DEPARTMENT OF SCHOOL EDUCATION – TIRUVANNAMALAI DISTRICT

National Means-cum-Merit Scholarship (NMMS) EXAM-2023-24

PART-I MENTAL ABILITY TEST (MAT)

(Model Exam-4 For students of class VIII)

Time: 90 min.   Max marks: 90

Direction: (Questions 1 to 7)

In each question, the numbers/letters are arranged based on some pattern or principle. Choose the correct answer for the term marked by the symbol (?)

1. **12, 60, 240, 720, ?**

   (1) 1440   (2) 1420   (3) 1400   (4) 1460

2. **0, 3, 8, ? , 24, 35**

   (1) 16   (2) 18   (3) 15   (4) 9

3. **1, 244, 163, 190, 181, ?,**

   (1) 188   (2) 198   (3) 221   (4)184

4. **2, 8, 20, 44, ?, 188, 380**

   (1) 20   (2) 48   (3) 92   (4) 2

5. **8, 6, 9, 23, ?**

   (1) 75 (2) 110 (3) 145 (4) 87

6. **Y, B, T, G, O, ?**

   (1) M   (2) N   (3) K   (4) L

7. **ba_ba_bac_acb_cbac**

   (1) bbca (2) ccba (3) cbac (4) aacb
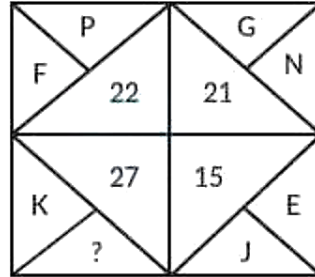
Direction: (Question No: 8 - 12)

In each of the following figures, numbers are written according to some patterns. One number is missing. Find the missing number that replaces the question mark (?).

8.

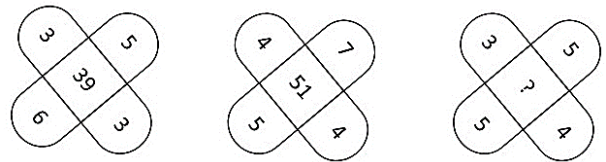   (1) 32   (2) 31   (3) 20   (4) 4

9.

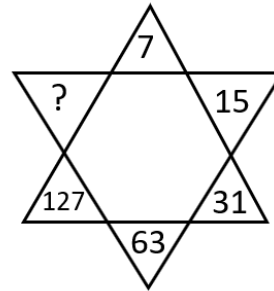   (1) M   (2) P   (3) Q   (4) S

10.

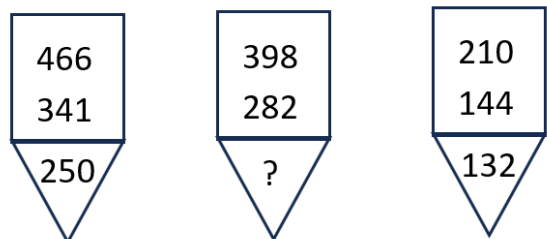
   (1) 37   (2) 35   (3) 45   (4) 47

11.

   (1) 254   (2) 255   (3) 189   (4) 252

12.

   (1) 298   (2) 268   (3) 232   (4) 350

Direction: (Question No: 13 - 17)

Each question consists of four groups. One group is different from the other three in some way. Find out the different group.

13. (1) Goat   (2) Tiger
    (3) Deer   (4) Cow

14. (1) 13   (2) 19
    (3) 27   (4) 31

15. (1) CEDF   (2) GIHJ   (3) KLMN   (4) OQPR

16. (1) 4,8   (2) 9,64
    (3) 25,125   (4) 36,216

17. (1) Z   (2) E   (3) M   (4) B

Direction: (Question No: 18 - 22)

In the following questions, there are three words. The first two words to the left of (::) are related in some way. The same relationship holds between the third word to the right of the sign (::) and of the responses (1), (2), (3) or (4). Identify the correct related word.

18. **Sun : Star** :: **Moon : __**
    (1) Star   (2) Planet
    (3) Comet   (4) Satellite

19. **Horses : Neigh** :: **Camels : ?**
    (1) Grunt   (2) Chortle
    (3) Whine   (4) Roar

20. **Temperature : Degree :: Time : ?**
    (1) Meter   (2) Liter
    (3) Second   (4) Newton

21. **ABD : CEF :: MNP :_____**
    (1) EFH   (2) LMO
    (3) OPR   (4) NPQ

22. **196: __:: 563: 7**
    (1) 10   (2) 14   (3) 3   (4) 8

23. In a certain code language "TