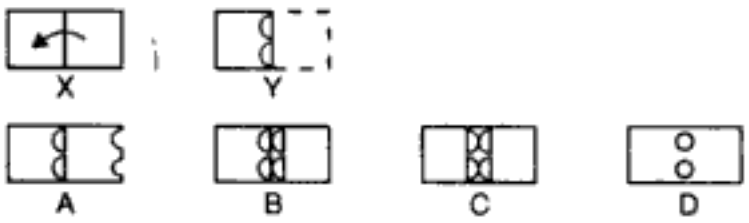
Remark : Evidently, the designs of the cut will appear on each one of the folds made in the paper.

Ex. 1. ***Consider the following three figures, marked X, Y, Z showing one fold in X, another in Y and cut in Z. From amongst the answer figures A, B, C and D, select the one, showing the unfolded position of Z.***



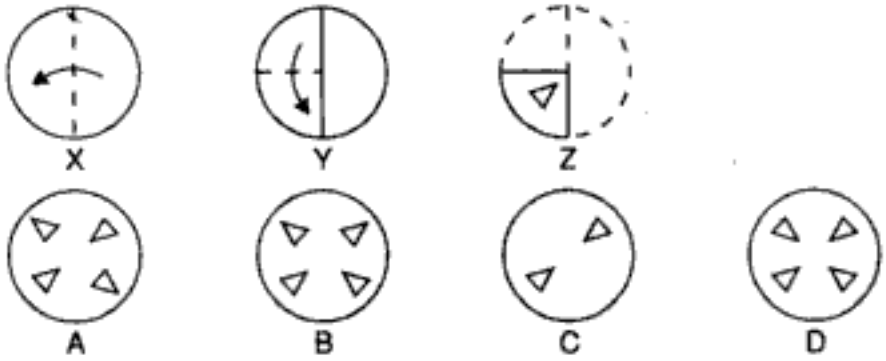
Sol. In fig. X, the upper triangular half of the paper has been folded over the lower half.
In fig. Y, the paper is refolded to a quarter triangle.
In fig. Z, a square has been punched in the folded paper.
Clearly, the square will appear in each of the triangular quarters of the paper.
Thus, when the paper is unfolded, four squares will appear symmetrically over it and it will resemble fig. (C).

Ex. 2. ***Consider the figures X and Y showing a rectangular sheet of paper folded in fig. X and punched in fig. Y. From amongst the answer figures A, B, C and D, select the figure, which will most closely resemble the unfolded position of fig. Y.***



Sol. In fig. X, the right half of the rectangular paper sheet is folded over the left half. In fig. Y, two semicircles are punched into the folded paper. When the paper is unfolded, the semicircles in the two halves will join to form circles. Thus, two circles will appear in the unfolded position of fig. Y. Hence, fig. (D) is the correct answer.

Ex. 3. ***In the following question, three figures X, Y, Z, showing a sequence of folding a paper are given. The third figure depicts the cuts made in the folded paper. Select the figure from the answer figures marked A, B, C and D which would most closely resemble the third paper when unfolded.***



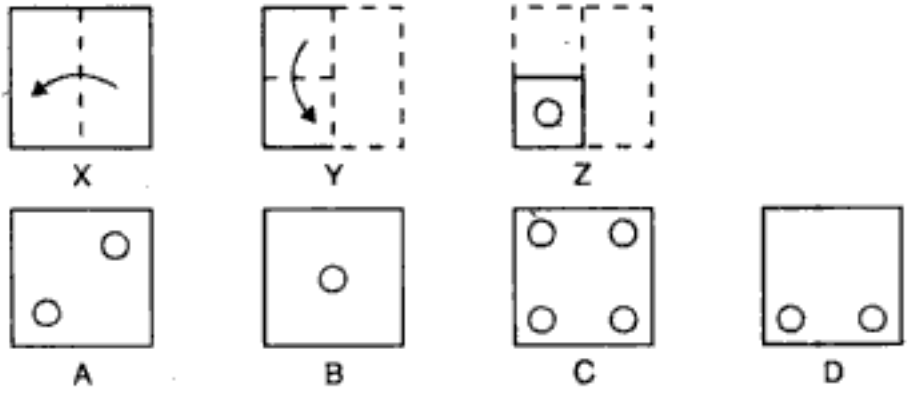
Sol. Here, the circular sheet of paper is once folded along a diameter such that one semicircle lies above another. Now, the sheet is refolded along the line of symmetry such that all the quarter circles lie one above another. Then a triangular cut is made on the folded sheet. When this sheet is unfolded once, it will appear as shown below :

This sheet when completely unfolded will contain triangles on each quarter and will appear as fig. (*D*).
Hence, the answer is fig. (*D*).

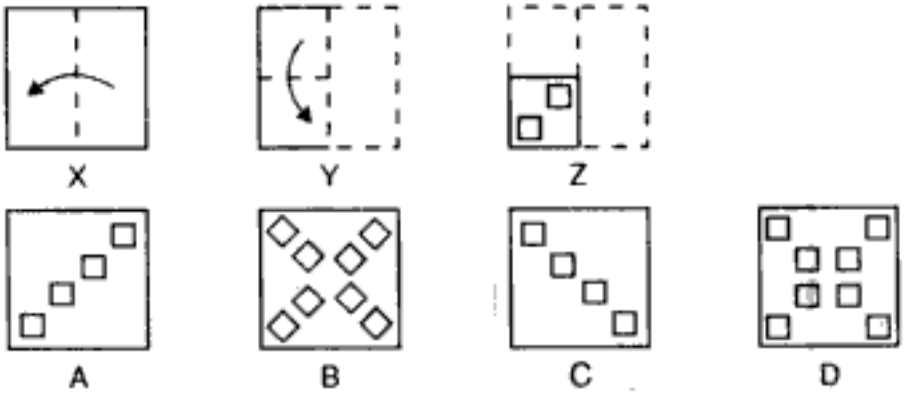
EXERCISE 11

Directions : ***The questions that follow contain a set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Fig. (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig. (Z).***

1.



2.



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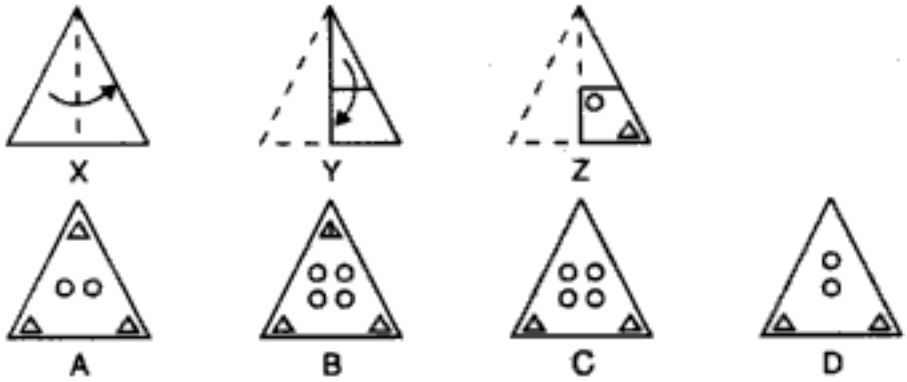
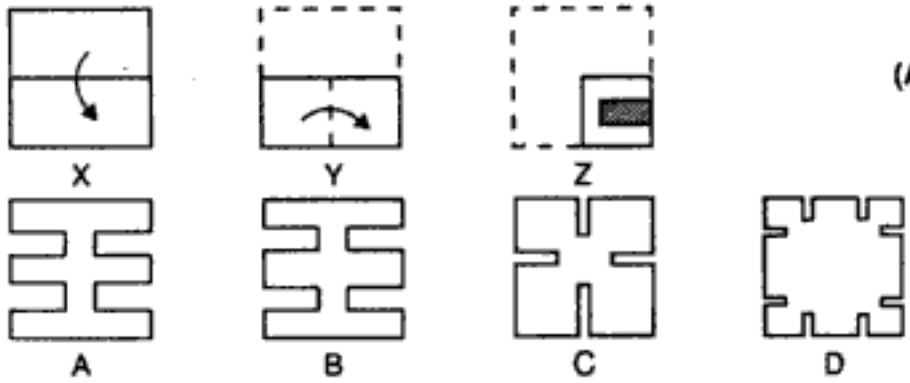
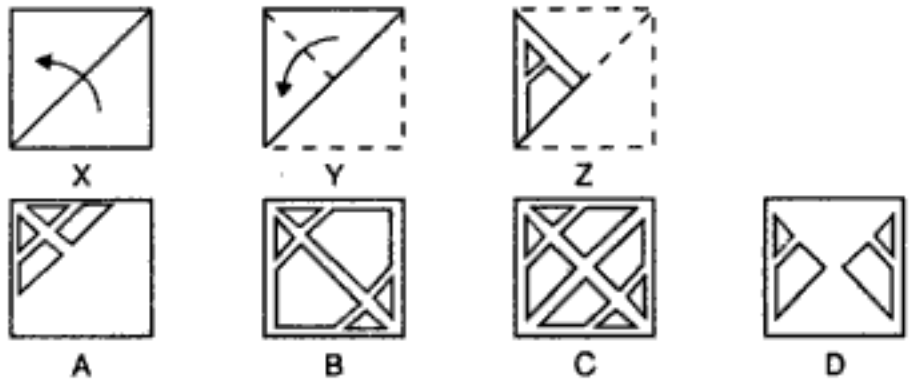


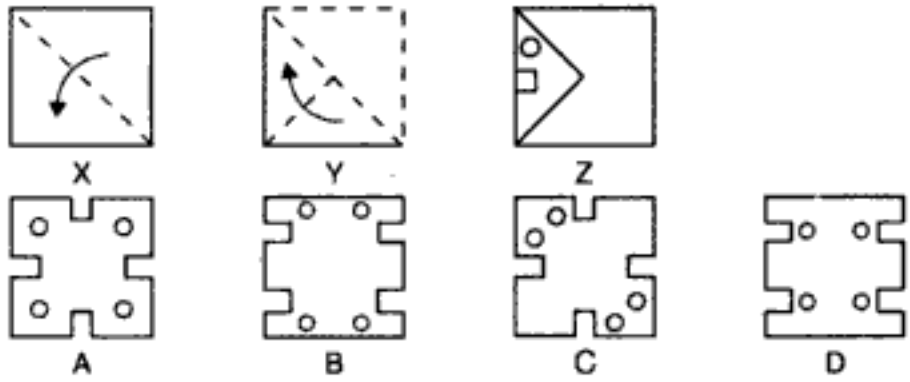
9. **(Assistant Grade, 1993)**



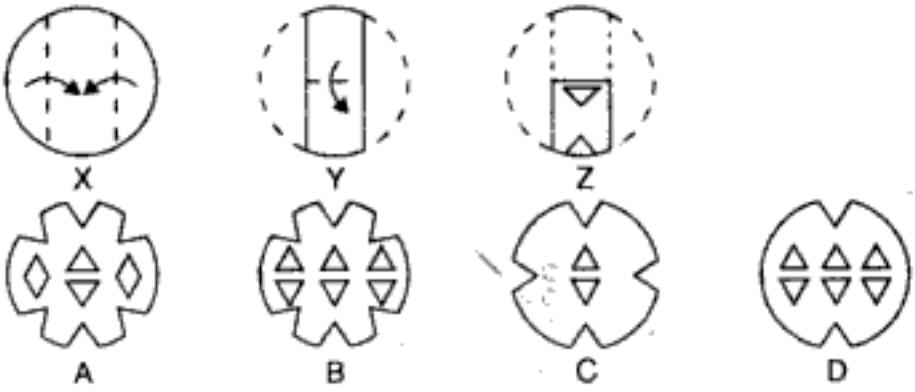
10.



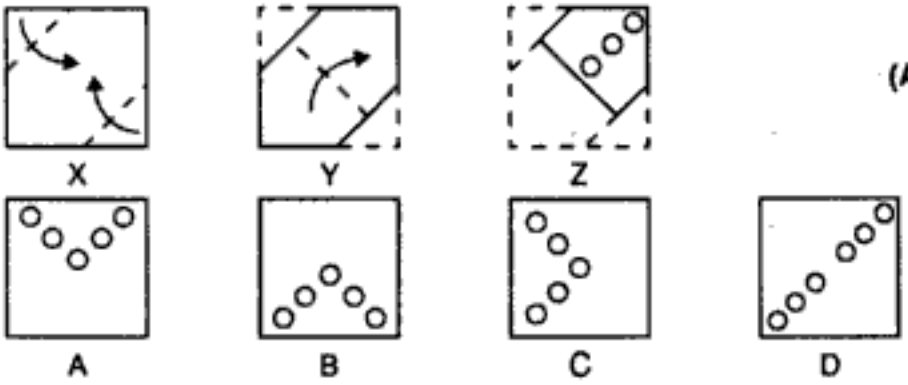
11. **(S.S.C. 1993)**



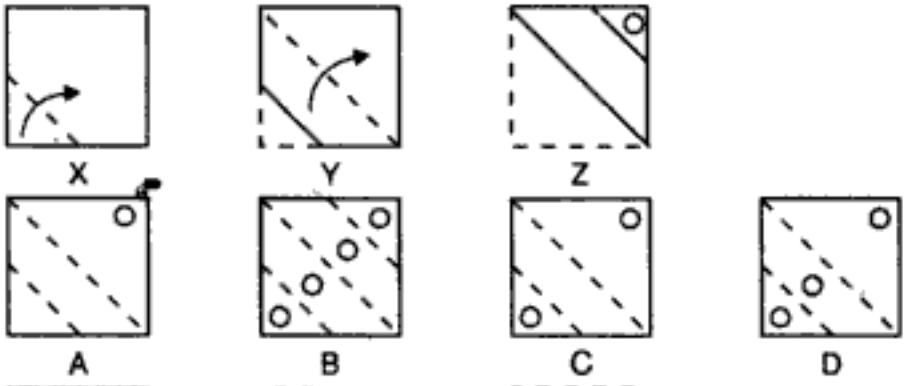
12.



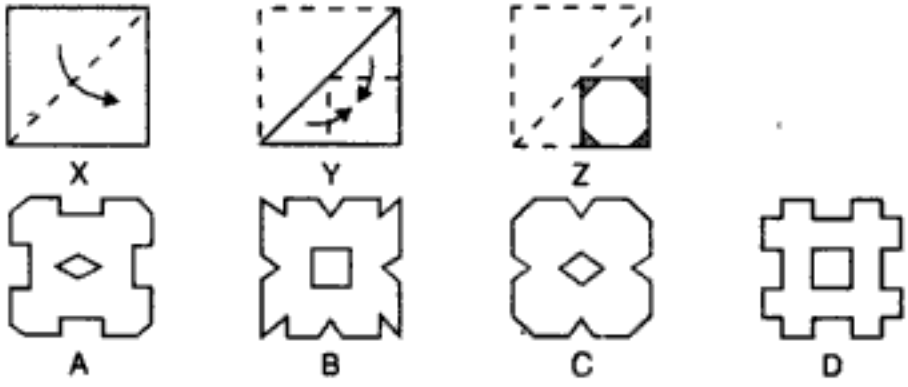
13. **(Assistant Grade, 1994)**



14.



15. **(C.B.I. 1995)**



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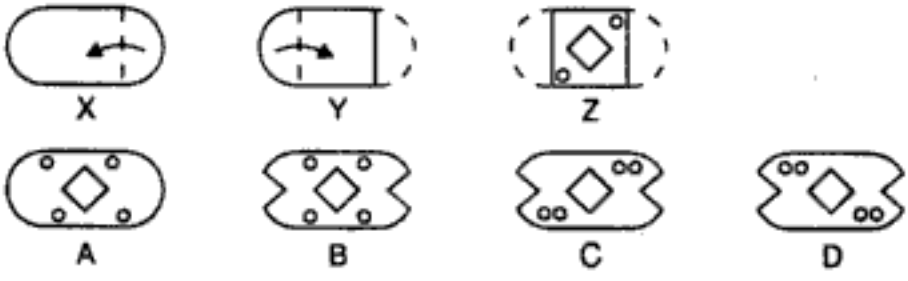
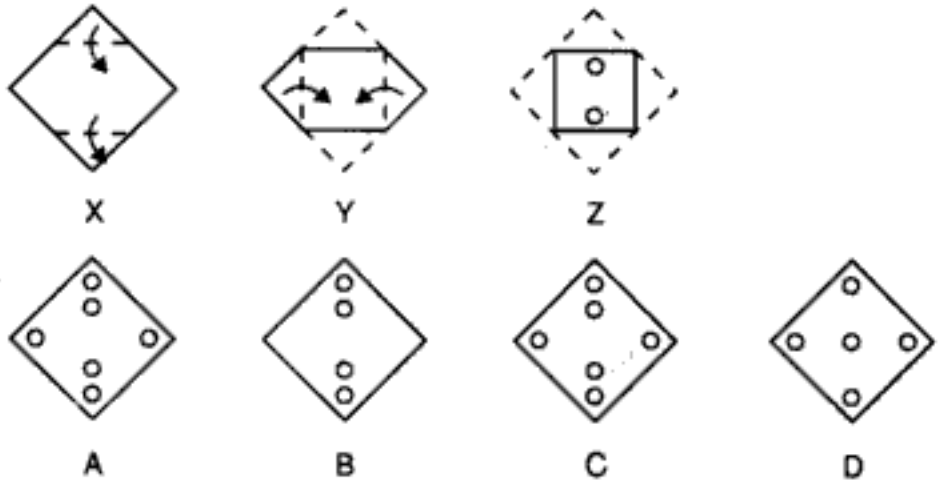
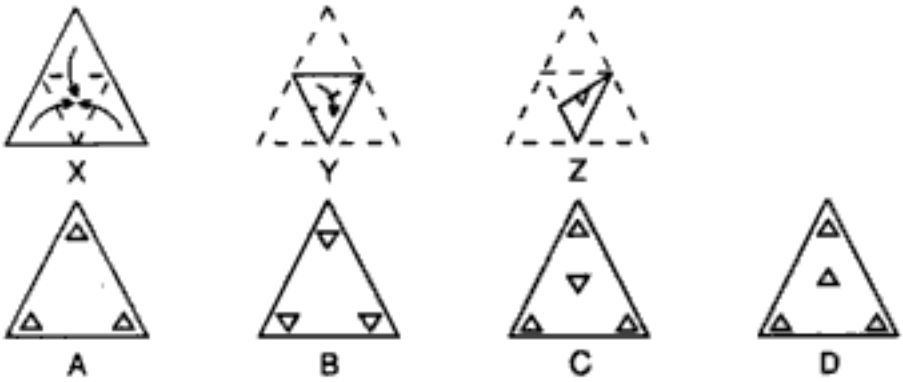


17.



18.



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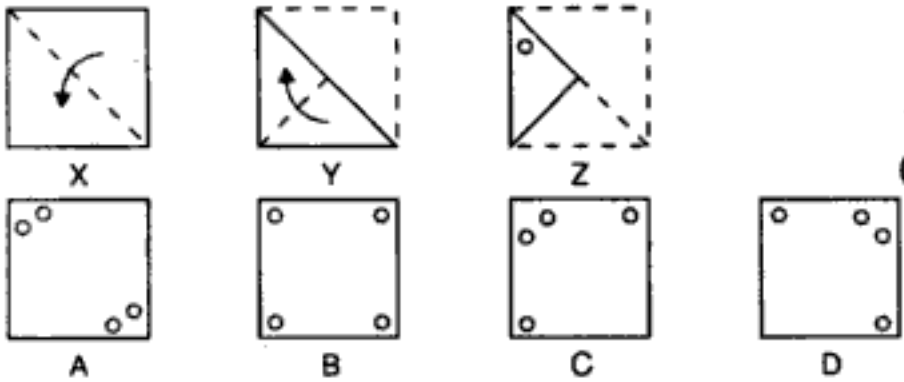
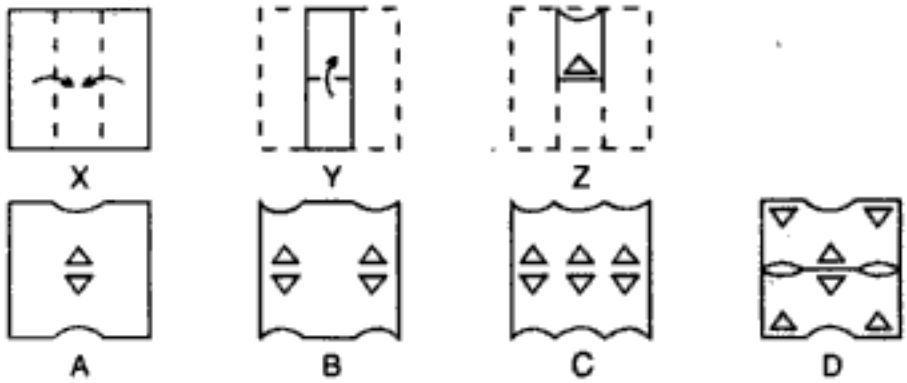
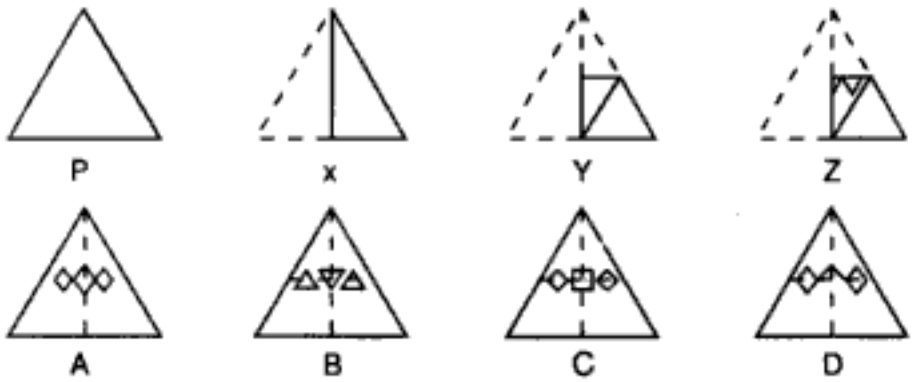


(Auditor's Exam, 1991)

20.

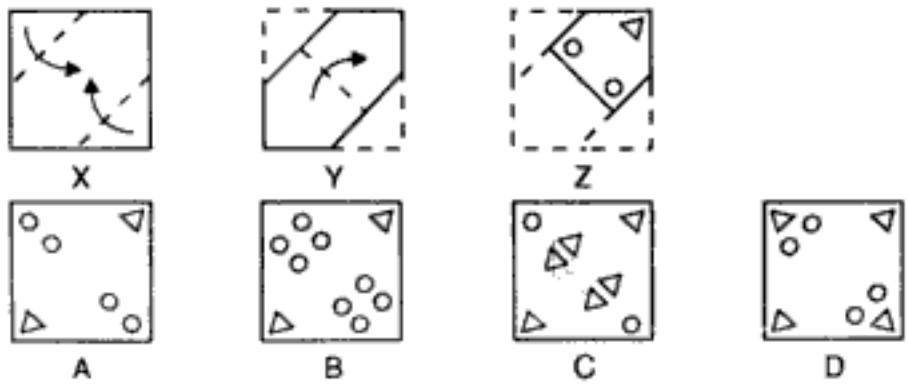


21.

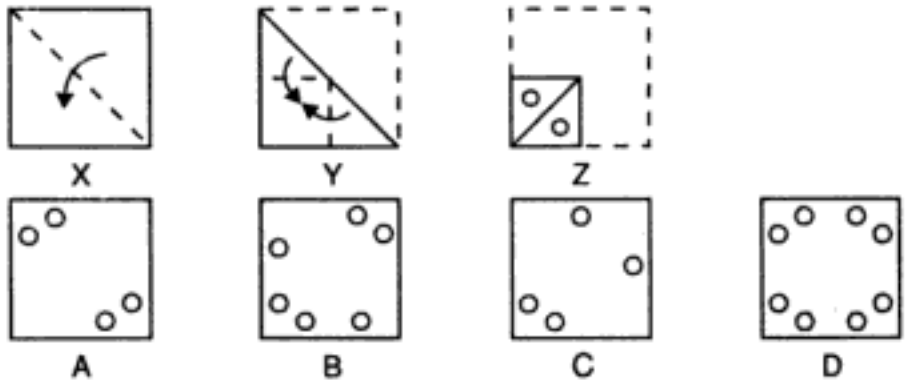


(U.D.C. 1991)

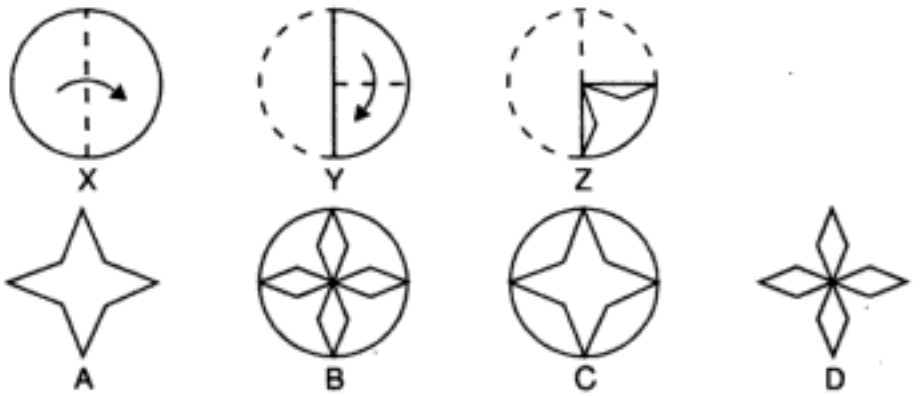
22.



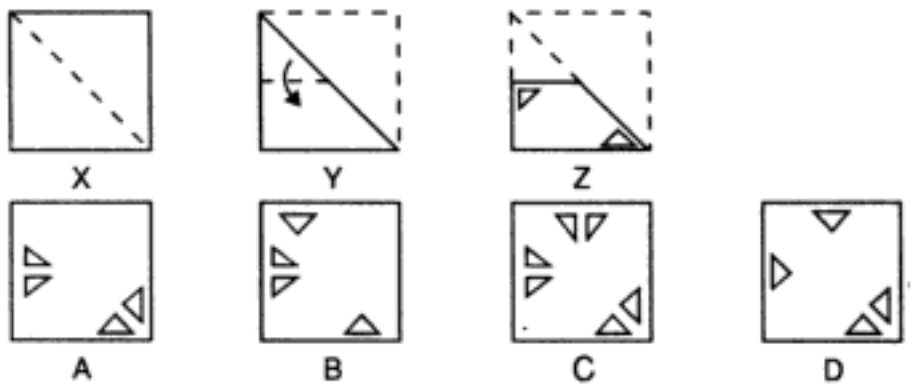
23. **(S.S.C. 1992)**



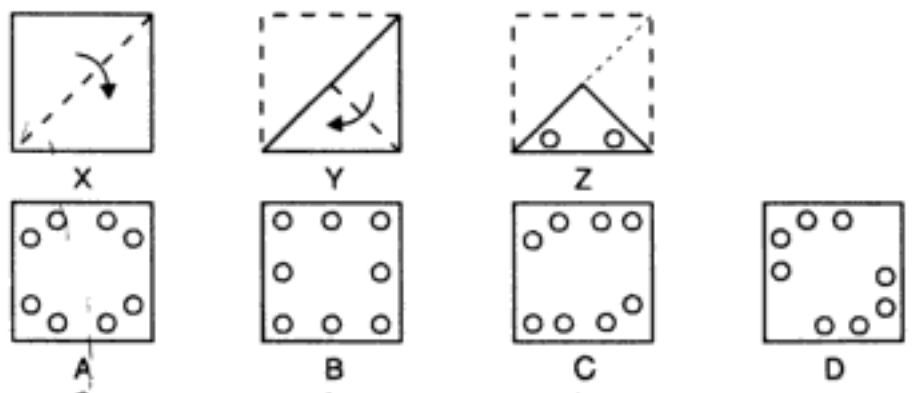
24.



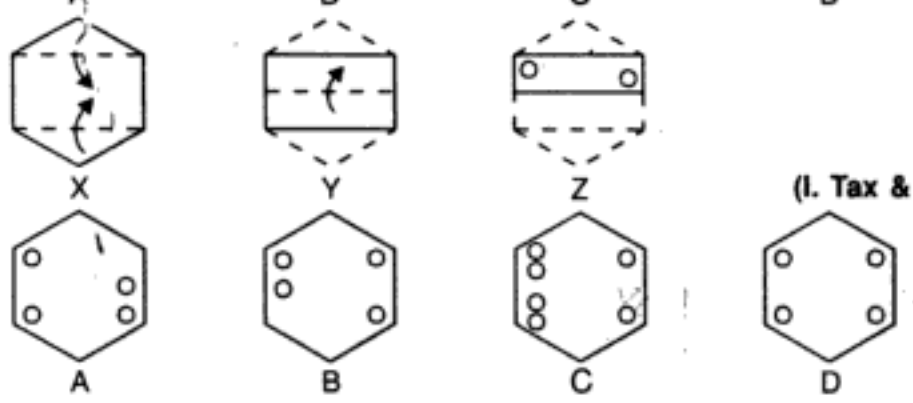
25.



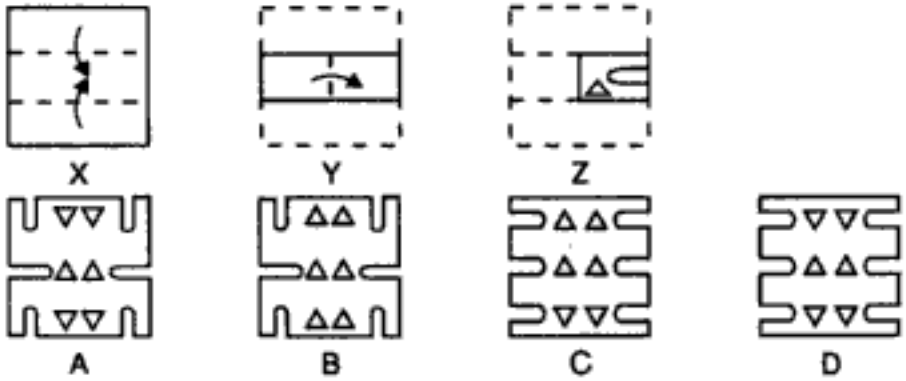
26. **(U.D.C. 1991)**



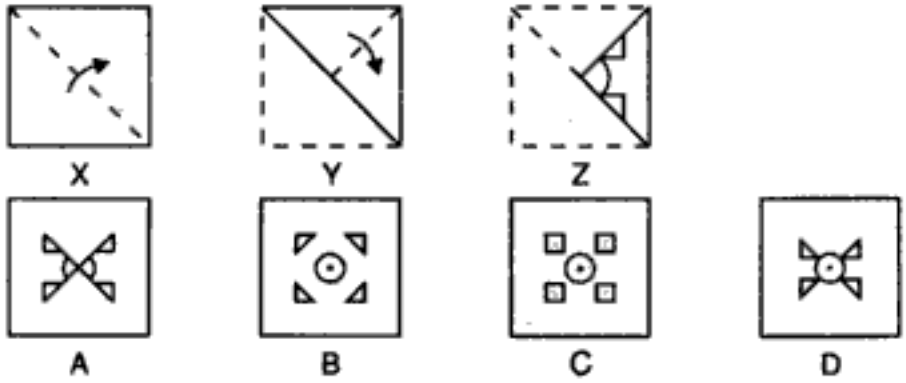
27. **(I. Tax & Central Excise, 1990)**



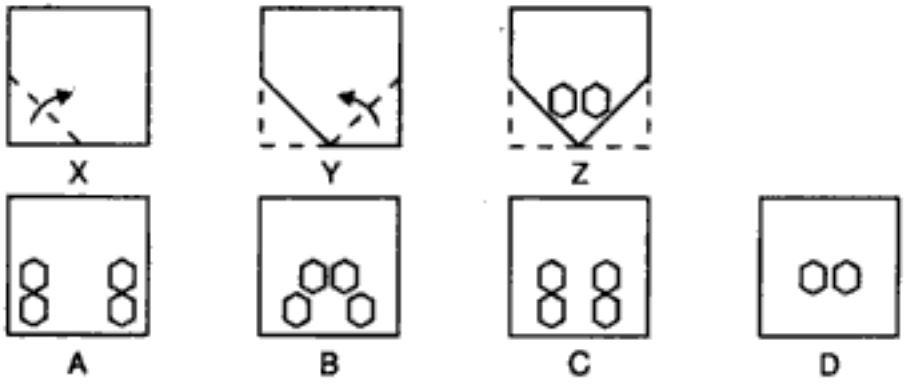
28.



29.

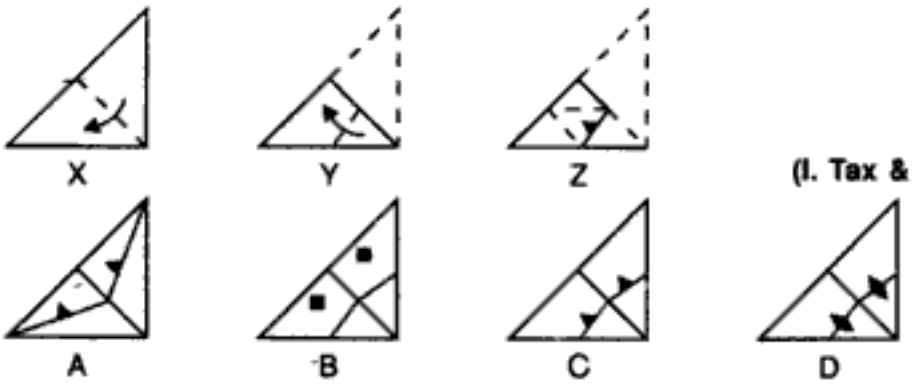


30.



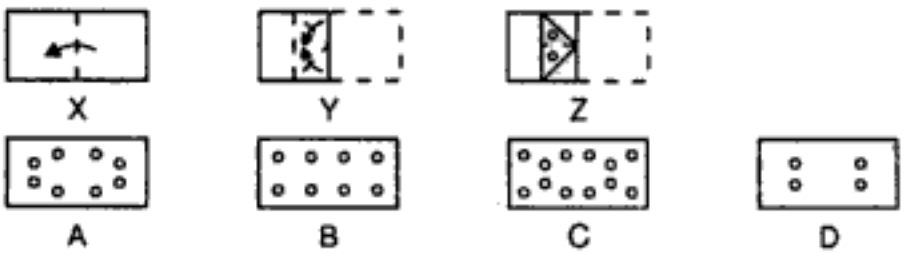
(C.B.I. 1989)

31.



(I. Tax & Central Excise, 1993)

32.



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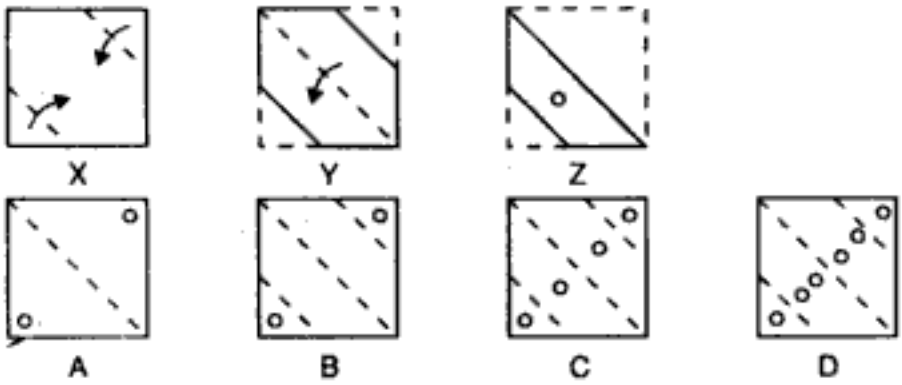
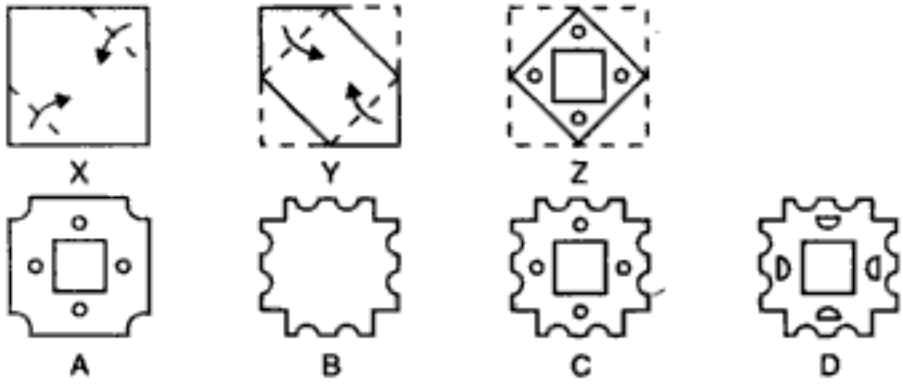
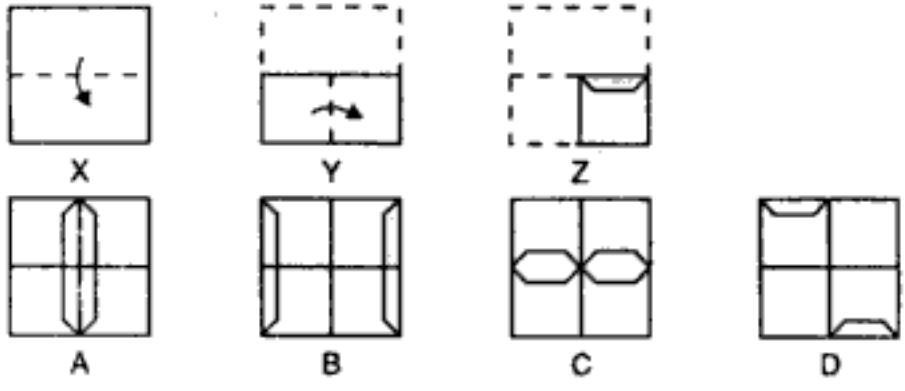
38. (S.S.C. 1995)



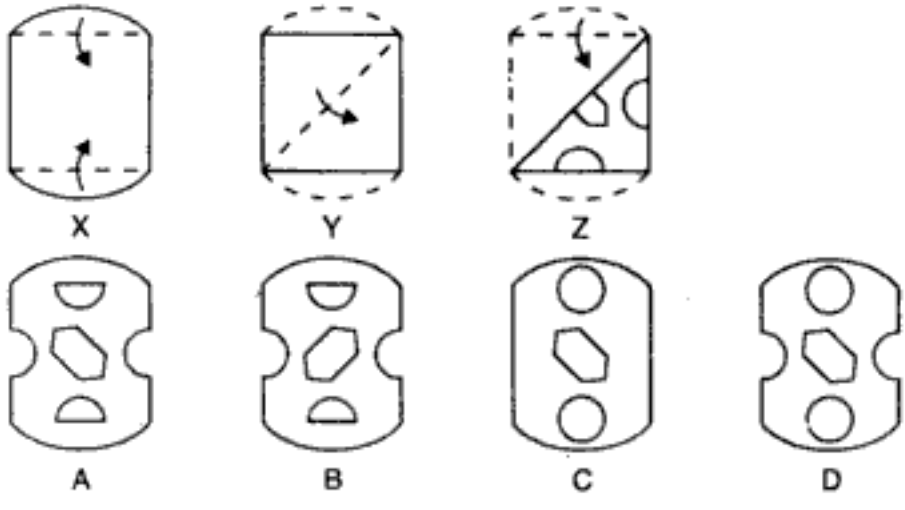
39.



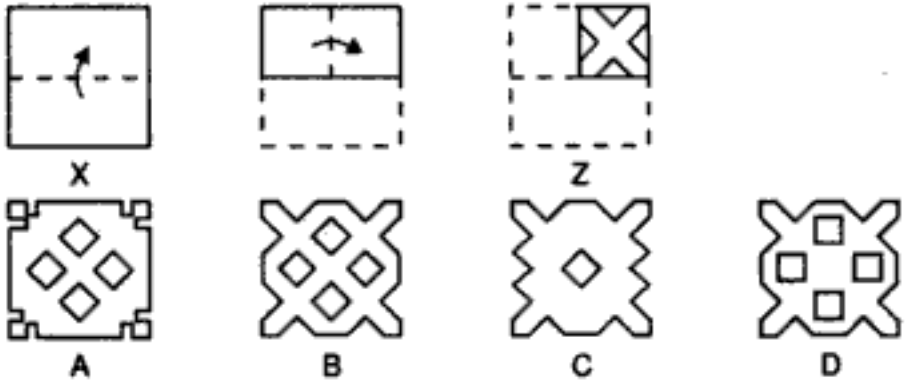
40. (Asstt. Grade, 1992)



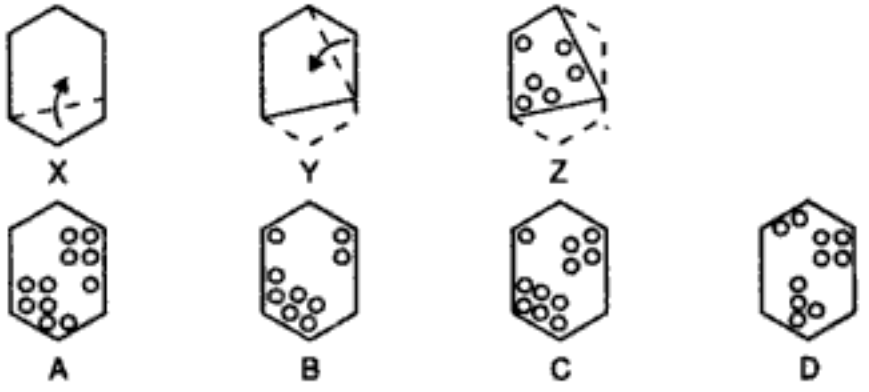
41.



42.

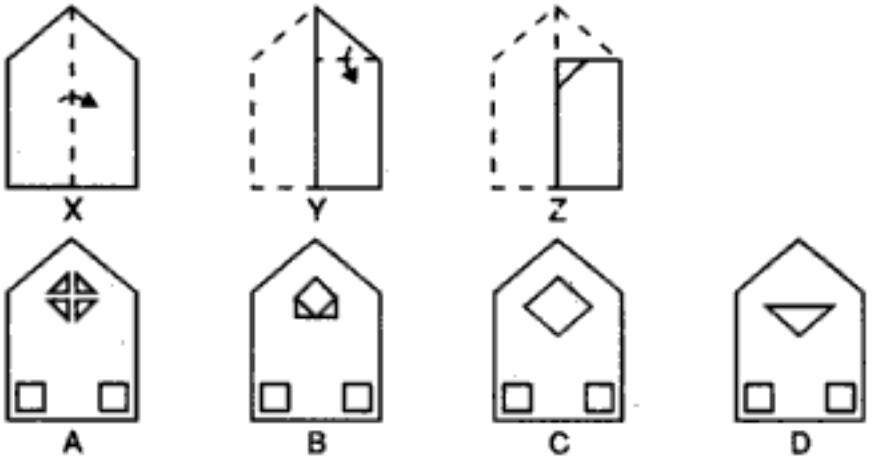


43.

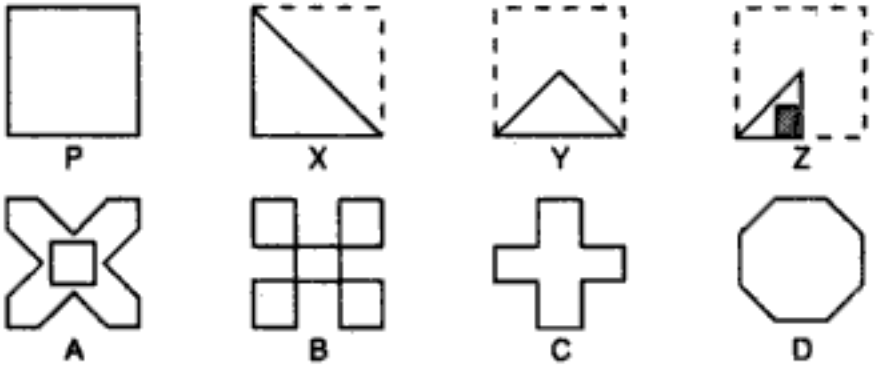


(U.D.C. 1995)

44.

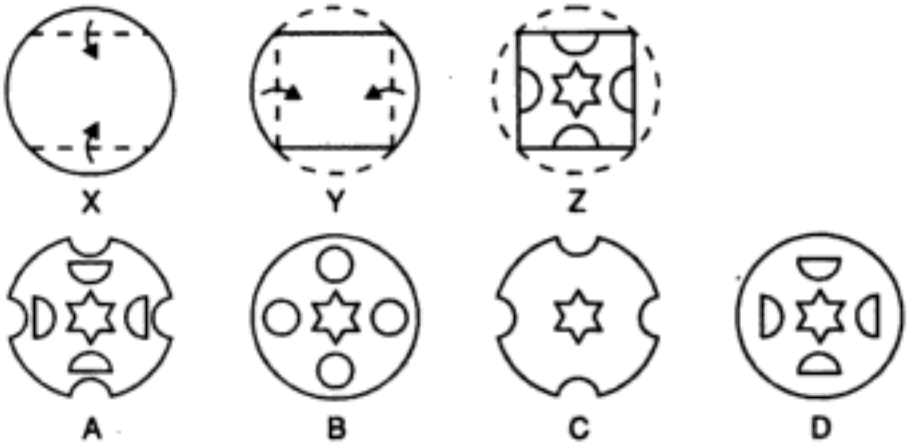


45.

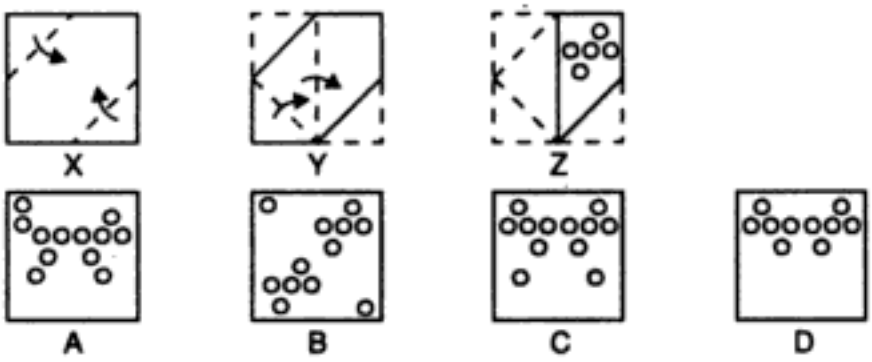


(Asstt. Grade, 1996)

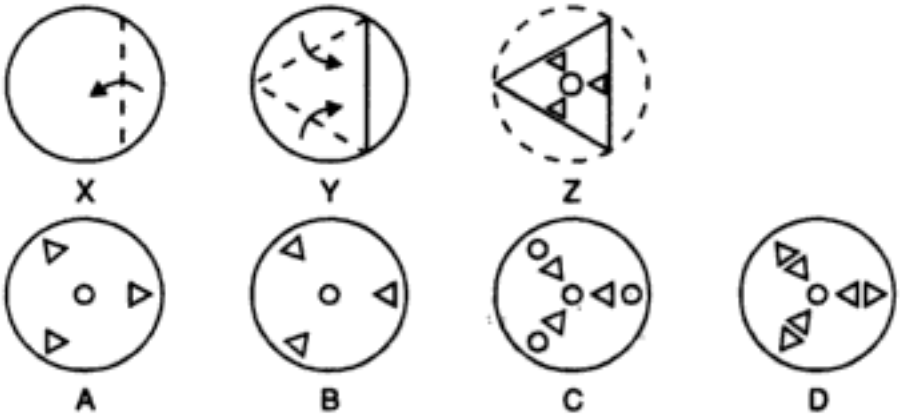
46.



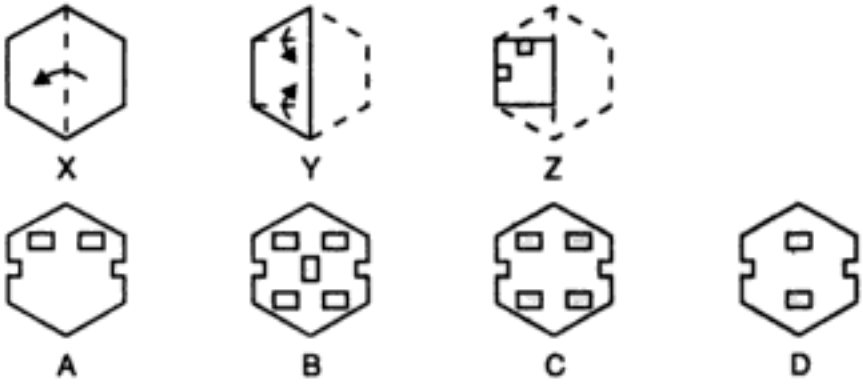
47. **(U.D.C. 1995)**



48.



49.



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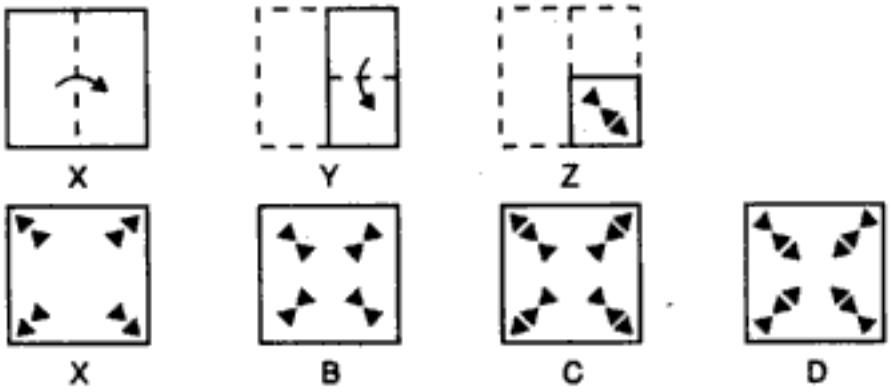
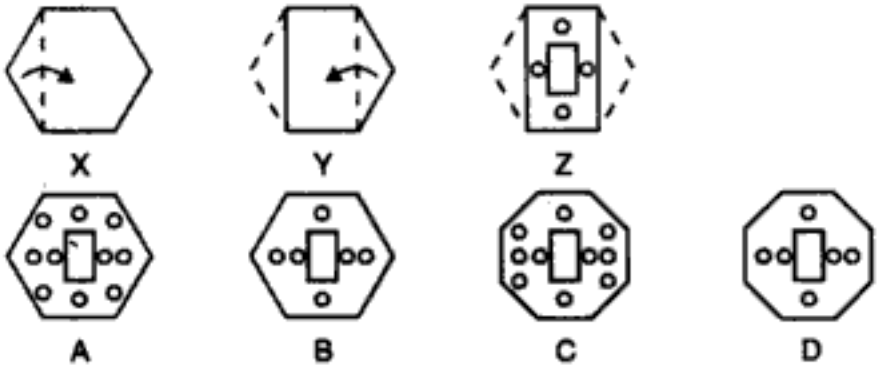
54. **(U.D.C. 1995)**

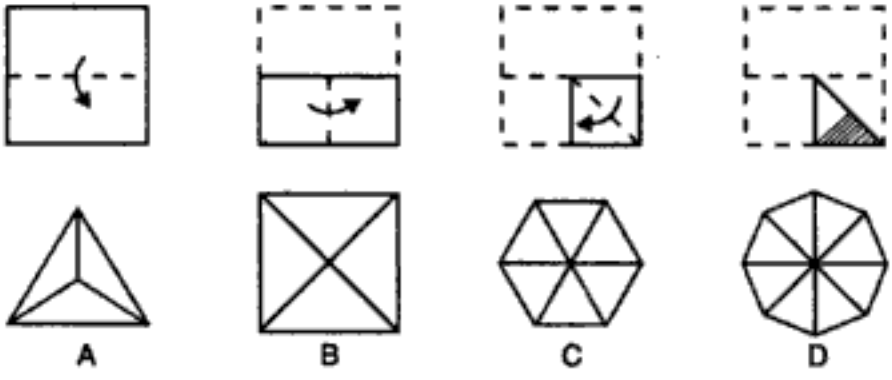


55.

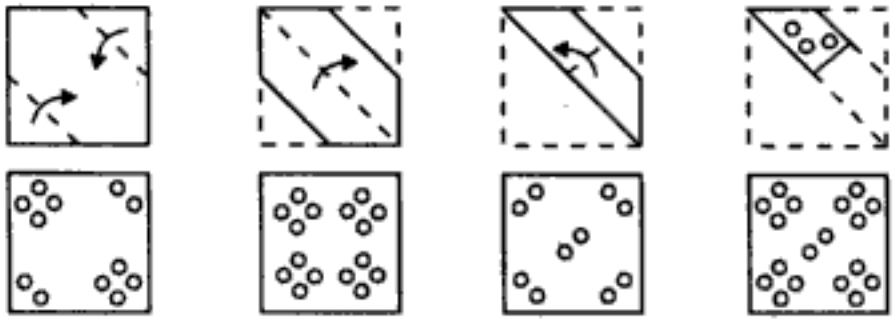


Directions : ***In questions 56 to 58, a piece of paper is folded, cut and then unfolded. One of the four alternative, figures, marked A, B, C and D, exactly resembles the unfolded paper. Select this figure.***

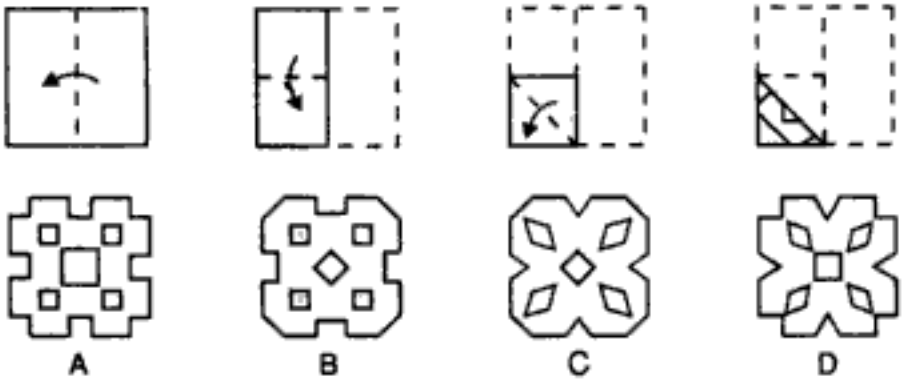
56.



57. **(U.D.C. 1995)**

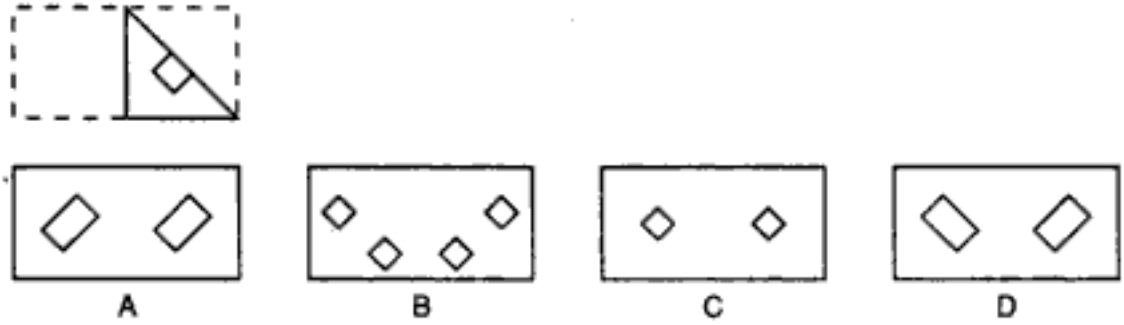


58.

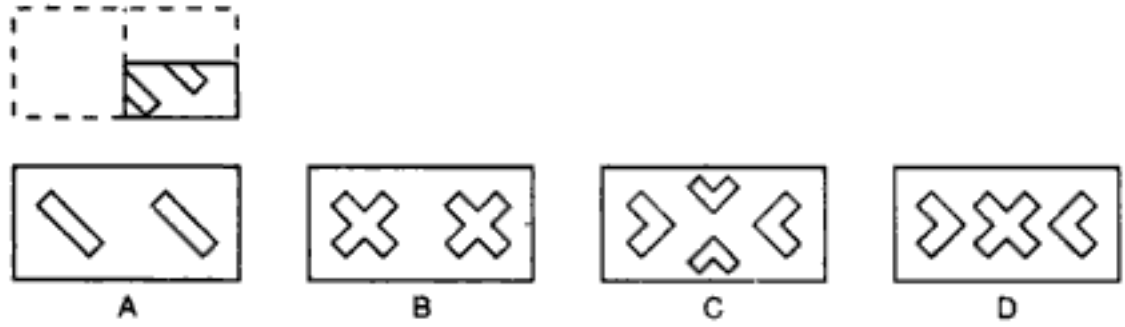


Directions : ***Each of the questions from 59 to 64 shows a sheet of paper when folded and then cut. This figure is followed by four alternatives figures, one of which resembles the sheet when unfolded and has to be selected.***

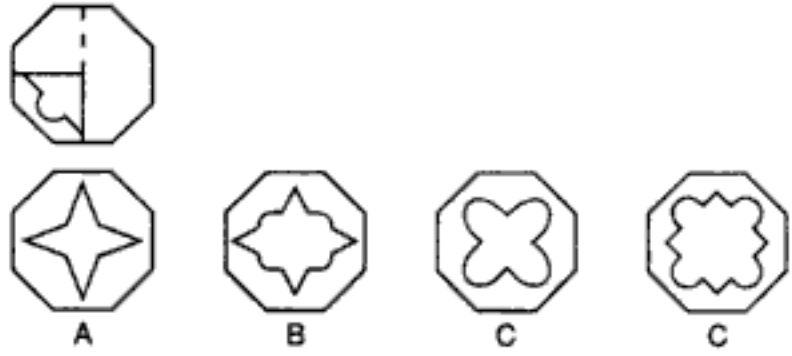
59.



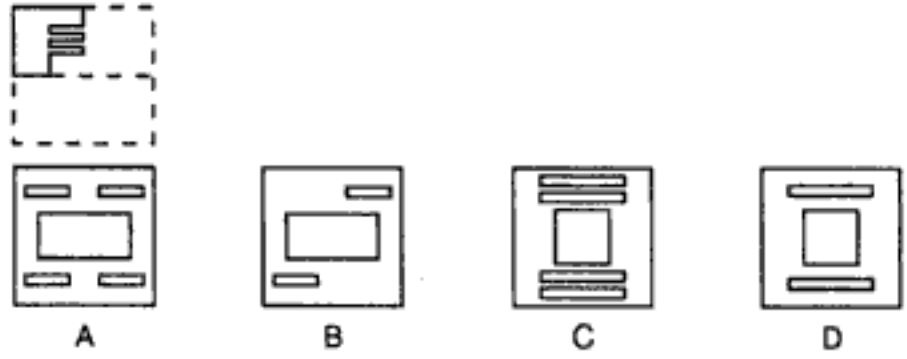
60.



61.



62.



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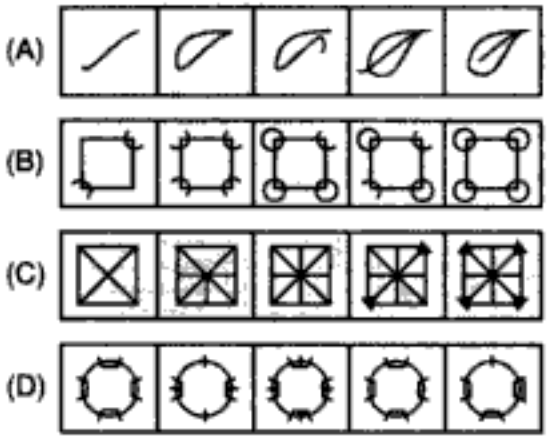
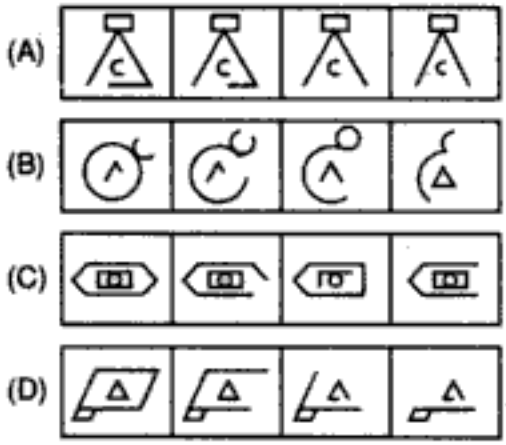
9. Rule : *The series becomes complex as it proceeds.*

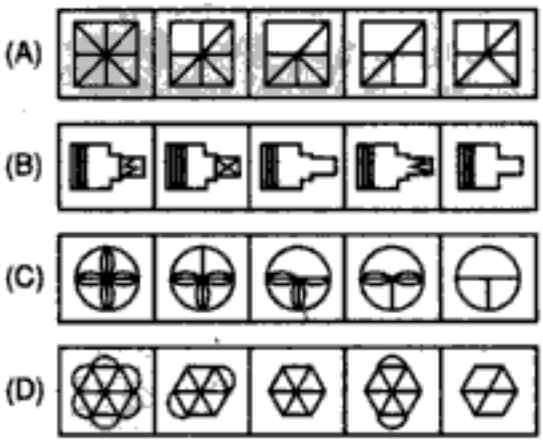


10. Rule : *Closed figures become more and more open and open figures more and more closed.*



(I. Tax & Central Excise, 1993)

11. Rule : *The series becomes simpler as it proceeds.*



(Central Excise, 1992)

12. Which of the figures (A), (B), (C) & (D) will be the answer figure if the following rule is applied to figure (X)?

Rule : *The curves should become straight lines and the straight lines should become curves.*

(X)

(Asstt. Grade, 1995)

(A) (B) (C) (D)

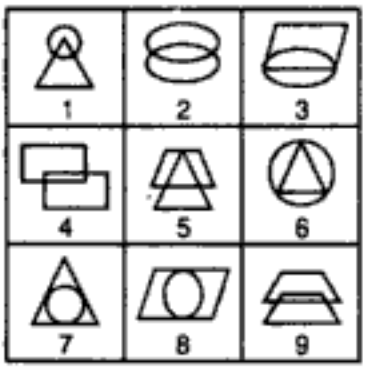
ANSWERS

1. (A)	**2.** (C)	**3.** (C)	**4.** (B)	**5.** (B)	**6.** (D)
7. (A)	**8.** (A)	**9.** (C)	**10.** (B)	**11.** (C)	**12.** (A)

13. GROUPING OF IDENTICAL FIGURES

In this type of questions, you are given a set of usually 6, 7 or 9 figures, which are numbered. The candidate is required to analyse these figures and classify them into groups consisting of figures having more or less the same properties.

Example : ***Group the following figures into three classes on the basis of identical properties.***



(*a*) 1, 5, 9; 2, 7, 8; 3, 4, 6
(*b*) 1, 5, 6; 4, 7, 8; 2, 3, 9
(*c*) 2, 4, 9; 6, 7, 8; 1, 3, 5
(*d*) 3, 7, 8; 4, 5, 9; 1, 2, 6

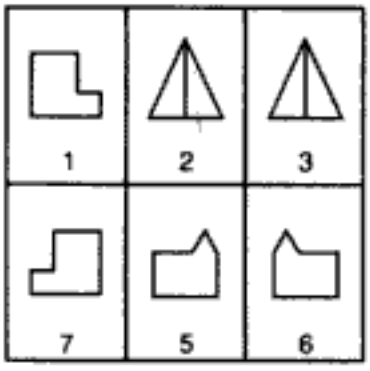
(Asstt. Grade, 1993)

Solution : Clearly, 1, 3, 5 are composed of two dissimilar figures intersecting each other.
2, 4, 9 are composed of two similar figures intersecting each other.
6, 7, 8 contain one figure enclosed inside the other.
Thus, the given nine figures may be divided into three pairs : (1, 3, 5), (2, 4, 9), (6, 7, 8).
Hence, the answer is (c).

EXERCISE 13

Directions : ***In each of the following questions, group the given figures into three classes using each figure only once.***

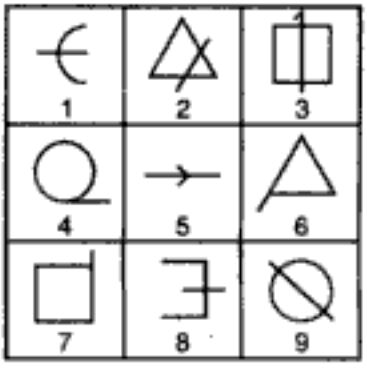
1.



(*a*) 1, 4; 2, 3; 5, 6
(*b*) 1, 5; 2, 6; 4, 3
(*c*) 1, 6; 2, 3; 4, 5
(*d*) 1, 2; 3, 6; 4, 4

(U.D.C. 1995)

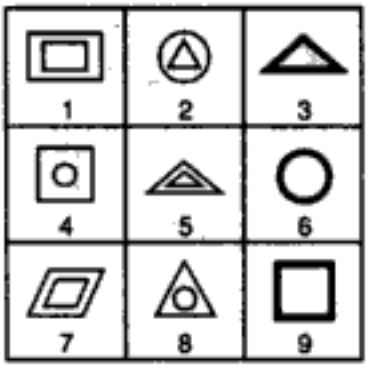
2.



(*a*) 1, 3, 9; 2, 5, 8; 4, 6, 7
(*b*) 4, 8, 9; 1, 2, 5; 3, 6, 7
(*c*) 2, 5, 9; 1, 3, 8; 2, 6, 7
(*d*) 1, 8, 9; 4, 6, 7; 2, 3, 5

(Central Excise, 1993)

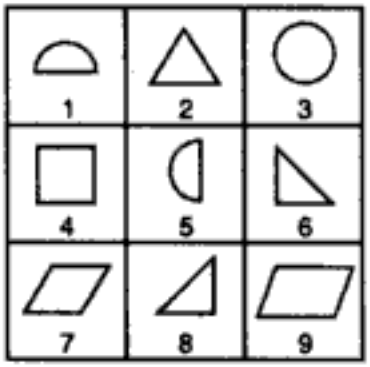
3.



(*a*) 1, 5, 7; 2, 4, 6; 3, 9, 8
(*b*) 1, 5, 7; 2, 4, 8; 3, 6, 9
(*c*) 1, 5, 7; 4, 9, 8; 2, 3, 6
(*d*) 1, 5, 7; 3, 8, 9; 2, 4, 6

(Assistant Grade, 1994)

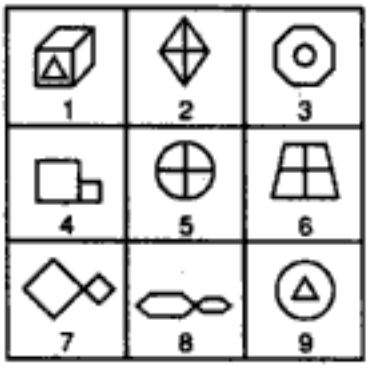
4.



(*a*) 1, 3, 5; 2, 6, 9; 4, 7, 8
(*b*) 2, 3, 4; 5, 6, 8; 9, 1, 7
(*c*) 1, 3, 5; 2, 6, 8; 4, 7, 9
(*d*) 3, 2, 4; 6, 5, 8; 7, 9, 1

(Central Excise, 1994)

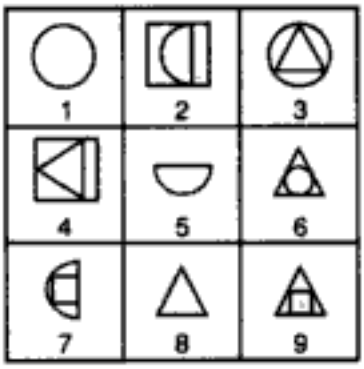
5.



(*a*) 1, 3, 9; 2, 5, 6; 4, 7, 8
(*b*) 1, 3, 9; 2, 7, 8; 4, 5, 6
(*c*) 1, 2, 4; 3, 5, 7; 6, 8, 9
(*d*) 1, 3, 6; 2, 4, 8; 5, 7, 9

(U.D.C. 1995)

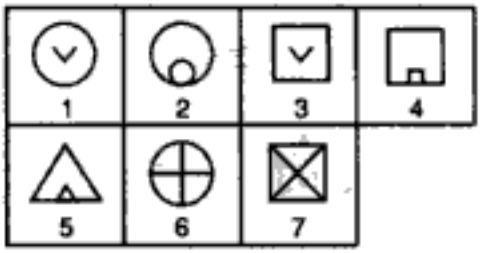
6.



(*a*) 1, 5, 8; 3, 4, 7; 2, 6, 9
(*b*) 1, 3, 6; 4, 5, 9; 2, 7, 8
(*c*) 1, 3, 6; 2, 5, 7; 4, 8, 9
(*d*) 6, 7, 8; 1, 3, 7; 2, 4, 9

(I. Tax & Central Excise, 1995)

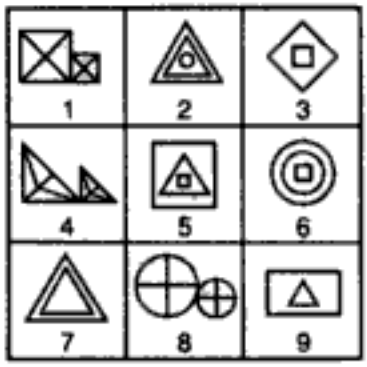
7.



(*a*) 1, 2, 6; 3, 4, 7; 5
(*b*) 1, 3; 2, 6; 4, 5, 7
(*c*) 1, 2, 6, 7; 3; 4, 5
(*d*) 1, 3; 2, 4, 5; 6, 7

(Asstt. Grade, 1994)

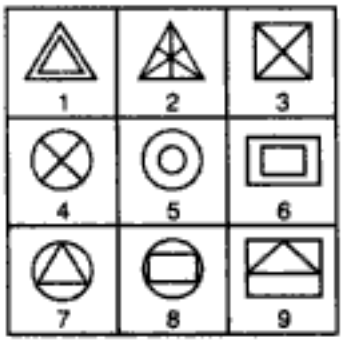
8.



(*a*) 1, 3, 7; 2, 4, 6; 5, 8, 9
(*b*) 1, 4, 6; 2, 5, 7; 3, 8, 9
(*c*) 1, 4, 8; 2, 5, 6; 3, 7, 9
(*d*) 1, 4, 8; 2, 7, 9; 3, 5, 6

(U.D.C. 1995)

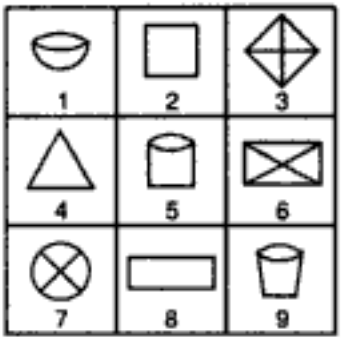
9.



(*a*) 1, 2, 3; 4, 5, 8; 6, 7, 9
(*b*) 1, 5, 6; 2, 3, 4; 7, 8, 9
(*c*) 1, 3, 5; 2, 4, 8; 6, 7, 9
(*d*) 1, 4, 7; 2, 5, 8; 3, 6, 9

(Assistant Grade, 1993)

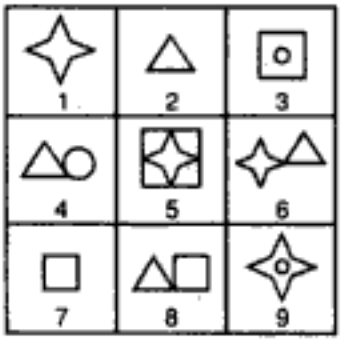
10.



(*a*) 1, 5, 9; 3, 6, 7; 2, 4, 8
(*b*) 2, 3, 6; 4, 8, 9; 1, 5, 7
(*c*) 3, 6, 8; 2, 4, 9; 1, 5, 7
(*d*) 2, 5, 8; 1, 7, 9; 3, 4, 6

(I. Tax & Central Excise, 1993)

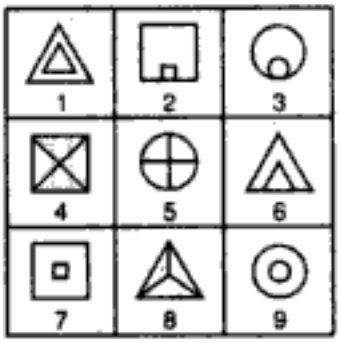
11.



(*a*) 3, 4, 9; 5, 7, 8; 1, 2, 6
(*b*) 1, 5, 6; 2, 4, 8; 3, 7, 9
(*c*) 4, 6, 8; 3, 5, 7; 1, 2, 9
(*d*) 1, 2; 7; 3, 5, 9; 4, 6, 8

(Assistant Grade, 1994)

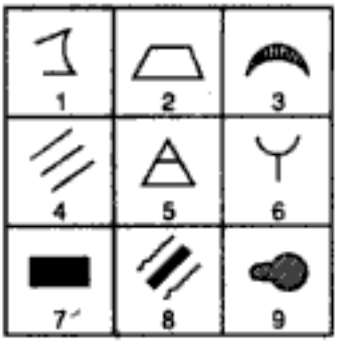
12.



(*a*) 1, 7, 9; 2, 3, 6; 4, 5, 8
(*b*) 1, 2, 9; 3, 4, 6; 5, 7, 8
(*c*) 1, 6, 8; 2, 4, 7; 3, 5, 9
(*d*) 1, 7, 8; 2, 9, 3; 6, 4, 5

(I. Tax & Central Excise, 1994)

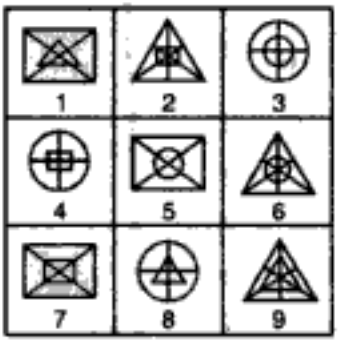
13.



(*a*) 1, 3, 6; 4, 5, 8; 2, 7, 9
(*b*) 2, 3, 9; 4, 5, 8; 1, 6, 7
(*c*) 1, 6, 8; 3, 7, 9; 2, 4, 5
(*d*) 3, 8, 9; 1, 2, 7; 4, 5, 6

(Asstt. Grade, 1994)

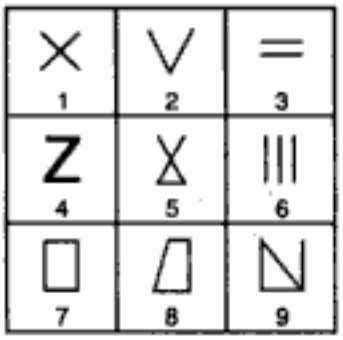
14.



(*a*) 2, 4, 7; 1, 8, 9; 3, 5, 6
(*b*) 2, 6, 9; 1, 5, 7; 3, 4, 8
(*c*) 2, 6, 7; 1, 5, 8; 3, 4, 9
(*d*) 2, 8, 7; 1, 5, 9; 3, 4, 6

(U.D.C. 1995)

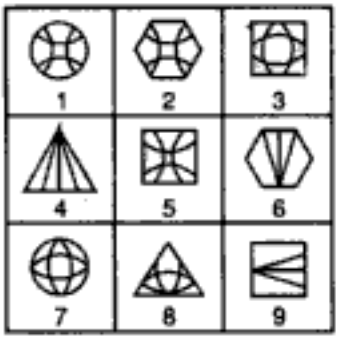
15.



(*a*) 1, 2, 3; 4, 5, 6; 7, 8, 9
(*b*) 1, 3, 5; 2, 4, 6; 7, 8, 9
(*c*) 1, 5, 9; 3, 6, 2; 4, 7, 8
(*d*) 1, 9, 7; 2, 8, 5; 3, 4, 6

(Central Excise, 1995)

16.



(*a*) 1, 2, 5; 3, 7, 8; 4, 6, 9
(*b*) 1, 7, 2; 3, 9, 6; 4, 5, 8
(*c*) 2, 3, 8; 4, 6, 9; 1, 5, 7
(*d*) 5, 6, 9; 3, 4, 1; 2, 7, 8

(Assistant Grade, 1994)

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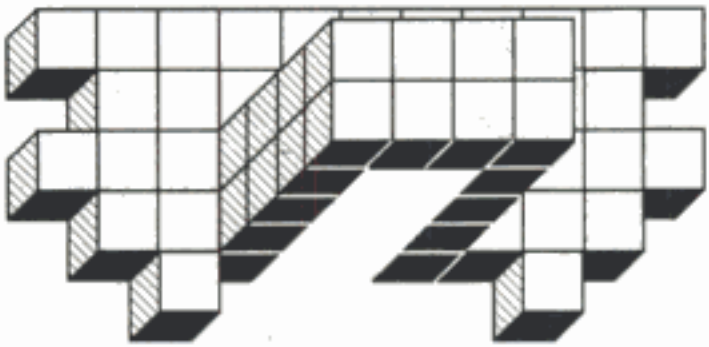
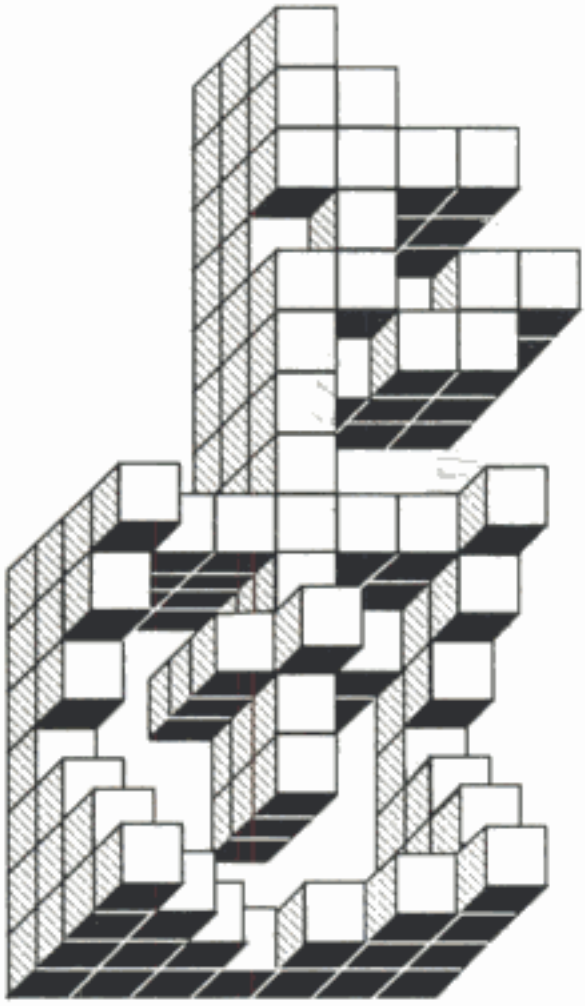
11.



(*a*) 57 (*b*) 58
(*c*) 60 (*d*) 62

12.



(*a*) 130 (*b*) 132
(*c*) 138 (*d*) 140

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1. (*d*) : There are four cubes in the middle layer which have one face painted only in blue.
2. (*b*) : There is one (central) cube in the top layer and one (central) cube in the bottom layer which have one face painted only in Green.
3. (*c*) : There are 9 cubes in each of the three layers. Thus there are 27 cubes in all.
4. (*a*) : Four (corner) cubes in the top layer and four (corner) cubes in the bottom layer have three sides painted. Hence, there are 8 such cubes.
5. (*e*) : Only one central cube in the middle layer has no faces painted at all.

EXERCISE 14B

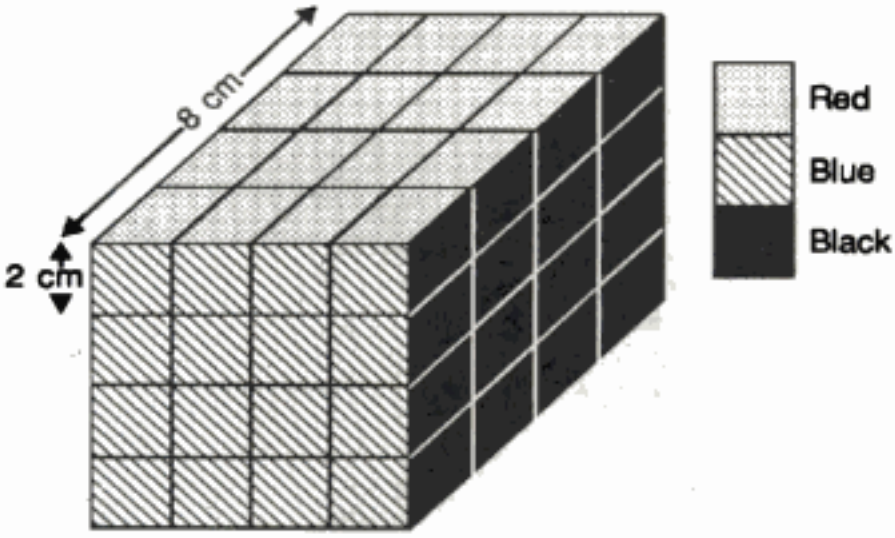
Q. 1. Directions : ***A cube painted yellow on all faces is cut into 27 small cubes of equal sizes. Answer the questions that follow :***

(1) How many cubes are painted on one face only ?
(*a*) 1 (*b*) 6 (*c*) 8 (*d*) 12

(2) How many cubes are not painted on any face ?
(*a*) 1 (*b*) 4 (*c*) 6 (*d*) 8

Q. 2. All surfaces of a cube are coloured. If a number of smaller cubes are taken out from it, each side 1/4th size of the original cube's side, indicate the number of cubes with only one side painted :
(*a*) 16 (*b*) 20 (*c*) 24 (*d*) 40

Q. 3. Directions : ***A solid cube of each side 8 cms, has been painted red, blue and black on pairs of opposite faces. It is then cut into cubical blocks of each side 2 cms.***



(1) How many cubes have no face painted ?
(*a*) 0 (*b*) 4 (*c*) 8 (*d*) 12

(2) How many cubes have only one face painted ?
(*a*) 8 (*b*) 16 (*c*) 24 (*d*) 28

(3) How many cubes have only two faces painted ?
(*a*) 8 (*b*) 16 (*c*) 20 (*d*) 24

(4) How many cubes have three faces painted ?
(*a*) 0 (*b*) 4 (*c*) 6 (*d*) 8

(5) How many cubes have three faces painted with different colours ?
(*a*) 0 (*b*) 4 (*c*) 8 (*d*) 12

(6) How many cubes have two faces painted red and black and all other faces unpainted ?

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(a) 4 (b) 8 (c) 16 (d) 24

(5) How many cubes have one face green and one of the adjacent faces black or red ?
(a) 8 (b) 16 (c) 24 (d) 28

Q.7. Directions : ***The six faces of a cube are coloured black, brown, green, red, white and blue, such that***

(i) Red is opposite blcak
(ii) Green is between red and black
(iii) Blue is adjacent to white
(iv) Brown is adjacent to blue
(v) Red is at the bottam.

Answer the following questions based on this information **(U.D.C. 1995)**

(1) Which colour is opposite brown ?
(a) White (b) Red (c) Green (d) Blue

(2) The four adjacent colours are
(a) Black, Blue, Brown, Red (b) Black, Blue, Brown, White
(c) Black, Blue, Red, White (d) Black, Brown, Red, White

(3) Which of the following can be deduced from (*i*) and (*v*) ?
(a) Black is on the top (b) Blue is on the top
(c) Brown is on the top (d) Brown is opposite Black

Q.8. Directions : ***A cube is painted blue on all faces is cut into 125 cubes of equal size. Now, answer the follwing questions :*** **(M.B.A. 1994)**

(1) How many cubes are not painted on any face ?
(a) 8 (b) 16 (c) 18 (d) 27 (e) 54

(2) How many cubes are painted on one face only ?
(a) 8 (b) 16 (c) 36 (d) 54 (e) None of these

Q.9. Directions : ***A cube is coloured orange on one face, pink on the opposite face, brown on one face and silver on a face adjacent to the brown face. The other two faces are left uncoloured. It is then cut into 125 smaller cubes of equal size. Now, answer the following questions based on the above statments :***

(1) How many cubes have at least one face coloured pink ?
(a) 1 (b) 9 (c) 16 (d) 25

(2) How many cubes have all the faces uncoloured ?
(a) 24 (b) 36 (c) 48 (d) 64

(3) How many cubes have at least two faces coloured ?
(a) 19 (b) 20 (c) 21 (d) 23

(4) How many cubes are coloured orange on one face and have the remaining faces uncoloured ?
(a) 8 (b) 12 (c) 14 (d) 16

(5) How many cubes one coloured silver on one face, orange or pink on another face and have four uncoloured faces ?
(a) 8 (b) 10 (c) 12 (d) 16

Q.10. Directions : ***The length of each side of a cube is 5cms. The outer border of the width of 1 cm is painted yellow on each side and the remaining space enclosed by this 1 cm. path, is painted pink. This cube is cut into 125 smaller cubes of each side 1 cm. When these smaller cubes are separated :***

(1) How many cubes have all the faces uncoloured ?
(a) 0 (b) 9 (c) 18 (d) 27

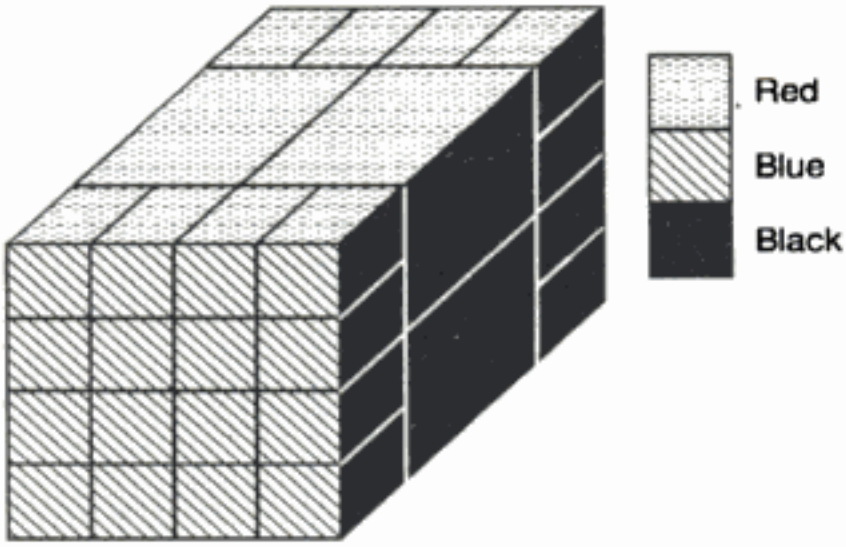
(2) How many cubes have three faces coloured yellow ?
(a) 2 (b) 4 (c) 8 (d) 10

(3) How many cubes have at least two faces coloured yellow ?
(a) 24 (b) 44 (c) 48 (d) 96

(4) How many cubes have one face pink and an adjacent face yellow ?
(*a*) 0 (*b*) 1 (*c*) 2 (*d*) 4

(5) How many cubes have at least one face coloured ?
(*a*) 27 (*b*) 48 (*c*) 98 (*d*) 121

Q.11. Directions : ***A solid cube has been painted yellow, blue and black on pairs of opposite faces. The cube is then cut into 36 smaller cubes such that 32 cubes are of the same size while 4 others are of bigger size. Also no face of any of the bigger cubes is painted blue.***



(1) How many cubes have at least one face painted blue ?
(*a*) 0 (*b*) 8 (*c*) 16 (*d*) 32

(2) How many cubes have only one face painted ?
(*a*) 0 (*b*) 4 (*c*) 8 (*d*) 12

(3) How many cubes have only two faces painted ?
(*a*) 24 (*b*) 20 (*c*) 16 (*d*) 8

(4) How many cubes have two or more faces painted ?
(*a*) 36 (*b*) 34 (*c*) 28 (*d*) 24

(5) How many cubes have only three faces painted ?
(*a*) 8 (*b*) 4 (*c*) 2 (*d*) 0

(6) How many cubes do not have any of their faces painted yellow ?
(*a*) 0 (*b*) 4 (*c*) 8 (*d*) 16

(7) How many cubes have at least one of their faces painted black ?
(*a*) 0 (*b*) 8 (*c*) 16 (*d*) 20

(8) How many cubes have at least one of their faces painted yellow or blue ?
(*a*) 36 (*b*) 32 (*c*) 16 (*d*) 0

(9) How many cubes have no face painted ?
(*a*) 8 (*b*) 4 (*c*) 1 (*d*) 0

(10) How many cubes have two faces painted yellow and black respectively ?
(*a*) 0 (*b*) 8 (*c*) 12 (*d*) 16

Q.12. Directions : ***A cube is coloured Red on two opposite faces, Blue on two adjacent faces and Yellow on the two remaining faces. It is then cut into two halves along the plane parallel to the Red faces. One piece is then cut into four equal cubes and the other one into 32 equal cubes. Now answer the following questions based on the above statement :*** **(Hotel Management, 1995)**

(1) How many cubes do not have any coloured face ?
(*a*) 0 (*b*) 2 (*c*) 4 (*d*) 8

(2) How many cubes do not have any Red face ?

(a) 8 (b) 16 (c) 20 (d) 24

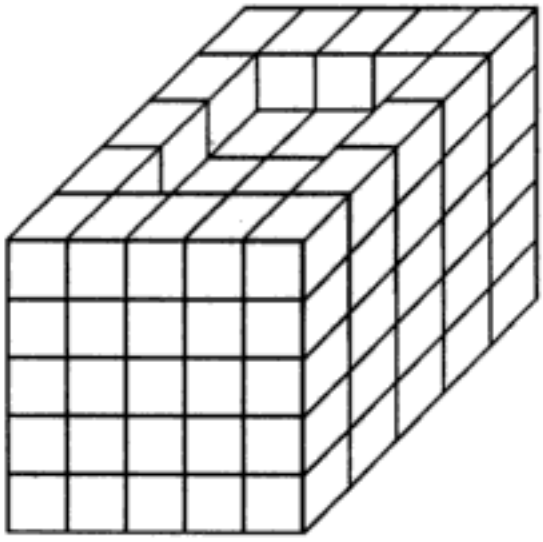
(3) How many cubes have at least two coloured faces ?
(a) 20 (b) 24 (c) 28 (d) 32

(4) How many cubes have each a Yellow face with other faces blank ?
(a) 4 (b) 14 (c) 16 (d) 17

(5) How many cubes have at least one Blue face ?
(a) 4 (b) 14 (c) 16 (d) 20

Q.13. Directions : ***A cube is painted red on two adjacent faces and on one opposite face, yellow on two opposite faces and green on the remaining face. It is then cut into 64 equal cubes.***

How many cubes have only one red coloured face ? **(S.S.C. 1993)**
(a) 4 (b) 8 (c) 12 (d) 16



Q.14. Directions : ***Some equal cubes are arranged in the form of a solid block as shown in the adjoining figure. All the visible surfaces of the block (except the bottom) are then painted.***

(1) How many cubes do not have any of the faces painted ?
(a) 27 (b) 32 (c) 36 (d) 40

(2) How many cubes have only one face painted ?
(a) 9 (b) 45 (c) 57 (d) 62

(3) How many cubes have only two faces painted ?
(a) 0 (b) 16 (c) 20 (d) 24

(4) How many cubes have only three faces painted ?
(a) 4 (b) 12 (c) 16 (d) 20

Q.15. Directions : ***A solid black is formed by arranging some cubes of equal dimensions, as shown in the adjoining figure. Whole of the block except the base has been coloured pink. Answer the questions based upon this information :***

(1) How many cubes have four faces coloured ?
(a) 0 (b) 1 (c) 2 (d) 3

(2) How many cubes have exactly three faces coloured ?
(a) 2 (b) 4 (c) 8 (d) 11

(3) How many cubes have exactly two faces coloured ?
(a) 9 (b) 11 (c) 13 (d) 15

(4) How many cubes have only one face coloured ?
(a) 22 (b) 24 (c) 25 (d) 27

(5) How many cubes are not coloured on any face ?
(*a*) 6 (*b*) 8 (*c*) 9 (*d*) 11

Q.16. The minimum number of colours required to paint all the sides of a cube that no two adjacent faces may have the same colours, is : **(M.B.A. 1994)**
(*a*) 1 (*b*) 2 (*c*) 3 (*d*) 4 (*e* 6

Q.17. Directions : ***Three adjacent faces of a cube are coloured blue. The cube is then cut (once horizontally and once vertically to form four cuboids of equal size each of these cuboids is coloured pink on all the uncoloured faces and is then cut (as before) into four cuboids of equal size.***

(1) How many cuboids have two faces coloured pink ?
(*a*) 1 (*b*) 3 (*c*) 4 (*d*) 6

(2) How many cuboids have three faces coloured pink ?
(*a*) 9 (*b*) 7 (*c*) 5 (*d*) 3

(3) How many cuboids have three faces coloured blue ?
(*a*) 4 (*b*) 2 (*c*) 1 (*d*) 0

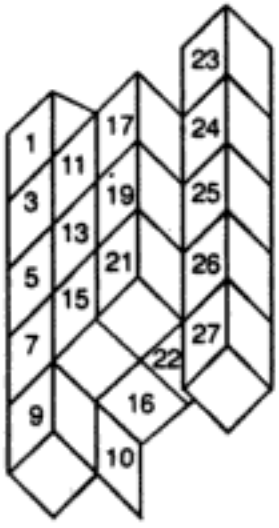
Q.18. Directions : ***In the adjoining figure there are 27 cubes numbered from 1 to 27. Answer the questions that folow :***

(1) Number of cubes which have maximum number of faces touching the other cubes is :
(*a*) 1 (*b*) 2 (*c*) 3 (*d*) 4

(2) Number of cubes which have minimum number of faces touching the other cubes is :
(*a*) 1 (*b*) 2 (*c*) 4 (*d*) 6

(3) Which of the cubes 3, 8, 20 or 27 touches the maximum number of cubes ?
(*a*) 3 (*b*) 8 (*c*) 20 (*d*) 27

(4) Which of the cubes 6, 13, 19 or 25 touches maximum number of cubes ?
(*a*) 6 (*b*) 13 (*c*) 19 (*d*) 25



(5) Which of the cubes 7, 21, 22, or 23 touches minimum number of cubes ?
(*a*) 7 (*b*) 21 (*c*) 22 (*d*) 23

(6) What cube is hidden under cube 19 ?
(*a*) 18 (*b*) 20 (*c*) 24 (*d*) 25

(7) What cube is hidden under cube 13 ?
(*a*) 5 (*b*) 14 (*c*) 15 (*d*) 19

(8) How many cubes are hidden and so could not be numbered ?
(*a*) 8 (*b*) 6 (*c*) 5 (*d*) 4

(9) How many cubes have their faces touching four other cubes ?
(*a*) 9 (*b*) 10 (*c*) 12 (*d*) 13

(10) The cubes having their five faces touching other cubes are :
(*a*) 7, 14, 20 (*b*) 13, 14, 20 (*c*) 13, 18. 22 (*d*) 13, 14, 18, 20, 22

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3. (*d*) : There are 8 cubes in layer I, 4 cubes in layer II, 4 cubes in layer III and 8 cubes in layer IV which have only two faces painted. Thus, there are $8 + 4 + 4 + 8 = 24$ such cubes.

4. (*d*) : Four corner cubes in layer I and four corner cubes in layer IV have three faces painted. Thus, there are 8 such cubes.

5. (*c*) : Four corner cubes in layer I and four corner cubes in layer IV have three faces painted with different colours. Thus, there are 8 such cubes.

6. (*b*) : There are four cubes in layer I and four cubes in layer IV which have two faces painted red and black and all other faces unpainted. Thus, there are 8 such cubes.

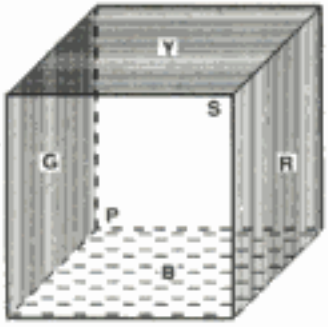
7. (*b*) : There are four cubes in layer I and four cubes in layer IV which have only one face painted red and all other faces unpainted. Thus, there are 8 such cubes.

8. (*d*) : There can be no cube which has two of its faces both painted with the same colour.

9. (*a*) : There are $4 + 4 = 8$ cubes in layer I and $4 + 4 = 8$ cubes in layer IV which have one face painted blue and one face painted red. Thus, there are 16 such cubes.

10. (*a*) : There are four layers of 16 cubes each. Thus, there are $16 \times 4 = 64$ cubes in all.

Sol. 4 : On the basis of the given details, the cube will be painted as indicated in the following figure.



Here 'Y' stands for Yellow ; 'R' for Red ; 'B' for Brown ; 'G' for Green ; 'P' for Pink and 'S' for Silver. The colour of each face is indicated at the centre of each face.

1. (*b*) : The face opposite to Red is Green.

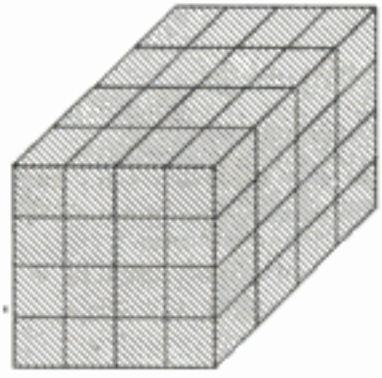
2. (*c*) : The upper face is painted yellow.

3. (*d*) : Clearly, the faces adjacent to Green are Pink, Silver, Yellow and Brown.

4. (*a*) : Clearly, the face oppoiste to silver is Pink.

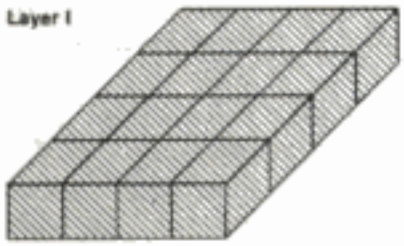
5. (*b*) : The faces adjacent to Red face are Silver, Pink, Brown and Yellow.

Sol. 5 : The given figure shows the cube coloured red on all faces, and divided into 64 smaller cubes :

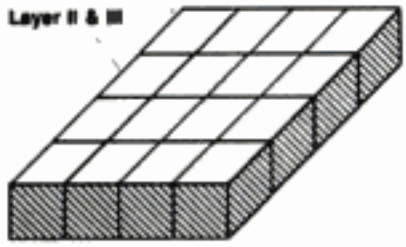


The figure may be analysed by dividing it into four horizontal layers :

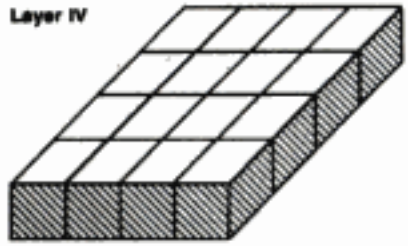
In layer I; the four central cubes have only one face coloured four cubes at the corner have three faces coloured and the remaining 8 cubes have two faces coloured.



In each of the layers II & III, the four central cubes have no face coloured, the four cubes at the corner have two faces coloured and the remaining 8 cubes have only one face coloured.



In layer IV, the four central cubes have only one face coloured, four cubes at the corner have three faces coloured and the remaining 8 cubes have two faces coloured.



1. (*c*) : Four central cubes in layer II and four central cubes in layer III have no face coloured. Thus there are 8 such cubes.

2. (*d*) : Four central cubes in layer I, 8 cubes in layer II, 8 cubes in layer III and four central cubes in layer IV have only one face coloured. Thus, there are $4 + 8 + 8 + 4 = 24$ such cubes.

3. (*a*) : None of the cubes can have its opposite faces coloured.

4. (*c*) : Four corner cubes in layer I and four corner cubes in layer IV have three faces coloured. Thus, there are 8 such cubes.

Sol. 6 : The figure analysis is the same as in the solution of **Q. 3.**

1. (*c*) : There are 8 cubes having no face painted.

2. (*c*) : There are 24 cubes having only one face painted.

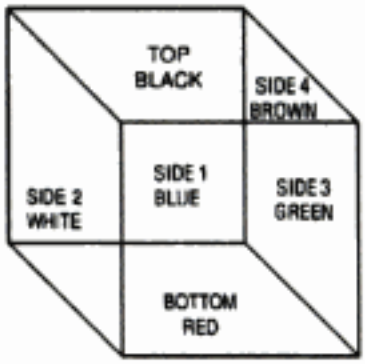
3. (*d*) : There are 24 cubes having only one face painted and 24 cubes having only two faces painted.

Thus, there are $24 + 24 = 48$ cubes having less than three faces painted.

4. (*b*) : There are 8 cubes having three faces painted.

5. (*c*) : In **Q. 3.** substitute blue colour by green colour. 8 cubes in layer I, 4 cubes in layer II, 4 cubes in layer III and 8 cubes in layer IV have one face green and one of the adjacent faces black or red. Thus there are $8 + 4 + 4 + 8 = 24$ such cubes.

Sol. 7 : On the basis of the given details, the cube will be coloured as indicated in the figure shown.

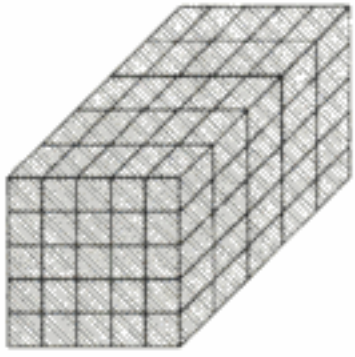


1. (*a*) : As is clear from the figure side 4 is coloured brown and opposite to it lies the side 2 which is coloured white. Therefore, white colour is opposite brown.

2. (*d*) : Black, Brown, Red, White are adjacent colours which lie respectively on top, side 4, bottom and side 2.

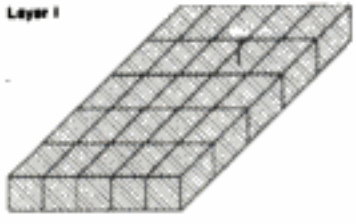
3. (*a*) : Red is opposite Black, and Red is at the bottom implies 'Black is on the top'.

Sol. 8. : The following figure shows the cubes painted blue on all face and divided into 125 smaller cubes :

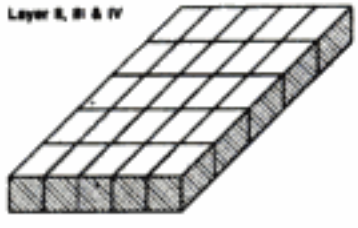


The figure may be analysed by dividing it into five horizontal layers :

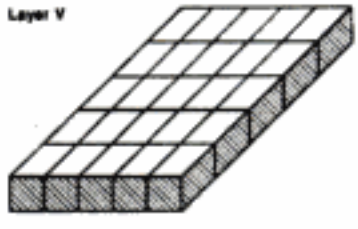
In layer I; the nine central cubes have only one face painted, four cubes at the corner have three faces painted and the remaining 12 cubes have two faces painted.



In each of the layers II, III & IV; the nine central cubes have no face painted, the four cubes at the corner have two faces painted and the remaining 12 cubes have one face painted .



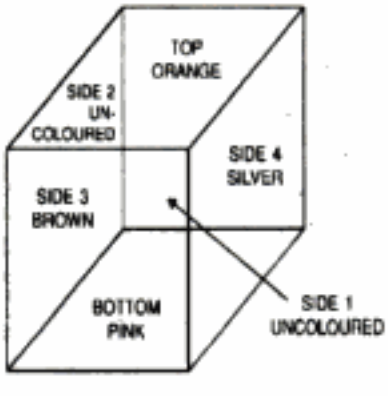
In layer V; the 9 central cubes have only one face painted, four cubes at the corner have three faces painted and the remaining 12 cubes have two faces painted.



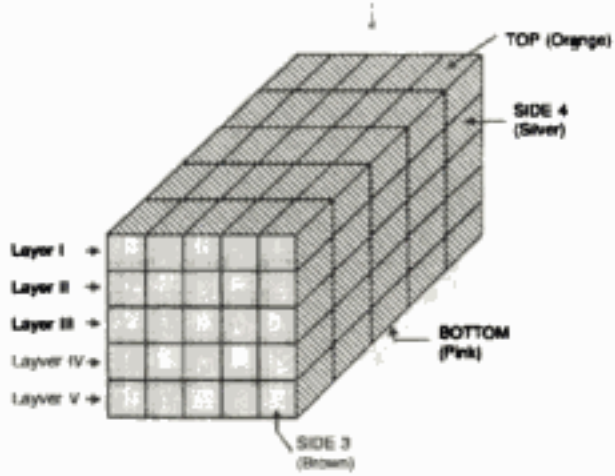
1. (*d*) : There are 9 central cubes in each of the layers II, III and IV which have no face painted. Thus, there are $9 \times 3 = 27$ such cubes.

2. (*d*) : There are 9 cubes in layer I, 12 cubes in each of the layers II, III and IV, 9 cubes in layer V which are painted on one face only. Thus, there are $9 + 12 \times 3 + 9 = 54$ such cubes.

Sol. 9 : On the basis of the given details, the cube will be coloured as indicated in the adjoining figure :



This cube is divided into 125 smaller cubes as shown in the figure below.



The figure may be analysed by assuming it to be made up of five horizontal layers :

1. (*d*) : All the 25 cubes in layer V have at least one face coloured pink.

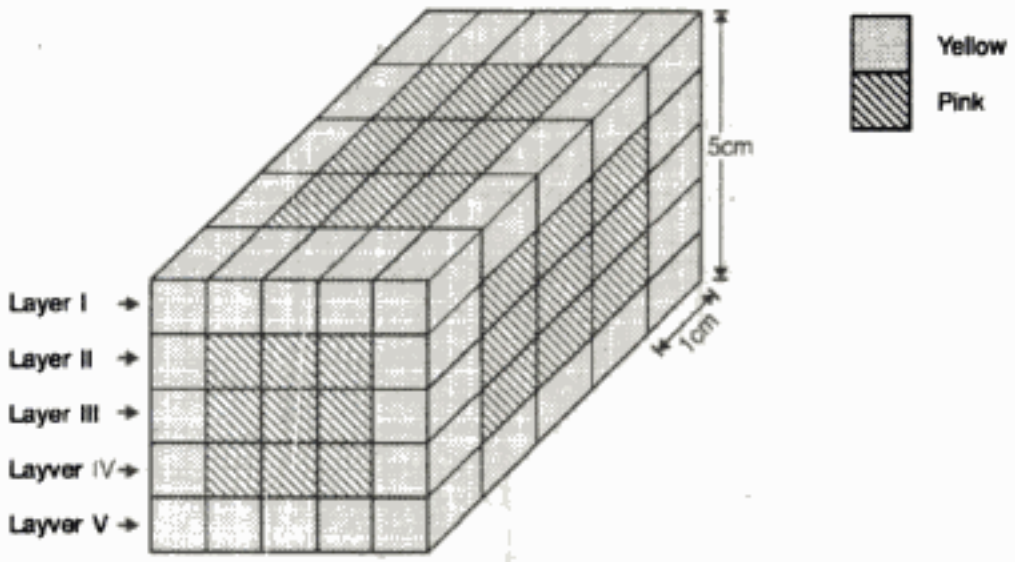
2. (*c*) : In each of the layers II, III and IV, all the cubes except those which lie along the sides 3 and 4, have all the faces uncoloured. Thus, there are 16 such cubes in each of these three layers i.e. there are $16 \times 3 = 48$ such cubes in all.

3. (*c*) : There are 8 cubes in layer I, 1 cube each in the layers II, III and IV and 8 cubes in layer V which have two faces coloured. Also, there is 1 cube in layer I, and 1 cube in layer V which have three faces coloured. Thus, there are $8 + 1 \times 3 + 8 + 1 + 1 = 21$ cubes having at least two faces coloured.

4. (*d*) : The cubes coloured orange on one face and having the remaining faces uncoloured, lie in layer I except along the sides 3 and 4. Thus, there are 16 such cubes.

5. (*a*) : There are 4 cubes in layer I along side 4 which are coloured silver on one face, orange on another face and having four uncoloured faces. Also, there, there 4 cubes in layer V along side 4 which are coloured silver on one face, pink on another face and having four uncoloured faces. Thus, there are 8 cubes of required type.

Sol. 10 : The following figure shows the cube which is painted as stated in the question, and then divided into 125 smaller cubes :



The figure may be analysed by assuming the larger cube to be made up of five horizontal layers.

1. (*d*) : 9 cubes in the centre of each of the layers II, III and IV have all the faces uncoloured. Thus, there are $9 \times 3 = 27$ such cubes.

2. (*c*) : 4 corner cubes in layer I and 4 corner cubes in layer V have three faces coloured yellow. Thus, there are 8 such cubes.

3. (*b*) : 12 cubes in layer I, 4 cubes in each of the layers II, III and IV and 12 cubes in layer V have two faces coloured yellow. 4 cubes in layer I and 4 cubes in layer V have three faces coloured yellow. Thus, there are $12 + 4 \times 3 + 12 + 4 + 4 = 44$ cubes having at least two faces coloured yellow.

4. (*a*) : There is no cube having one face pink and an adjacent face yellow.

5. (*c*) : There are 125 cubes in all and out of these 27 cubes have all faces uncoloured. Thus, there are $125 - 27 = 98$ cubes having at least one face coloured.

Sol. 11 : In the figure there are 36 cubes, 32 of which are of the same size and 4 others are of bigger size. Clearly, each side of bigger cubes is twice as large as that of smaller cubes. Also, since no face of any of the larger cubes is painted blue, so, each one of the larger cubes has one face painted red, one face painted black and all other faces unpainted.

1. (*d*) : Cubes having at least one face painted blue are those which lie along the two surfaces painted blue. Since each blue surface has 16 cubes, so, there are $16 \times 2 = 32$ such cubes.

2. (*c*) : The cubes having only one face painted are the 4 central cubes along each of the two surfaces painted blue. Thus, there are $4 \times 2 = 8$ such cubes.

3. (*b*) : Leaving the 4 central cubes on each of the blue surface and 8 cubes at the edges of the block; all the rest have two faces painted. Thus, the cubes having only two faces painted are 8 cubes on each of the blue surfaces and 4 larger cubes i.e. there are $(8 \times 2) + 4 = 20$ such cubes.

4. (*c*) : There are no cubes having more than three faces painted. 8 cubes at the edges of the block have three faces painted and as calculated above, 20 cubes have two faces painted. Thus, $8 + 20 = 28$ cubes have two or more faces painted.

5. (*a*) : The 8 cubes at the edges of the block have three faces painted.

6. (*d*) : The cubes having at least one face painted yellow are the 10 cubes along the top surface and 10 cubes along the bottom surface i.e. 20 cubes having at least one face painted yellow.

Thus, the number of cubes having none of their faces painted yellow are $36 - 20 = 16$.

7. (*d*) : The cubes having at least one of the faces painted black are the 10 cubes along each of the black surfaces. i.e. there are 20 such cubes.

8. (*a*) : The number of cubes having at least one of the faces painted yellow is 20. Also, the number of cubes having at least one of the faces painted blue is 32. (*Those lying along the two blue surfaces*). But there are 16 cubes lying along the 4 edges common to blue and yellow surfaces.

Thus, the cubes having at least one of their faces painted yellow or blue is $(20 + 32 - 16) = 36$.

9. (*d*) : The number of cubes having at least one of the faces painted are the 16 cubes, each along the surfaces painted blue and 4 larger cubes. Thus there are $(16 \times 2) + 4 = 36$ cubes having at least one of the faces painted. Since, there are 36 cubes in all, therefore, number of cubes having no face painted $= 36 - 36 = 0$.

10. (*c*) : Clearly, there are two small and one larger cubes i.e. 3 cubes along each of the edges common to yellow and black surfaces, which have one face painted yellow and one face painted black. Thus, there are $(4 \times 3) = 12$ such cubes.

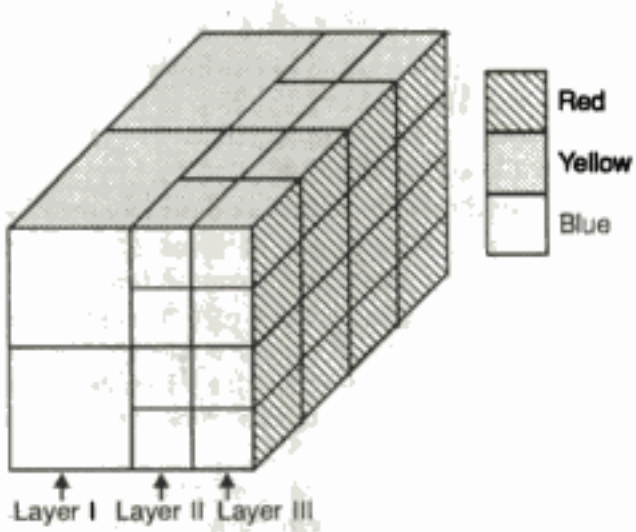
Sol. 12 : The following figure shows the cube which is coloured and cut as stated in the question :

The figure may be analysed by assuming the larger cube to be made up of three vertical layers.

1. (*c*) : Four central cubes in layer II do not have any coloured face.

2. (*b*) : The 16 cubes in layer II do not have any red face.

3. (*a*) : All the four cubes in layer I have three coloured faces, four cubes in the corner of layer II have two coloured faces and except for the four central cubes all the



remaining 12 cubes in layer III have two or three faces coloured. Thus, there are $4 + 4 + 12 = 20$ cubes having at least two coloured faces.

4. (*a*) : There are four cubes each having one yellow face and all other faces blank, these cubes lie in layer II.

5. (*d*) : All the four cubes in layer I and 8 cubes in each of the layers II and III have at least one blue face. Thus, there are $4 + 8 + 8 = 20$ such cubes.

Sol. 13 (*c*) : Fig. 1 shows the cube which is painted as stated in the question.

When this cube is divided into 64 smaller cubes, we get the figure as shown in Fig. 2.

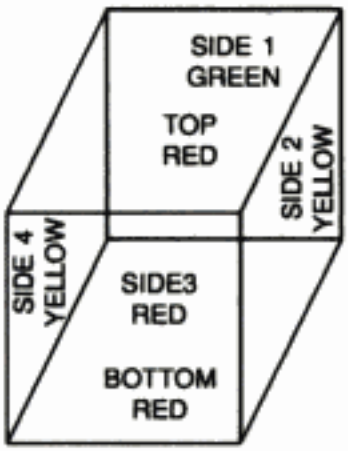


Fig 1

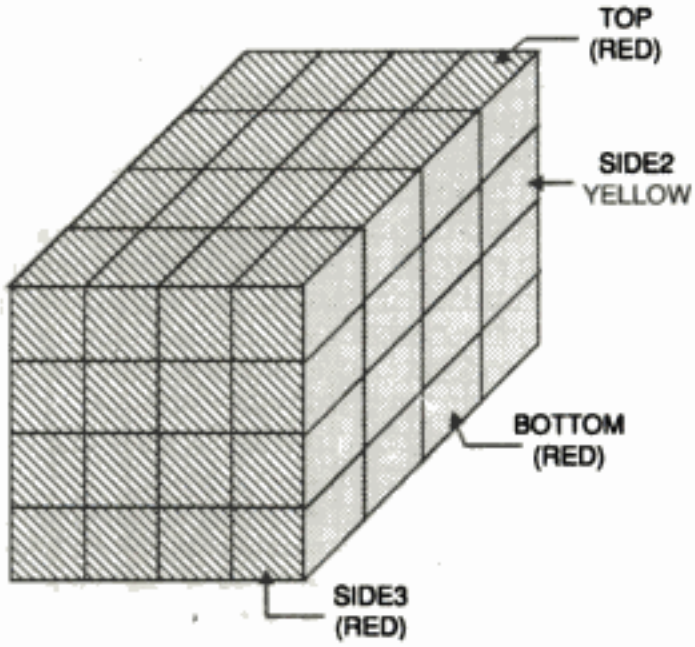


Fig 2

Clearly the cubes which have only one face red coloured and all other faces uncoloured are the four central cubes at each of the three faces of the larger cube the top, side 3 and the bottom. Thus, there are $4 \times 3 = 12$ such cubes.

Sol. 14 : In the figure there are 16 columns of 5 cubes each and 9 coloumns of 4 cubes each i.e. a total to 116 cubes.

1. (*a*) : The cubes having at least one of their faces painted are the 16 columns of 5 cubes each placed along the periphery and 9 cubes of the top.

Thus, number of cubes having at least one face painted $= (16 \times 5) + 9 = 89$.

Hence, the number of cubes having no face painted $= 116 - 89 = 27$.

2. (*c*) : The cubes having only one face painted are the 12 central cubes on each side of the block and 9 cubes of the top.

(Note here that the bottom surface of the block is not painted)

Thus, $(4 \times 12) + 9 = 57$ cubes have only one face painted.

3. (*b*) : The cubes having only two faces painted are four cubes along each of the vertical edges leaving the top one in each of these edges. Thus, there are $(4 \times 4) = 16$ such cubes.

4. (*c*) : The cubes placed on the top of all the 16 coloumns forming the boundary of the block are the onces which have exactly three faces painted. Thus, there are 16 cubes having three faces painted.

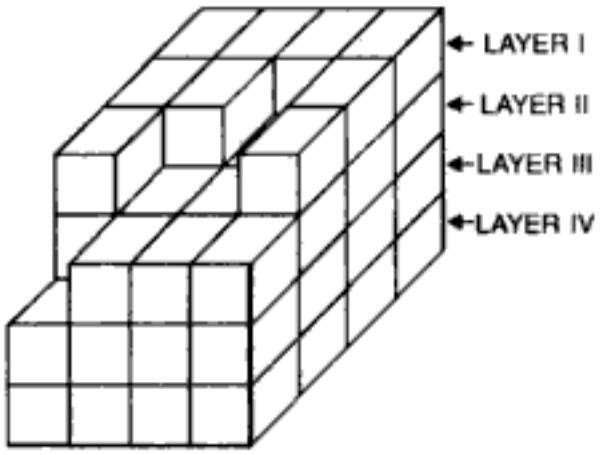
Sol. 15. : The given figure may be analysed by assuming the block to be made up of four horizontal layers, as shown in the adjoining figure :

In layer I; there are 2 cubes having four faces coloured, 5 cubes having three faces coloured, 2 cubes having two faces coloured.

In layer II; there are 2 cubes having three faces coloured, 4 cubes having two faces coloured, 8 cubes having one face coloured and 1 cube having no face coloured.

In layer III; there is 1 cube having three faces coloured, 3 cubes having two faces coloured 8 cubes having one face coloured and 4 cubes having no face coloured.

In layer IV; there are 4 cubes having two faces coloured, 8 cubes having one face coloured and 4 cubes having no face coloured.



1. (*c*) . There are 2 cubes (in layer I) having four faces coloured.

2. (*c*) : There are 5 cubes in layer I, 2 cubes in layer II & 1 cube in layer III, having three faces coloured. Thus, there are $5 + 2 + 1 = 8$ such cubes.

3. (*c*) : There are 2 cubes in layer I, 2 cubes in layer II, 3 cubes in layer III and 4 cubes in layer IV having two faces coloured Thus, there are $2 + 4 + 3 + 4 = 13$.

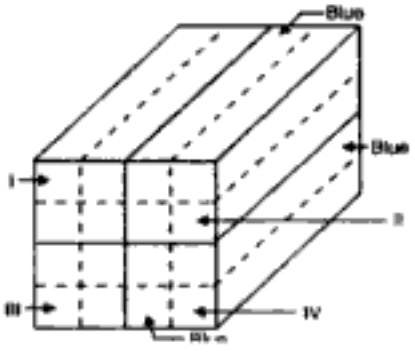
4. (*b*) : There are 8 cubes in layer II, 8 cubes in layer III and 8 cubes in layer IV having only one face coloured. Thus, there are $8 + 8 + 8 = 24$ such cubes.

5. (*c*) : There is 1 cube in layer II, 4 cubes in layer III and 4 cubes in layer IV having no face coloured. Thus, there are $1 + 4 + 4 = 9$ such cubes.

Sol. 16 (*c*) : Opposite faces can have the same colour and there are six faces in a cube.

Sol. 17. : The adjoining figure shows the cube coloured and cut into four cuboids as stated in the question :

These four cuboids are separated and coloured pink on all uncoloured faces. Each of these four cuboids is then cut into four other cuboids as shown by the dotted lines in the figure. Thus, we get 4 sets of 4 cuboids each.



In set I & IV : 2 cuboids have 2 faces blue, 2 faces pink and 2 faces uncoloured each.

2 cuboids have 1 face blue, 3 faces pink and 2 faces uncoloured each.

In set II : 2 cuboids have 2 faces blue, 2 faces pink and 2 faces uncoloured each.

1 cuboid has 3 faces blue, 1 face pink and 2 faces uncoloured each.

1 cuboid has 1 face blue, 3 faces pink and 2 faces uncoloured each.

In set III : All the four cuboids have 1 face blue, 3 faces pink and 2 faces uncoloured each.

1. (*d*) : There are 2 cuboids in set I, 2 cuboids in set II and 2 cuboids in set III having 2 faces pink in each. Thus, there are 2 + 2 + 2 = 6 such cubes.

2. (*a*) : There are 2 cuboids in set I, 1 cuboid in set II, 4 cuboids in set III and 2 cuboids in set IV having 3 faces pink each. Thus, there are 9 such cuboids.

3. (*c*) : There is only one cuboid having three faces blue. This cuboid lies in set II.

Sol. 18. : The number of each of the cubes is given along with the number of its faces touching other cubes :—

1. → 2 ; **2.** → 2 ; **3.** → 4 ; **4.** →4 ; **5.** →4 ; **6.** →4 ; **7.** →4 ; **8.** →4 ; **9.** →2 ; **10.** →2 ; **11.** →4 ; **12.** →4 ; **13.** →5 ; **14.** →5 ; **15.** →4 ; **16.** →4 ; **17.** →3 ; **18.** →4 ; **19.** →4 ; **20.** →5 ; **21.** →3 ; **22.** →4 ; **23.** →1 ; **24.** →3 ; **25.** →3 ; **26.** →3 ; **27.** →1.

1. (*a*) : The cubes having the maximum number of faces touching other cubes are those touching **5** other cubes. These are **13., 14,** and **20**. i.e. there are **3** such cubes.

2. (*b*) : The cubes having the minimum number of faces touching other cubes are those touching **1** cube only. These are **23** and **27**. i.e. there are **2** such cubes.

3. (*c*) : Only the cube **20** touches **5** other cubes i.e. maximum number of cubes.

4. (*b*) : Only the cube **13** touches **5** other cubes i.e. maximum number of cubes.

5. (*d*) : Only the cube **23** touches **1** other cube i.e. minimum number of cubes.

6. (*b*) : The number of the cube below any cube is one greater than that of the upper cube. ∴ Cube **20** lies below cube **19**.

7. (*b*) : The cube hidden below cube **13.** is cube **14.**

8. (*a*) : The cubes hidden are **2, 4, 6, 8, 12, 14, 18** and **20** which cannot be numbered since none of their faces is visible.

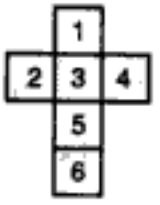
9. (*d*) : The cubes having their faces touching four other cubes are **3, 4, 5, 6, 7, 8, 11, 12, 5, 16, 18, 19** and **22** Thus, there are **13** such cubes.

10. (*b*) : Cubes **13, 14** and **20** have their faces touching five other cubes.

CONSTRUCTION OF BOXES

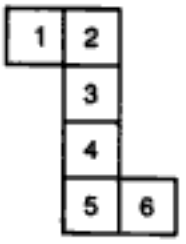
When a cube or a cuboid is unfolded, it may appear in any of the following forms :

Form 1 :



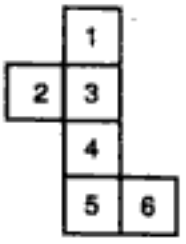
In this case : 1 lies opposite 5;
2 lies opposite 4;
3 lies opposite 6.

Form 2 :



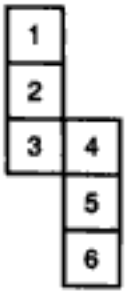
In this case : 1 lies opposite 6;
2 lies opposite 4;
3 lies opposite 5.

Form 3 :



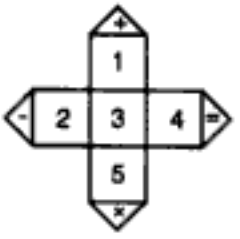
In this case : 1 lies opposite 4;
2 lies opposite 6;
3 lies opposite 5.

Form 4 :



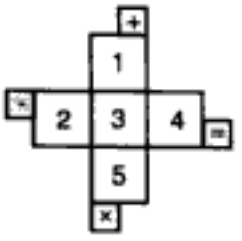
In this case : 1 lies opposite 3;
2 lies opposite 5;
4 lies opposite 6.

Form 5 :



In this case :  will be one of the faces of the cube, which lies opposite 3;
2 lies opposite 4;
1 lies opposite 5.

Form 5 :



In this case :  will be one of the faces of the cube, which lies opposite 3;
2 lies opposite 4;
1 lies opposite 5.

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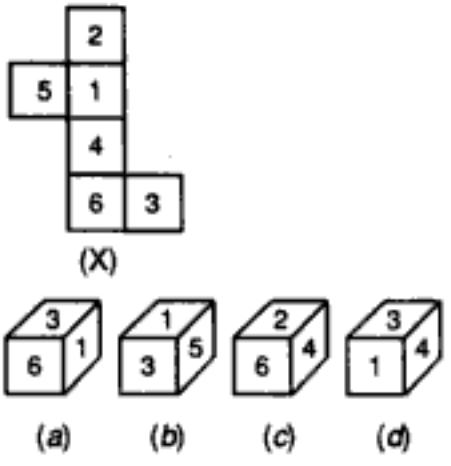
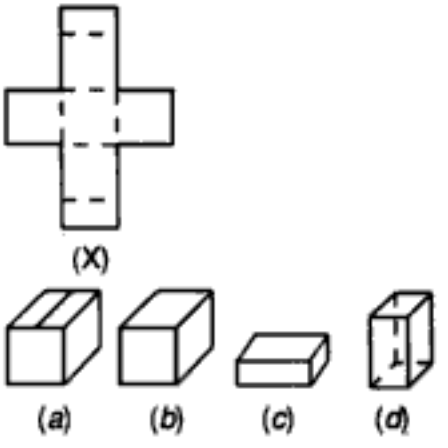
EXERCISE 14C

Directions : ***The figure (X) given on the left hand side, in each problem, is folded to form a box. Choose from amongst the alternatives (a), (b), (c) and (d), the boxes that are similar to the box formed.***

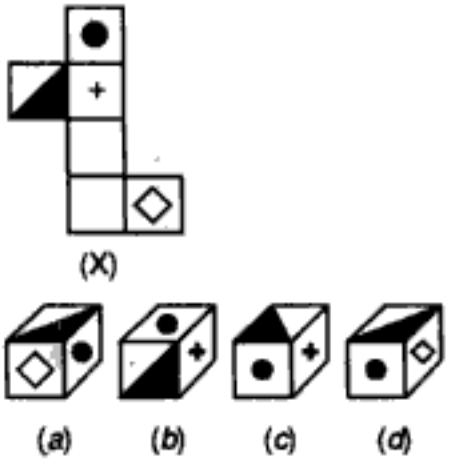
1.



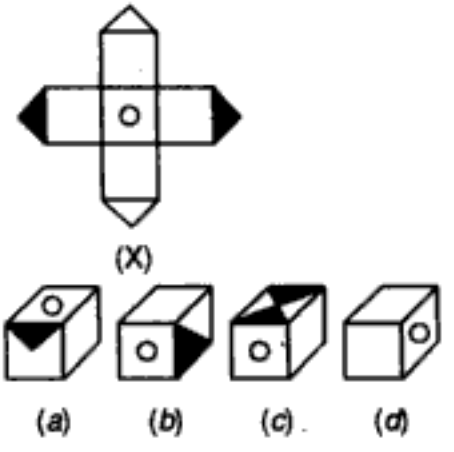
2.



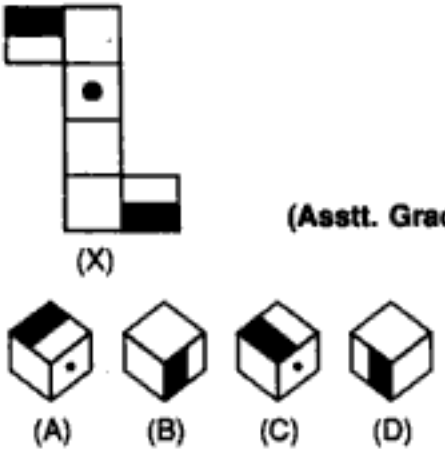
3.



4.



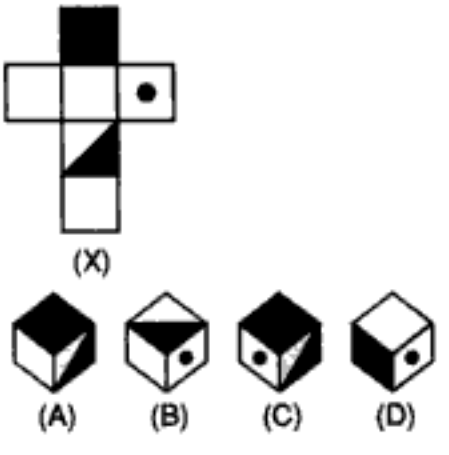
5.



(Asstt. Grade, 1992)

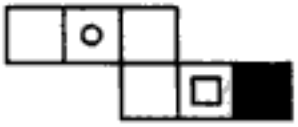
(*a*) A and B only (*b*) B and C only
(*c*) B and D only (*d*) A, B, C and D

6.



(*a*) A and C only (*b*) B, C and D only
(*c*) B and D only (*d*) C and D only

7.



(X)

(A) (B) (C) (D)

(*a*) A and B only (*b*) B, C and D only
(*c*) D only (*d*) C and D only

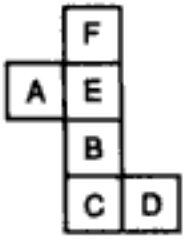
8.

(X)

(*a*) (*b*) (*c*) (*d*)

(*a*) A and B only (*b*) B and C only
(*c*) A and D only (*d*) A, B, C and D.

9.

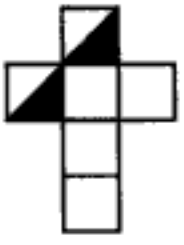


(X)

(A) (B) (C) (D)

(*a*) A only (*b*) B only
(*c*) A and C only (*d*) A, B, C and D

10.



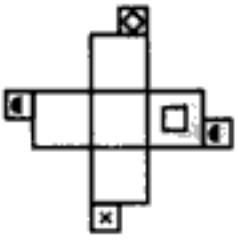
(X)

(Asstt. Grade, 1992)

(A) (B) (C) (D)

(*a*) A and D only (*b*) C and D only
(*c*) A and B only (*d*) B and C only

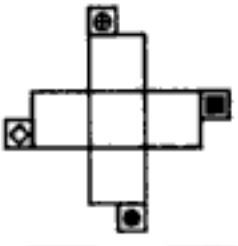
11.

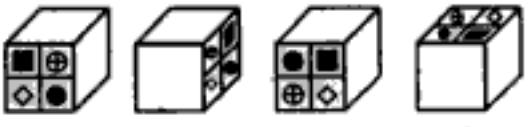


(A) (B) (C) (D)

(*a*) A, B and C only (*b*) B and C only
(*c*) A, C and D only (*d*) B, C and D only

12.





(A) (B) (C) (D)

(*a*) A and B only (*c*) B and C only
(*b*) B only (*d*) A, B and D only

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ANSWERS

1. (*d*) : Fig (X) is the same as form **3.** so, when cube is formed, 2 lies opposite 4; 1 lies opposite 6 and 5 lies opposite 3. Hence, the pairs 2 & 4, 1 & 6 5 & 3 cannot occur at adjacent faces. So, only cube (*d*) can be formed.

2. (*a*) : When fig. (X) is folded to form a cube, the two rectangular portions combine to form the top of the cube. So, cube (*a*) will be formed.

3. (*b*) Fig (X) is the same as form **3.** So, when it is folded to form a cube, the half shaded face will lie opposite the face bearing the rhombus. So, the possibility of cubes (*a*) and (*d*) is ruled out. Out of the cubes (*b*) and (*c*), the pattern in figure (x) shows that cube (*b*) will be formed.

4. (*d*) : Fig. (x) is the same as form **5.** The four triangular portions will combine to form a face of the type  which lies opposite to the face bearing the circle. So, none of the cubes (*a*), (*b*) or (*c*) can be formed.

5. (*d*) : Fig. (x) is the same as form **2.** So, the half shaded faces lie opposite to each other. The pattern in fig. (x) shows that on folding, each of the cubes A, B, C and D are possible.

6. (*b*) : Fig. (x) is the same as form **1.** So, the half shaded face and the completely shaded faces lie opposite to each other. Therefore, the cube (A) cannot be formed. Moreover, the pattern in fig (x) shows that out of the cubes B, C and D, only the cubes B and D can be formed by folding fig. (x).

7. (*d*) : Fig (x) is the same as form **4.** So, the faces bearing the circle and the square lie opposite to, each other. Therefore, the cubes (A) and (B) cannot be formed. The pattern in fig. (x) Shows that both the cubes (*C*) and (D) can be formed by folding fig. (x).

8. (*d*) : Fig. (x) is the same as form **5.** The pattern on fig. (x) shows that all the cubes (A), (B), (C) and (D) can be formed by folding fig. (x).

9. (*b*) : Fig. (x) is the same as form **3.** So, when the cube is formed, F lies opposite B; E lies opposite C; D lies opposite A. Hence, the pairs F & B, E & C and D & A cannot occur at adjacent faces. So, only cube (B) can be formed.

10. (*a*) : The pattern on fig. (x) shows that the cubes (A) and (D) can be formed by folding fig. (x).

11. (*d*) : The pattern on fig. (x) shows that the cubes (B), (C) and (D) can be formed by folding fig. (x).

12. (*b*) : When fig. (x) is folded to form a cube with one of the faces as  Therefore, cube (B) can be formed by folding fig. (x) None of the cubes A, C or D can be formed by folding fig. (x).

13. (*a*) : Fig. (x) is similar to form **1.** So, the two rectangular shaded portions form two faces of the cuboid. Therefore, the cuboids (B) and (D) cannot be obtained by folding fig. (x). Both the cuboids (A) and (C) can be obtained by folding fig. (x)

14. (*d*) : The pattern in fig. (x) shows that each one of the cubes (A), (B), (C) and (D) can be formed by folding fig. (x).

15. (*c*) : The shaded face and the face bearing the square will lie opposite to each other. So, the cubes (B) and (D) cannot be formed by folding fig. (x). The pattern shows that both the cubes (A) and (C) can be formed by folding fig. (x).

16. (*b*) : One of the black faces lies opposite the face bearing the dot. So both the black faces cannot lie adjacent to the face bearing the dot. So, cube (B) cannot be formed by folding fig. (x). The pattern in fig. (x) shows that each of the cubes (A), (C) and (D) can be formed by folding fig. (x).

17. (*a*) : The faces bearing the dot and the shading lie opposite to each other. So, the cubes (B) and (D) cannot be formed by folding fig. (x). Two of the blank faces lie opposite to each other. So, the three blank faces cannot lie adjacent to each other. Therefore, the cube (C) also cannot be formed. The pattern shows that cube (A) can be formed by folding fig. (x).

18. (*b*) : The pattern in fig. (x) shows that when fig. (x) is folded, only the cubes (A) and (C) can be formed.

19. (*b*) : The pattern in fig. (x) shows that except cube (C) each other cube can be formed by folding fig. (x).

20. (*c*) : When fig. (x) is folded to form a cube, the two rectangular portions combine to form a face  . This face lies opposite the face bearing the square. Also, two of the blank faces lie opposite to each other. So the three blank faces cannot lie adjacent to each other. Hence, cube (B) cannot be formed. The pattern in fig. (x) shows that all other cubes can be formed by folding fig. (x).

21. (*d*) : The pattern on fig. (x) shows that only cube (*d*) can be formed by folding fig. (x).

22. (*a*) : The fig. (x) is similar to form **2.** So, the two half shaded portions lie opposite to each other. Therefore, the cubes (*b*) and (*c*) cannot be formed by folding fig. (x). The pattern in fig. (x) shows that cube (*d*) cannot be formed and only cube (*a*) can be formed by folding fig. (x).

23. (*d*) : The two half shaded faces lie opposite to each other when fig. (x) is folded. So, the cube (B) cannot be formed. The pattern in fig. (x) shows that, out of the remaining three cubes, only the cubes (A) and (C) can be formed by folding fig. (x).

24. (*a*) : When fig. (x) is folded to form a cube, the two half shaded faces lie opposite to each other. So, the cube (D) cannot be formed. The pattern in fig. (x) shows that out of the remaining three cubes, only the cubes (A) and (C) can be formed by folding fig. (x).

25. (*c*) : Fig. (x) is similar to form **5.** So, the four triangular portions combine to form a single face of the cube when fig. (x) is folded. Therefore, the cubes (A) and (D) will not be formed. The pattern on fig. (x) shows that both the cubes (B) and (C) can be formed by folding fig. (x).

26. (*a*) : The pattern on fig. (x) and also the fact that the faces are rectangle, indicate that only fig. (A) can be obtained by folding fig. (x).

27. (*d*) : The pattern in cube (x) shows that only fig. (*d*) can be formed by unfolding the cube (x).

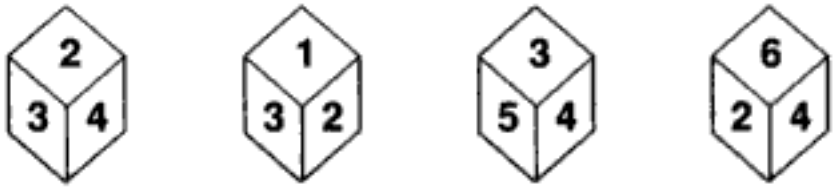
28. (*c*) : The given figure is similar to form **3.** So, three dots would lie opposite the face bearing five dots.

29. (*d*) : The given figure is similar to form **4.** So, six dots would lie opposite the face having three dots.

PROBLEMS ON DICE

Sometimes we are given figures showing the same die in various positions. After observing these figures, we have to find the number opposite a given number on the die. The procedure to be adopted for solving such problems, will be clear from the following examples :

Example 1 : ***A die is thrown four times and its four different positions are given below. Find the number on the face opposite the face showing 2.***

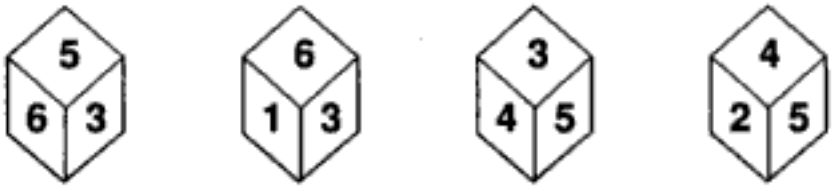


(*i*) (*ii*) (*iii*) (*iv*)

(*a*) 3 (*b*) 4 (*c*) 5 (*d*) 6

Solution : Here, the number 2 appears in three dice, namely (*i*), (*ii*) and (*iv*). In these dice, we observe that the numbers 2, 4, 1 and 6 appear adjacent to 3. So, none of these numbers can be present opposite 2. The only number left is 5.
Hence, 5 is present on the face opposite 2.
∴ The answer is (c)

Example 2 : ***Shown below are, four different positions of the same dice. Find the number on the face opposite the face showing 6.***



(*i*) (*ii*) (*iii*) (*iv*)

(*a*) 1 (*b*) 2 (*c*) 4 (*d*) 5

Solution : In this case, the number 6 appears in only two dice from which we observe that the numbers 1, 3 and 5 appear adjacent to 6, so that 2 or 4 can appear opposite 6.
So, we begin finding a number which appears at least in three of the given dice. 3 is such a number, which appears in (i), (ii) and (iii). We observe in these dice that, the numbers 1, 4, 5 and 6 appear adjacent to 3. So, they cannot appear opposite 3. The only number that can appear opposite 3 is 2.
So, 2 cannot appear opposite 6.
Hence, 4 appears opposite 6, so that (c) is the answer.

We are now in a position to solve the following exercise.

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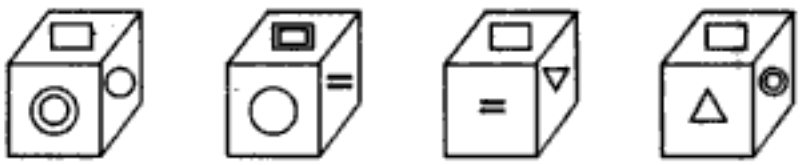
6. If the total number of dots on opposite faces of a cubical block is always 7, find the figure which is correct. **(Clerk's Grade, 1995)**

(*a*) (*b*) (*c*) (*d*)

Directions : *Questions 7 to 9 are based on the following illustrations, which are four views of a cube.* **(Railways, 1993)**



(*i*) (*ii*) (*iii*) (*iv*)

Study these illustrations carefully and attempt questions 7 to 9.

7. The symbol at the bottom of (iv) is

(*a*) ○ (*b*) ◎ (*c*) △ (*d*) ▭

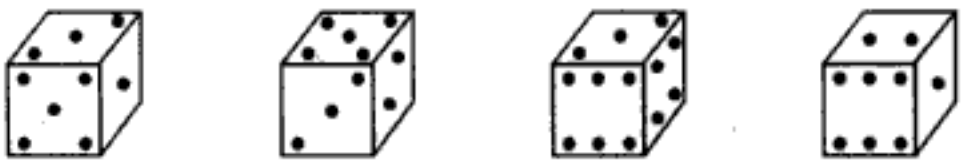
8. The symbol opposite the face having the symbol = is

(*a*) ○ (*b*) △ (*c*) ◎ (*d*) ▭

9. The symbol opposite the face having triangle is

(*a*) ○ (*b*) ◎ (*c*) = (*d*) ▭

10. If the total number of dots on opposite faces of a cubical block is always 7, find the figure which is correct. **(S.S.C. 1995)**



(*a*) (*b*) (*c*) (*d*)

11.

(I.A.S. 1982)

(*i*) (*ii*) (*iii*)

What should be the number opposite 3 ?

(*a*) 1 (*b*) 6 (*c*) 5 (*d*) 4

12.

(*i*) (*ii*) (*iii*)

How many dots lie opposite 2 dots ?

(*a*) 1 (*b*) 3 (*c*) 5 (*d*) 6

13.

(*i*) (*ii*) (*iii*)

Find the number of dots on the face opposite the face bearing 3 dots.

(*a*) 5 (*b*) 6 (*c*) 4 (*d*) Cannot be determined

14.

(*i*) (*ii*) (*iii*)

What numbers occur at the bottom face in the three positions of the same die ?

(*a*) 6, 6, 2 (*b*) 5, 6, 1 (*c*) 5, 5, 5 (*d*) 6, 5, 2

15. *The six faces of a die have been marked with alphabets A, B, C, D, E and F respectively. This die is rolled down three times. The three positions are shown as :*

(*i*) (*ii*) (*iii*)

Find the alphabet opposite A.

(*a*) B (*b*) C (*c*) D (*d*) E

16.

(*i*) (*ii*) (*iii*)

A cube has six different symbols drawn over its six faces. The symbols are dot, circle, triangle, square, cross and arrow. Three different positions of the cube are shown in figures (i), (ii) & (iii).

(i) Which symbol is opposite the dot ?

(*a*) Circle (*b*) Triangle (*c*) Arrow (*d*) Cross

(ii) Which symbol is opposite the Arrow?

(*a*) Circle (*b*) Triangle (*c*) Dot (*d*) Cross

(iii) Which symbol occurs at the bottom of fig. (ii).

(*a*) Arrow (*b*) Triangle (*c*) Circle (*d*) Dot

17.

(X) (Y) (Z)

(i) Which number lies at the bottom face of the die X ?

(*a*) 1 (*b*) 2 (*c*) 3 (*d*) 4

(ii) Which number lies at the bottom face of the die Y ?

(*a*) 6 (*b*) 5 (*c*) 2 (*d*) 1

(iii) Which number lies opposite 6?

(*a*) 1 (*b*) 2 (*c*) 4 (*d*) 5

(iv) Which numbers are hidden behind the numbers 6 and 5 in the die Z?

(*a*) 1 & 4 (*b*) 1 & 3 (*c*) 4 & 3 (*d*) 1 & 2

(v) Which of the hidden numbers adjacent to 5 in die X are common to the hidden numbers adjacent to 5 in die Z?

(*a*) 1 & 4 (*b*) 2 (*c*) 6 (*d*) None

18. *Two positions of a dice are shown below. If 1 is at the bottom, which number will be on the top ?* **(Asstt. Grade, 1994)**

(*i*) (*ii*)

(*a*) 2 (*b*) 3 (*c*) 4 (*d*) 5

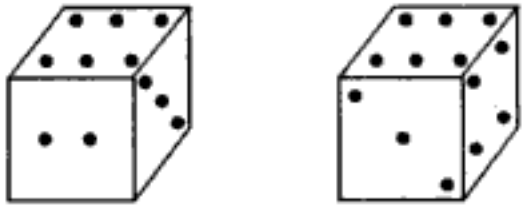
19.

(*i*) (*ii*)

What is the number of dots at the bottom face of the left hand side dice ?

(*a*) 3 (*b*) 4 (*c*) 5 (*d*) 6

20. Two positions of a dice with 1 to 6 dots on its sides are shown below. If the dice is resting on the side with three dots, what will be the number of dots on the side at the top? **(Section Officers, 1993)**



(*i*) (*ii*)

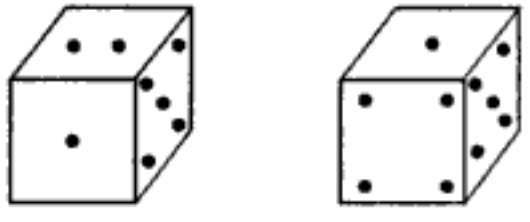
(*a*) 1 or 5 (*b*) 2 (*c*) 3 (*d*) 5

21. *What will be the number at the bottom if 5 is at the top; the two positions of the dice being as given below :*

(*i*) (*ii*)

(*a*) 1 (*b*) 2 (*c*) 3 (*d*) 6

22. *Observe the dots on a dice (one to six dots) in the following figures. How many dots are contained on the face opposite to that containing four dots?* **(I. Tax & Central Excise, 1996)**



(*i*) (*ii*)

(*a*) 2 (*b*) 3 (*c*) 5 (*d*) 6

23.

(*i*) (*ii*)

What is the number of dots on the face opposite 2 dots ?

(*a*) 1 (*b*) 3 (*c*) 4 (*d*) 6

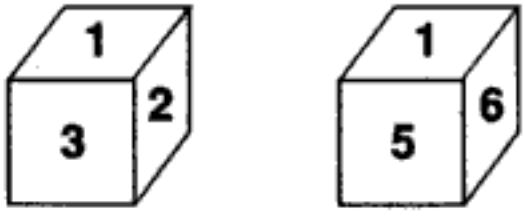
24. *Two positions of a block are shown below. When 2 is at the bottom, which number will be at the top?* **(U.D.C. 1995)**

Hidden page

When Blue is on the top, which colour will be at the bottom ?

(*a*) Orange (*b*) Red (*c*) White (*d*) Yellow

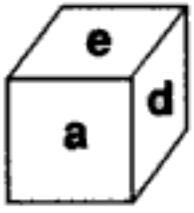
29. *Two positions of a dice are shown. When 4 is at the bottom, what number will be on the top ?* **(Asstt. Grade, 1995)**



(*i*) (*ii*)

(*a*) 1 (*b*) 2 (*c*) 5 (*d*) 6

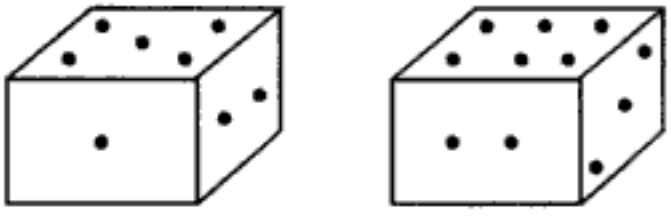
30. *In a dice a, b, c and d are written on the adjacent faces, in a clockwise order and e and f at the top and bottom. When c is at the top, what will be at the bottom?* **(Asstt. Grade, 1995)**



(*i*)

(*a*) a (*b*) b (*c*) c (*d*) e

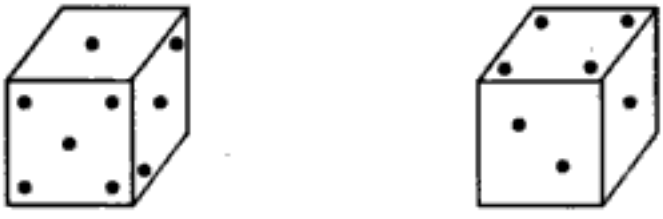
31. *Two positions of a parallelopiped are shown below. When the number 3 will be on the top side, then which number will be at the bottom ?* **(I. Tax & Central Excise, 1994)**



(*i*) (*ii*)

(*a*) 1 (*b*) 4 (*c*) 5 (*d*) 6

32. *Two positions of a dice are shown below. When there are two dots at the bottom, the number of dots at the top will be* **(Asstt. Grade, 1995)**



(*i*) (*ii*)

(*a*) 2 (*b*) 3 (*c*) 5 (*d*) 6

33. *Two positions of a block are shown below :* **(U.D.C. 1995)**

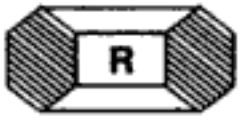
(*i*) (*ii*)

When six is at the bottom, what number will be at the top ?

(*a*) 1 (*b*) 2 (*c*) 4 (*d*) 5

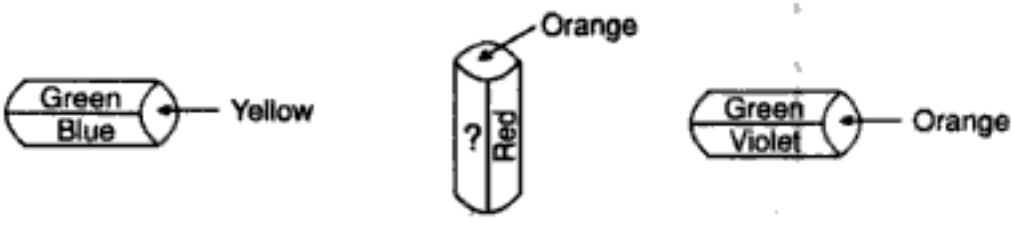
34. *The lateral sides of a block in the shape of a six-sided prism is painted in Violet, Blue, Green, Yellow, Orange and Red. Two of its positions are shown below :*

When the block is laid as in the figure what are the colours adjacent to the Red side ? **(Asstt. Grade, 1994)**



(*a*) Yellow and Orange (*b*) Yellow and Blue
(*c*) Violet and Yellow (*d*) Violet and Orange

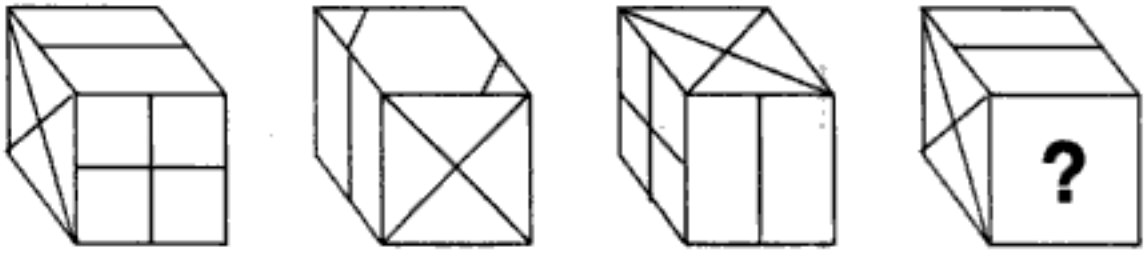
35. *A cylinder is painted in 6 colours-- Green, Blue, Yellow, Violet, Red and Orange. Two positions are shown below :* **(Asstt. Grade, 1994)**



What is the colour in the empty space ?

(*a*) Blue (*b*) Green (d) Violet (d) Yellow

36. *A cubical block with designs in the faces is presented as viewed from different directions. Find the design on the blank face?* **(Asstt. Grade, 1993)**



(*i*) (*ii*) (*iii*) (*iv*)

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ANSWERS

1. (*a*) : From fig. (*i*), (*ii*) and (*iii*), it is clear that the numbers 3, 2, 4 and 5 lie adjacent to the number 6. So, 1 lies opposite 6.

2. (*a*) : From fig. (*i*), (*ii*) and (*iii*), it is clear that the numbers 1, 5, 4 and 2 lie adjacent to the number 3. So, 6 lies opposite 3. From fig. (*ii*) and (*iii*), it follows that 3, 5 and 2 lie adjacent to 4. So, 1 and 6 can lie opposite 4. But 6 lies opposite 3. Therefore, 1 lies opposite 4.

3. (*c*) : From fig. (*i*), (*iii*) and (*iv*), it is clear that the numbers 6, 1, 5 and 2 lie adjacent to 3. So, 4 lies opposite 3.

4. (*a*) : From fig. (*iii*) and (*iv*), it is clear that the numbers 5, 6 2, and 3 lie adjacent to 4. So, 1 lies opposite 4.

5. (*c*) : From fig. (*i*), (*iii*) and (*iv*), we find that the numbers adjacent to 4 are 5, 6, 1 and 2. So, 3 lies opposite 4 i.e. 4 lies opposite 3.

6. (*c*) : Since the sum of the number of dots on opposite faces of the block is always 7, we cannot get 1 dot adjacent 6 dots, 2 dots adjacent 5 dots or 3 dots adjacent 4 dots. So, the figures (*a*), (*b*) and (*d*) cannot be correct.

7. (*d*) : From fig. (*i*), (*iii*) and (*iv*), we observe that the symbols 'O' 'O', '=' & 'Δ' lie adjacent to '▭'. So, '▭' lies opposite '▭'.

8. (*c*) : From fig. (*ii*) and (*iii*), it is clear that the symbols '▭', 'O' '▭' and 'Δ' lie adjacent to '=' sign. So, ○ lies opposite '='

9. (*a*) : From fig. (*iii*) and (*iv*), it follows that the symbols '▭', '=' & 'O' lie adjacent to 'Δ'. So one of the symbols 'O' or '▭' can lie opposite 'Δ'. But '▭' lies opposite '▭'. So 'O' lies opposite 'Δ'.

10. (*a*) : Since the sum of the number of dots on opposite faces of the block is always 7, we cannot get 1 dot adjacent 6 dots, 2 dots adjacent 5 dots or 3 dots adjacent 4 dots. So, the figures (*b*), (*c*) and (*d*) cannot be correct.

11. (*b*) : From the three given figures, it is clear that the numbers 1, 2, 5 and 4 appear adjacent to 3, so none of these can appear opposite 3. Therefore, 6 appears opposite 3.

12. (*c*) : From figures (*ii*) and (*iii*), it is clear that one, three, four and six dots cannot appear opposite five dots. Therefore, two dots appear opposite five dots.

13. (*b*) : From fig. (*ii*) and (*iii*) it is clear that six, four, one and three dots cannot appear opposite two dots. So, five dots appear opposite two dots. From fig. (*i*) and (*iii*) it is clear that four, two and one dots cannot appear opposite three dots. Also, since five dots appear opposite two dots so they cannot appear opposite three dots. Therefore, six dots appear opposite three dots.

14. (*c*) : From three figures it is clear that the numbers 2, 3, 1 and 6 cannot appear opposite 4. So, 5 appears opposite 4. Since in each one of the three dice, 4 appears on the top. So, 5 appears at the bottom face of each dice.

15. (*d*) : From fig. (*ii*) and (*iii*) it is clear that C, D, B and F cannot appear opposite E. So, A appears opposite E. i.e. E is the alphabet opposite A.

16. From fig. (*i*) and (*iii*), it is clear that dot, triangle, cross and arrow cannot appear opposite the circle. So, the *square lies opposite the circle.*
From fig. (*ii*) and (*iii*), it is clear that triangle, square, arrow and circle cannot appear opposite the cross. So, *the dot lies opposite the cross.* Obviously, the triangle lies opposite the arrow.

(*i*) (*d*) : As discussed earlier, the cross lies opposite the dot.

(*ii*) (*b*) : As discussed earlier, the triangle lies opposite the arrow.

(*iii*) (*c*) : Since the square lies at the top of fig. (*ii*) and the circle lies opposite the square; so, the circle lies at the bottom of fig. (*ii*).

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15. DOT SITUATION

The problems on dot situation involve the search of similar conditions in the alternative figures as indicated in the problem figure. The problem figure contains dots placed in the spaces enclosed between the combinations of square, triangle, rectangle and circle. Selecting one of these dots we observe the region in which this dot in enclosed i.e. to which of the four figures (circle, square, rectangle and triangle) is this region common. Then we look for such a region in the four alternatives. Once we have found it, we repeat the procedure for other dots, if any. The alternative figure which contains all such regions is the answer.

Example : ***From amongst the figures marked (1), (2), (3) and (4), select the figure which satisfies the same conditions of placement of dots as in fig. (x).***

(x) (1) (2) (3) (4)

Solution. In fig. (x), one of the dots is placed in the region common to the circle and the triangle and the other dot is placed in the region common to the triangle and the square. From amongst the figures (1), (2), (3) and (4), only fig. (1) has both the regions, one common to circle and triangle and the other common to triangle and square.

Hence, fig. (1) is the answer.

EXERCISE 15

Directions : ***In each of the following questions, there is a diagram marked (x), with one or more dots placed in it. This diagram is followed by four other figures, marked (1), (2), (3) and (4) only one of which is such as to make possible the placement of the dot(s) satisfying the same conditions as in the original diagram. Find the correct alternative in each case.***

1.

(x) (1) (2) (3) (4)

2.

(x) (1) (2) (3) (4)

(Hotel Management, 1993)

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region common to the circle and the rectangle. Fig. (*1*) contains no region common to square and circle only; fig. (*2*) and (*3*) contain no region common to triangle and rectangle only. Only fig. (4) contains all the three types of regions.

26. (*4*) : Fig. (x) contains three dots one in the region common to square and circle, second in the region common to all the figures and third in the region common to circle and triangle. In figures (*1*) and (*3*) there is no region common to the circle and square only and in fig. (*2*) there is no region common to circle and triangle only. Only fig. (*4*) contains all the three types of regions.

27. (*1*) : Fig.(x) contains three dots-one in the region common to circle and triangle, second in the region common to triangle and square and third in the region common to triangle and rectangle. Figures (*2*) and (*4*) do not contain any region common to square and triangle and fig. (*3*) does not contain any region common to the circle and triangle. Only fig.(*1*) contains all the three types of regions.

28. (*1*) : There are three dots in fig. (x) -one in the circle alone, second in the region common to all the three figures and third in the region common to square and circle only. Fig. (*2*) does not contain a region common to square and circle only and figures (*3*) and (*4*) contain no region which lies only in the circle. Only fig. (*1*) contains all the three types of regions.

29. (*1*) : Fig.(x) contains three dots-one in the region common to square and rectangle , second in the region common to all the four figures and third in the region common to rectangle and triangle. Fig. (*2*) contains no region common to rectangle and triangle only; fig. (*3*) contains no region common to rectangle and square only and fig. (*4*) contains no region common to all the four figures. Only fig. (*1*) contains all the three types of regions.

30. (*4*) : Fig.(x) contains three dots-one in the region common to circle and square only, second in the region common to square, rectangle and triangle only and third in the region common to rectangle and triangle only. Figures (*1*), (*2*) and (*3*) contain no region common to triangle, square and rectangle only. Only fig. (4) contains all the three type of regions.

31. (*3*) : In fig. (x), one dot lies in the region common to the circle, rectangle and triangle; the second dot lies in the region common to the triangle and circle and the third dot lies in the region common to circle, triangle and square. In figures (*1*), (*2*) and (*3*), there is no region common to circle, triangle and rectangle only. Only fig. (*3*) contains all the three types of regions.

32. (*4*) : In fig. (x), one dot appears in the region common to the circle and rectangle only, second dot appears in the region common to the circle, rectangle and square only and the third dot appears in the region common to triangle, square and circle only. Figures (*1*) and (*3*) do not contain any region common to the circle, square and rectangle, fig. (*2*) contains no region common to the circle and triangle. Only fig. (*4*) contains all the three types of regions.

16. CONSTRUCTION OF SQUARES AND TRIANGLES

This chapter deals with the brainteasing problems of construction of squares by combination of three parts after selecting them from the list of five different alternatives numbered from A to E. The following discussion would assist us in solving such problems :--

Select a piece which contains a right angle between two adjacent outer edges. Try to fit another piece in its hollow spaces. If you can't, select another piece. Repeat the procedure with different sets of such pieces. Finally with the two pieces fitting into each other, find the third piece which fits into the other two selected ones, to get a completed square finally.

We now discuss a couple of solved examples.

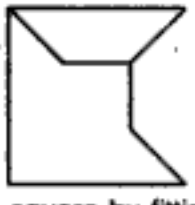
Example 1 :

Select three out of the following five alternative figures which together form one of the four alternatives (a), (b), (c) or (d) and when fitted together will form a complete square.

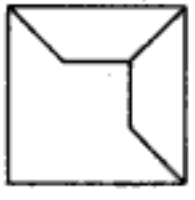
A B C D E

(*a*) ACD (*b*) CDE (*c*) BCD (*d*) ACE

Solution : The only figure with a right angle is fig. (C). Fig. (B) fits into it as shown :--

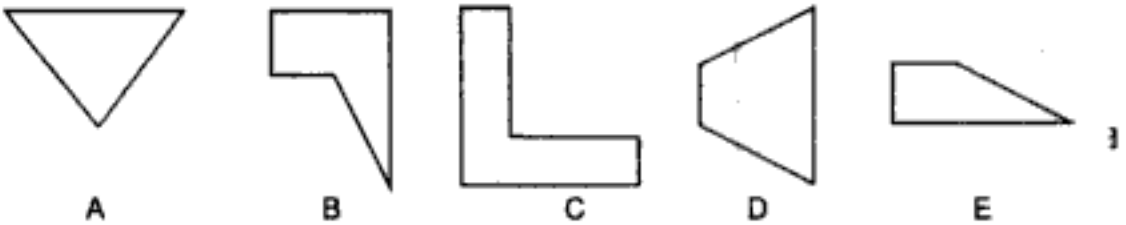


Finally, fig. (D) completes the square by fitting into the above combination. The completed square appears, as shown :--



∴ Figures (B), (C) & (D) will together form a square.
Hence, alternative (C) is the answer.

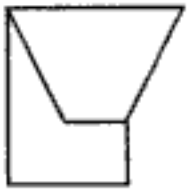
Example 2 : ***Select three out of the following five alternative figures which together form one of the four alternatives (a), (b), (c) or (d) and when fitted together will form a complete square.***



A B C D E

(*a*) ACD (*b*) BDE (*c*) ABD (*d*) ADE

Solution : We begin with choosing a figure having a right angle. Fig (A) does not have any right angle. Fig (B) has a right angle. Now, we try to fit other pieces in fig. (B). We get fig (D) fitting into it; as shown :

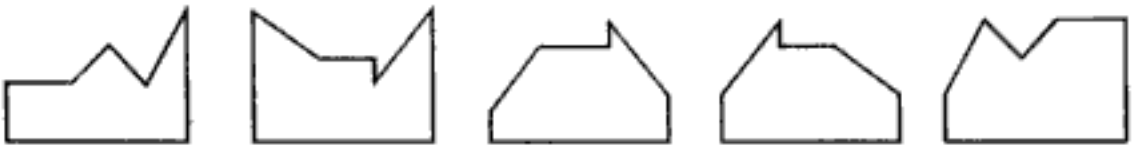


We finally select fig. (E) fitting into this combination to complete the square; as shown :

∴ Figures (B), (D) & (E) together form a square.
Hence, alternative (*b*) is the answer.

A yet another type of problems on construction of squares is discussed below, in the following example.

Example 3 : ***Given below is a set of five alternative figures marked (A), (B), (C), (D) and (E). Select the figure which does not fit into any of the remaining alternative figures to form a complete square.***



A B C D E

Solution : Clearly, fig. (A) fits into fig. (E) to form a complete square and also, fig. (B) fits into fig. (D) to form a complete square as shown :

Fig. (C) does not fit in any of the alternative figures to form a square. Therefore, fig. (C) is the answer.

Similar to the construction of squares, we have problems on construction of equilateral triangles. The solving of such problems will become easier after studying the following example.

Example 4 :

A B C D E

(*a*) ABD (*b*) ACE (*c*) ACD (*d*) CDE

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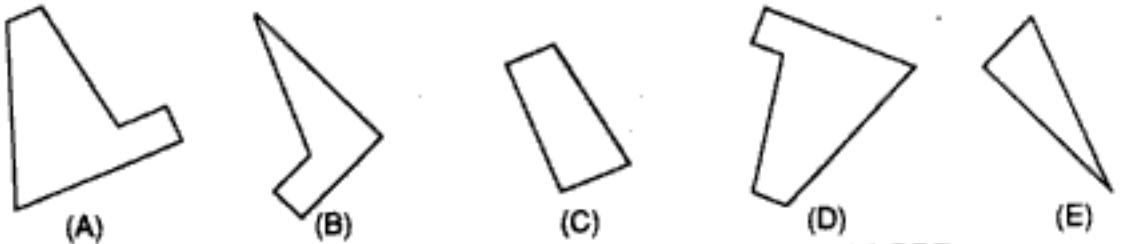
12.



(A) (B) (C) (D) (E)

(*a*) ABC (b) BCD (*c*) CDE (*d*) BDE

(Hotel Management, 1993)

13.

(A) (B) (C) (D) (E)

(*a*) ACD (b) ADE (*c*) ABE (*d*) ABD

14.

(A) (B) (C) (D) (E)

(*a*) ABC (b) BCD (*c*) ACD (*d*) CDE

(Hotel Management, 1993)

15.

(A) (B) (C) (D) (E)

(*a*) ABE (b) ABC (*c*) BCE (*d*) BCD

16.

(A) (B) (C) (D) (E)

(*a*) ABD (b) BCD (*c*) CDE (*d*) BCE

(Hotel Management, 1993)

17.

(A) (B) (C) (D) (E)

(*a*) ABD (b) ABE (*c*) BCD (*d*) BDE

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24.

(A) (B) (C) (D) (E)

(*a*) ACD (b) ABD (*c*) BCD (*d*) CDE

(M.B.A. 1994)

25.

(A) (B) (C) (D) (E)

(*a*) ADE (b) ACE (*c*) BCE (*d*) BCD

26.

(A) (B) (C) (D) (E)

(*a*) ABC (b) BCD (*c*) ACD (*d*) CDE

(Hotel Management, 1993)

27.

(A) (B) (C) (D) (E)

(*a*) ABC (b) ACD (*c*) BCE (*d*) CDE

28.

(A) (B) (C) (D) (E)

(*a*) ABD (b) BCE (*c*) ACD (*d*) BDE

(Hotel Management, 1993)

Directions : ***In questions 29 to 33, five alternative figures, marked (A), (B), (C), (D) and (E) are given. From these five figures, we can get two pairs of figures which form squares. You have to select the odd figure which does not fit in any of the other alternative figures to form a complete square.***

29.

(A) (B) (C) (D) (E)

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44.

(A) (B) (C) (D) (E)

(*a*) ACE (b) ABD (*c*) BDE (*d*) CDE

45.

(A) (B) (C) (D) (E)

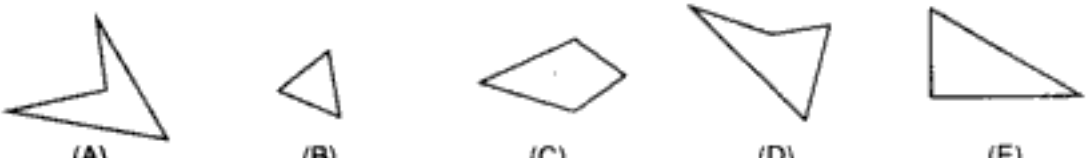
(*a*) ABC (b) ACE (*c*) BCD (*d*) BDE

46.

(A) (B) (C) (D) (E)

(*a*) BCD (b) ABD (*c*) CDE (*d*) ABE

47.



(A) (B) (C) (D) (E)

(*a*) ABD (b) BCD (*c*) BDE (*d*) CDE

48.

(A) (B) (C) (D) (E)

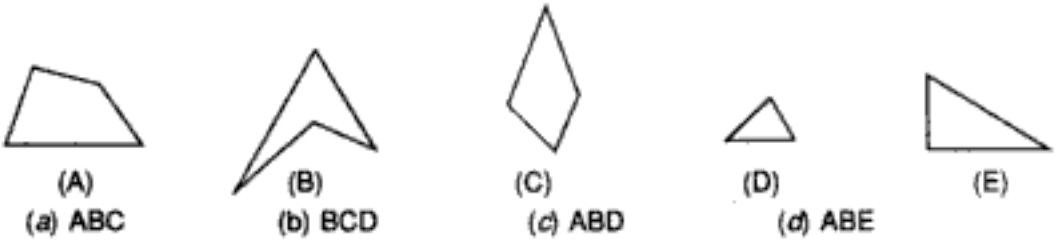
(*a*) ABC (b) ACE (*c*) BDE (*d*) CDE

49.

(A) (B) (C) (D) (E)

(*a*) BCD (b) ACD (*c*) CDE (*d*) BDE

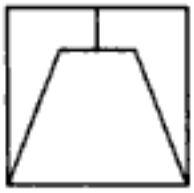
50.

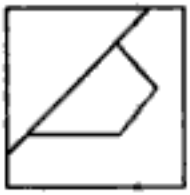


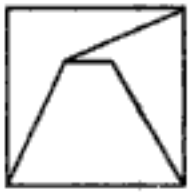
(A) (B) (C) (D) (E)

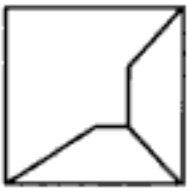
(*a*) ABC (b) BCD (*c*) ABD (*d*) ABE

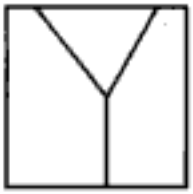
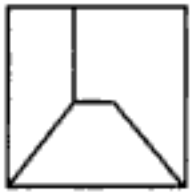
ANSWERS

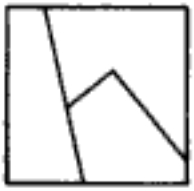
1. (d) 
2. (b) 
3. (b) 
4. (d) 

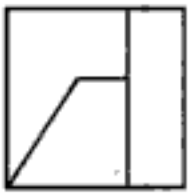
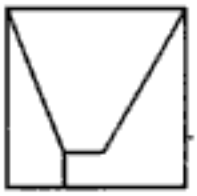
5. (d) 
6. (c) 
7. (d) 
8. (c) 

9. (c) 
10. (c) 
11. (d) 
12. (c) 

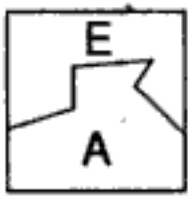
13. (b) 
14. (d) 
15. (a) 
16. (b) 

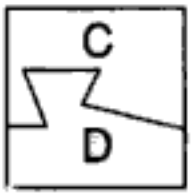
17. (b) 
18. (c) 
19. (d) 
20. (d) 

21. (a) 
22. (a) 
23. (b) 
24. (a) 

25. (d) 
26. (a) 
27. (b) 
28. (b) 

29. (c) 

30. (B) 



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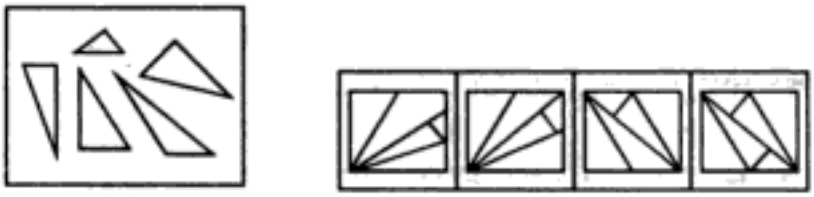
6. 

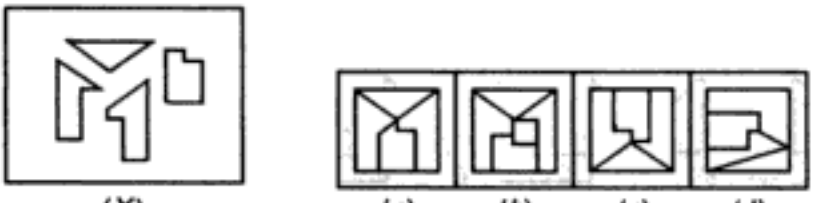
(X) (a) (b) (c) (d)

(C.B.I. 1994)

7. 

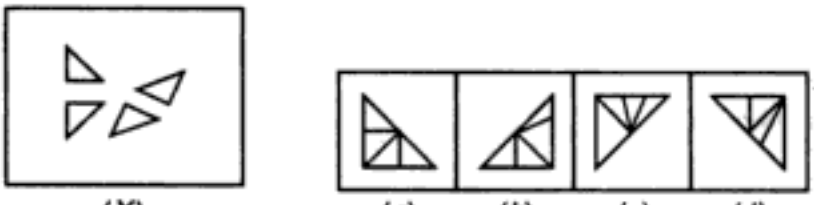
(X) (a) (b) (c) (d)

(Asstt. Grade, 1994)

8. 

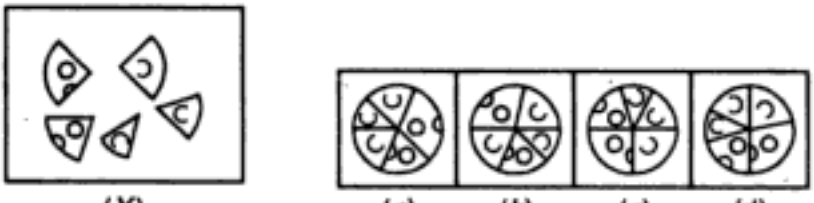
(X) (a) (b) (c) (d)

(Clerks' Grade, 1995)

9. 

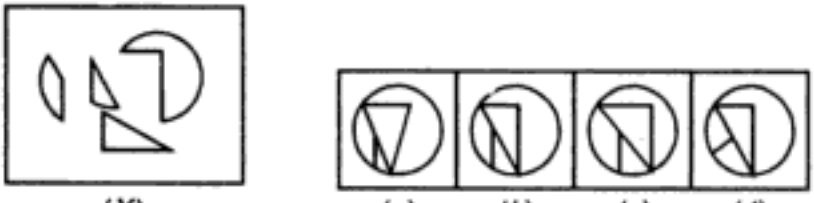
(X) (a) (b) (c) (d)

(I. Tax, 1994)

10. 

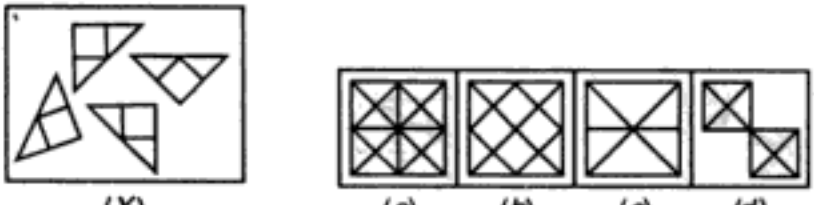
(X) (a) (b) (c) (d)

(C.B.I. 1995)

11. 

(X) (a) (b) (c) (d)

(Central Excise 1995)

12. 

(X) (a) (b) (c) (d)

(I. Tax & Central Excise, 1996)

13. 

(X) (a) (b) (c) (d)

(C.B.I. 1994)

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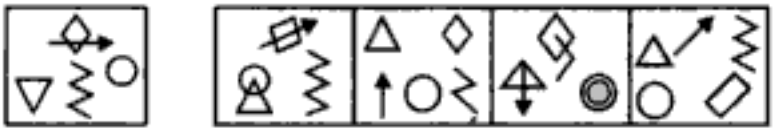
29. 

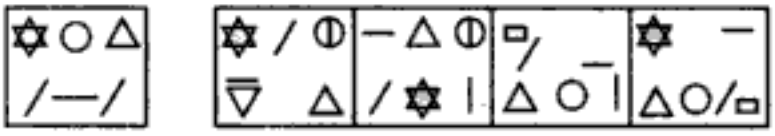
(X) (a) (b) (c) (d)

(Auditors' Exam, 1993)

30. 

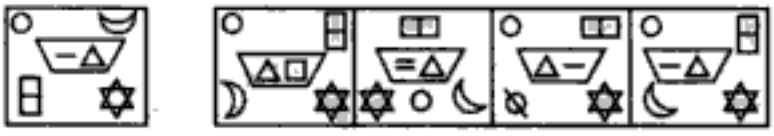
(X) (a) (b) (c) (d)

(Asstt. Grade 1994)

31. 

(X) (a) (b) (c) (d)

(U.D.C. 1994)

32. 

(X) (a) (b) (c) (d)

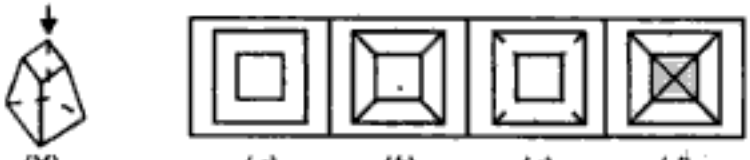
(U.D.C. 1993)

33. The figure of a solid marked 'X' is given below followed by four alternatives (a), (b), (c) and (d). If the solid is viewed in the direction of the arrow, which one of the four alternatives will represent the true view?

(X) (a) (b) (c) (d)

(Railways, 1993)

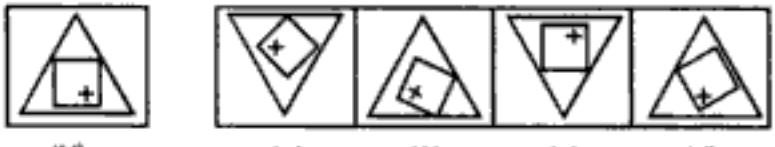
34. The pictorial view of the frustum of a square pyramid is shown in fig. X. Its top view, when viewed in the direction of the arrow, will look like which of the given alternatives (a), (b), (c) and (d) ?



(X) (a) (b) (c) (d)

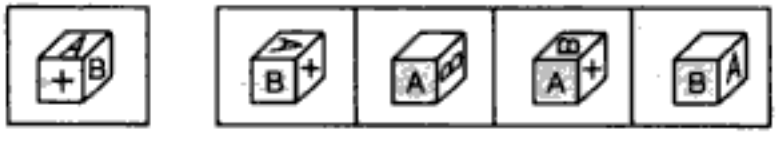
(S.C.R.A. 1993)

Directions (*Questions 35 to 38*) : *In each of the following questions, find out how will the key figure (X) look like after rotation?*

35. 

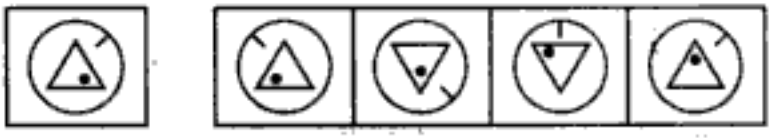
(X) (a) (b) (c) (d)

(Asstt. Grade, 1994)

36. 

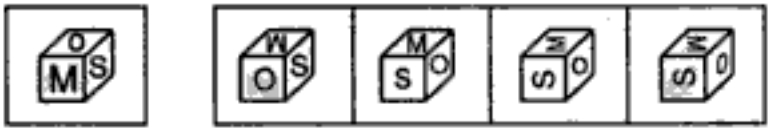
(X) (a) (b) (c) (d)

(Asstt. Grade, 1994)

37. 

(X) (a) (b) (c) (d)

(Asstt. Grade 1993)

38. 

(X) (a) (b) (c) (d)

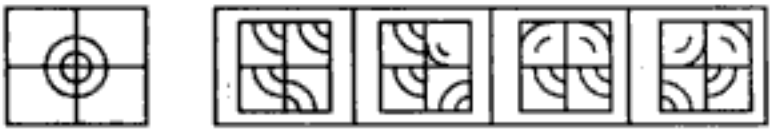
(C.B.I. 1993)

39. 

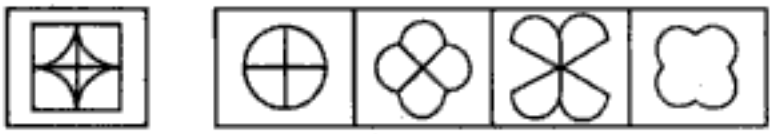
(X) (a) (b) (c) (d)

(U.D.C. 1994)

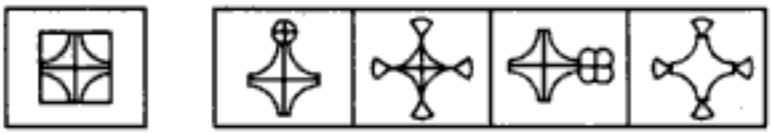
Directions ***(Questions 40 to 42) : Which figure is the rearangement of the parts of the given figure ?***

40. 

(X) (a) (b) (c) (d)

41. 

(X) (a) (b) (c) (d)

42. 

(X) (a) (b) (c) (d)

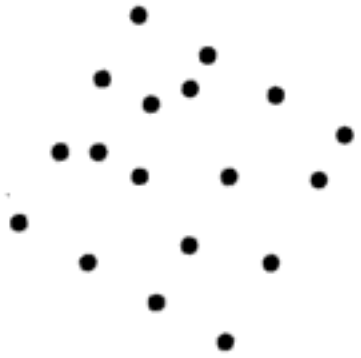
(Asstt. Grade 1993)

ANSWERS

1. (a)	**2.** (a)	**3.** (b)	**4.** (c)	**5.** (b)	**6.** (c)	**7.** (b)	**8.** (c)	**9.** (a)	**10.** (c)
11. (b)	**12.** (b)	**13.** (a)	**14.** (d)	**15.** (c)	**16.** (a)	**17.** (d)	**18.** (c)	**19.** (c)	**20.** (a)
21. (a)	**22.** (c)	**23.** (b)	**24.** (c)	**25.** (b)	**26.** (d)	**27.** (b)	**28.** (a)	**29.** (c)	**30.** (b)
31. (b)	**32.** (d)	**33.** (c)	**34.** (c)	**35.** (b)	**36.** (b)	**37.** (b)	**38.** (d)	**39.** (b)	**40.** (a)
41. (a)	**42.** (a)								

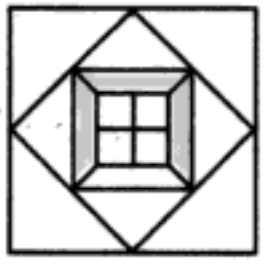
PRACTICE QUESTION SET

1. In the adjoining figure, dots are arranged in a special way. How many rows in all would be having 4 dots in each?



(A) 3 (B) 5 (C) 7 (D) 9

2. What is the minimum number of colours required if the following figure is to be coloured such that no two adjacent sides have the same colour?

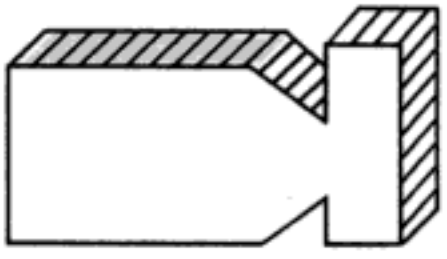


(A) 2 (B) 3 (C) 4 (D) 5

3. A cube is to be coloured in such a way that no two opposite faces have the same colour. The minimum number of colours required is

(A) 1 (B) 2 (C) 3 (D) 6

4. How many faces does the figure shown have?



(A) 6 (B) 12 (C) 13 (D) 14

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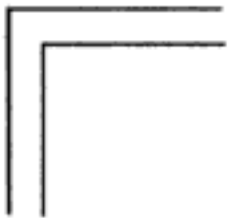
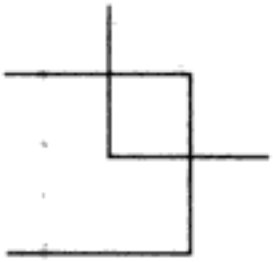
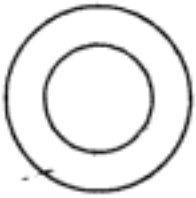
Question figures (Col. I) **Question figures (Col. II)**

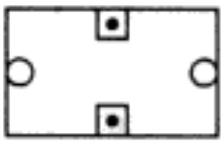
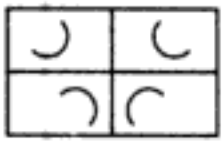
10.  **(B)** 

11.  **(C)** 

12.  **(D)** 

13.  **(E)** 

14.  **(A)** 

15.  **(B)** 

16.  **(C)** 

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21. HNP : PDA : : DLP : ?

(A) PJG (B) CDP
(C) CLP (D) PME
(E) PHE

22. BPM : GNJ : : ? : AKD

(A) FPO (B) FPM
(C) HPB (D) LPH
(E) KPD

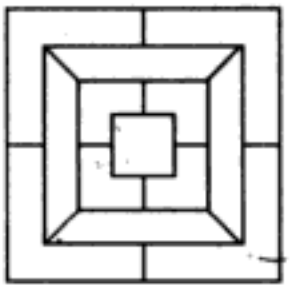
23. AOE : ? : : GMA : NKM

(A) KLM (B) KLF
(C) OBM (D) KMN
(E) KLO

24. A cube is coloured in such a way that each pair of its adjacent sides have the same colour. What is the minimum number of colours you require?

(A) 1 (B) 2 (C) 3 (D) 4

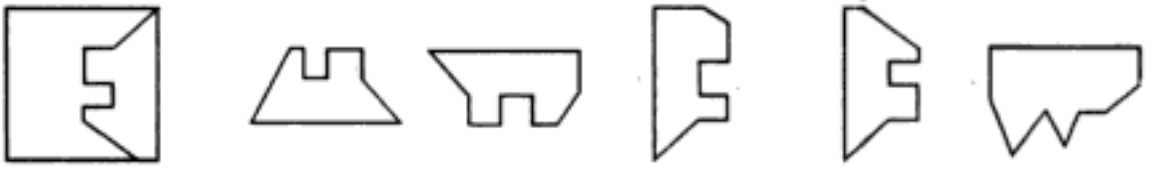
25. What is the minimum number of colours required to fill the spaces in the diagram without the adjacent sides having the same colour?



(A) 2 (B) 3 (C) 4 (D) 6

Directions : ***In questions 26 to 30 one part of a square is on the Left side of the line as Problem Figure and other part of the square is one of the five Figures written as Answer Figures. The correct answer figure will complete the square of the Problem Figure by rotating in any way. Choose the correct figure.***

26.



A B C D E

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38. DISCARD

(A) DRACSID (B) DRACSID

(C) DISCARD (D) DISCARD

39. SNACK

(A) SNACK (B) SNACK

(C) SNACK (D) SNACK

40. AFGANISTAN

(A) AFGANISTAN (B) AFGANISTAN

(C) AFGANISTAN (D) AFGANISTAN

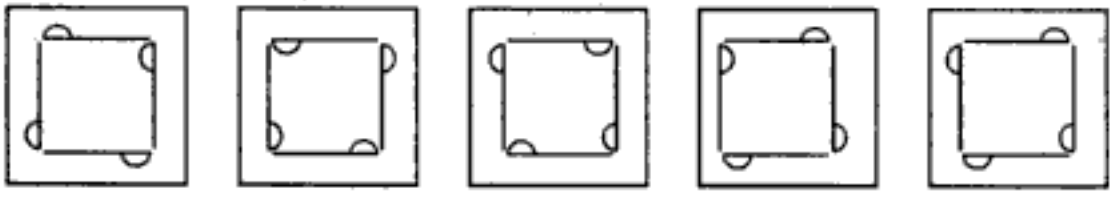
41. T3P2Y5

(A) T3P2Y5 (B) T3P2Y5

(C) T3P2Y5 (D) T3P2Y5

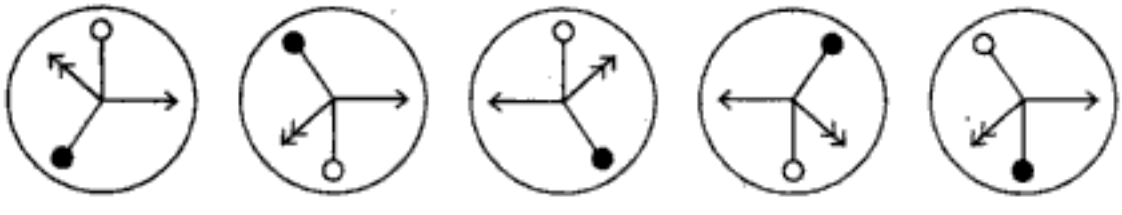
In problems 42 to 44 select the correct water image of fig. (X) from amongst the four alternatives provided with each figure.

42.



(X) (a) (b) (c) (d)

43.



(X) (a) (b) (c) (d)

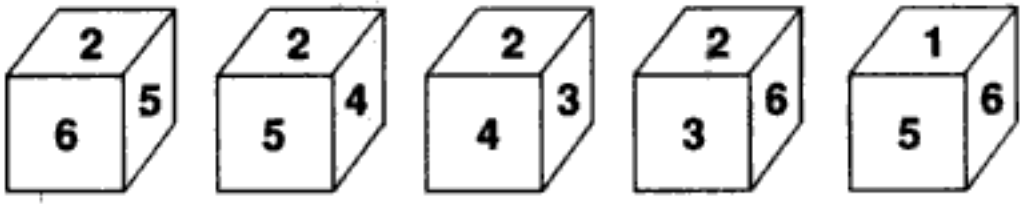
44.

(X) (A) (B) (C) (D)

Directions : Each of the questions 45 to 48 has 5 views of some cubes. Determine how many different cubes are involved in each case. Mark the answers as follows.

(A) If only one cube is involved;
(B) If two cubes are involved;
(C) If three cubes are involved;
(D) If four cubes are involved;
(E) If five cubes are involved.

45.



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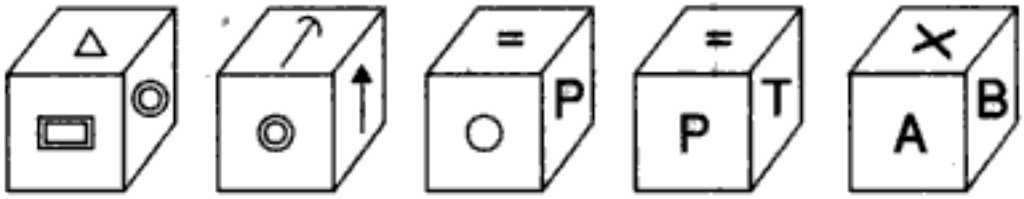

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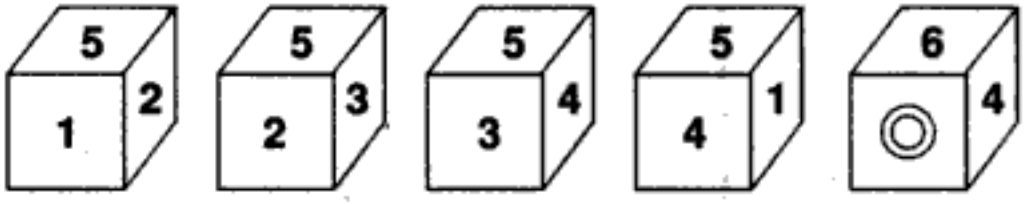
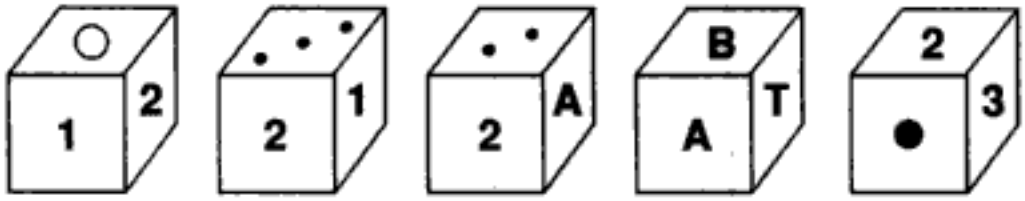
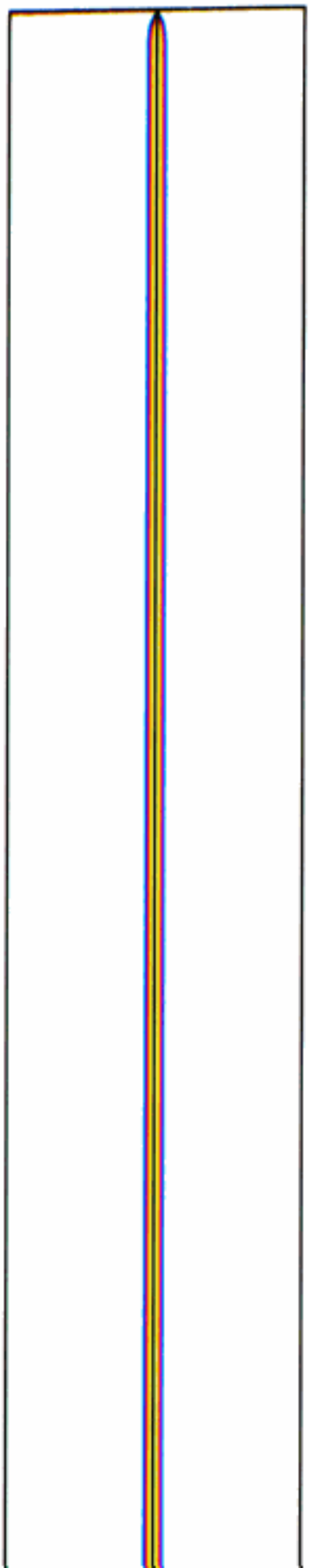


48.



*The procedure for solving this type of questions is by selecting two such cubes which have all the entries different. Now by the combination of these two we obtain 1 cube. Now, imagine this cube to be rotated in different ways to form other cubes one by one. In case it can not be placed in any one of these ways, then the new cube is combined with another one to form a complete cube. The procedure is continued to get all the different cubes involved.

Direction : ***Questions 49 to 51 are based on the following figure.***



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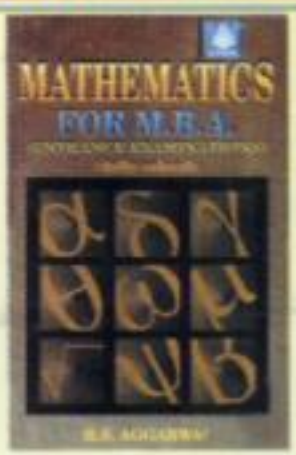
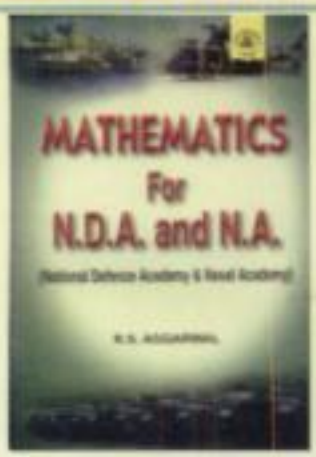


R.S. Aggarwal



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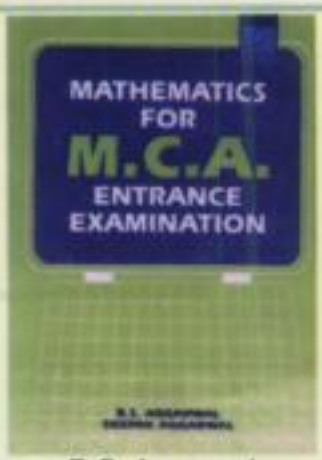
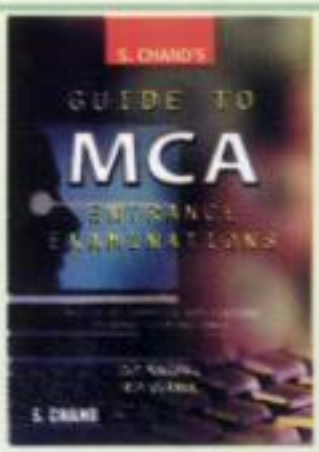


R.S. Aggarwal
Deepak Aggarwal



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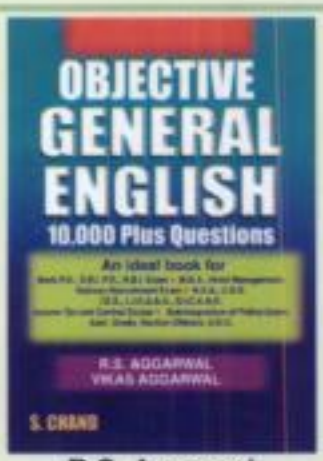
R.P. Verma



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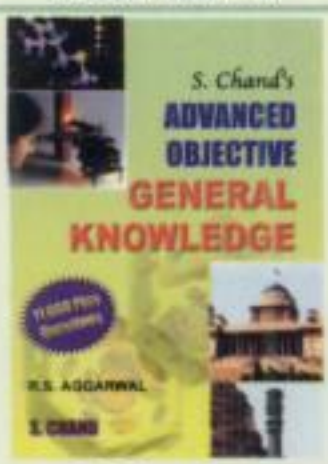
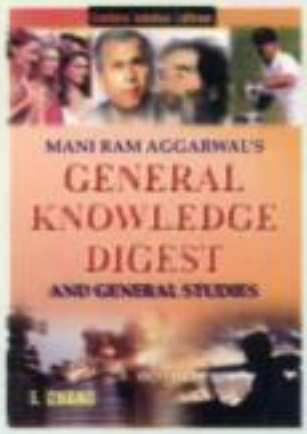
Vikas Aggarwal



R.S. Aggarwal



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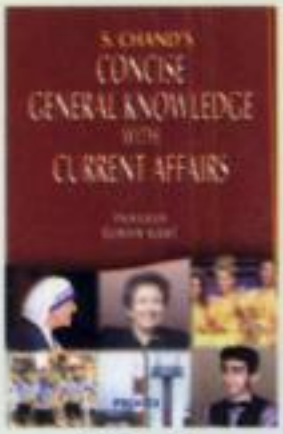
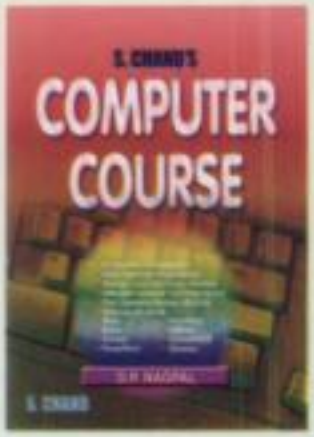


Prakash
Suman Kant



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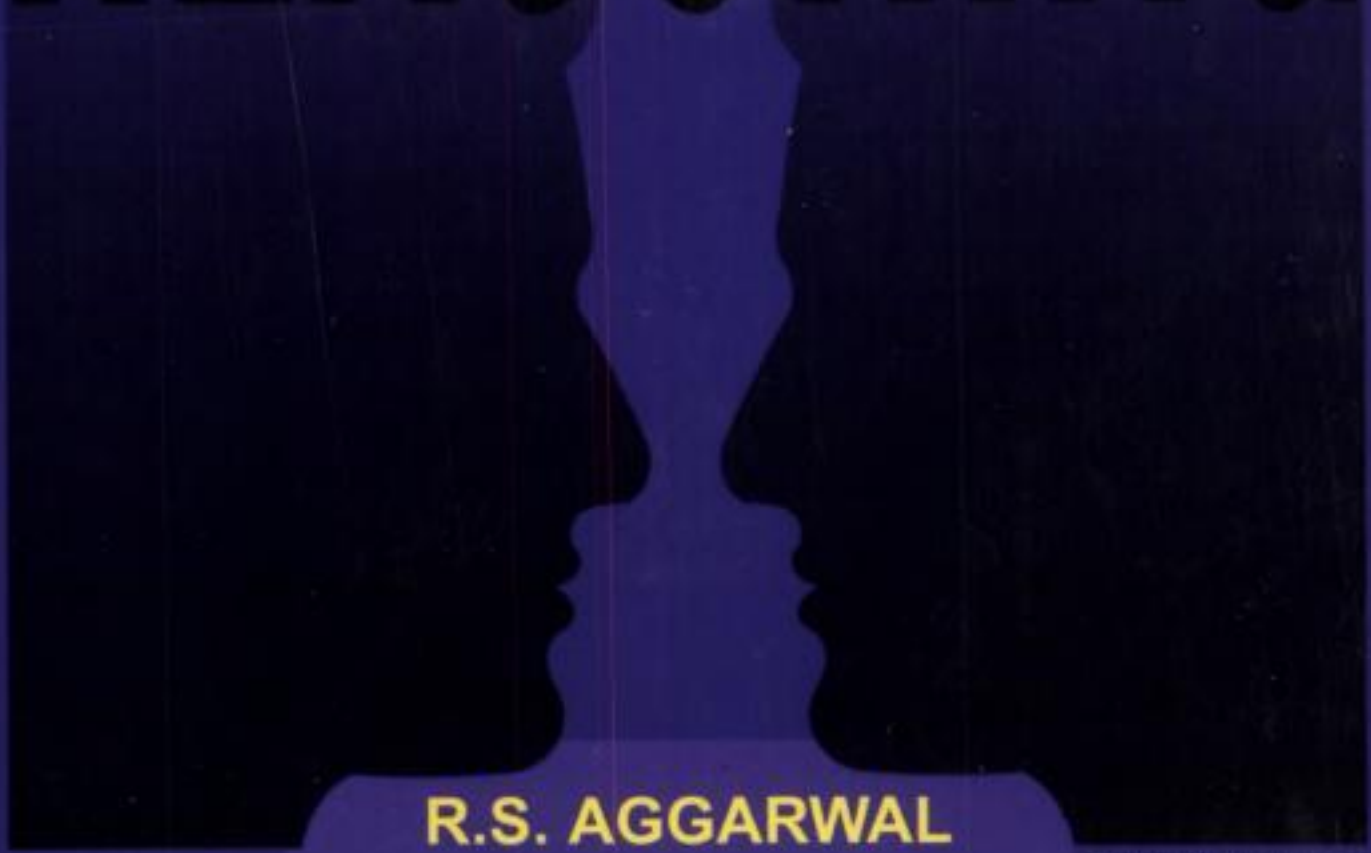

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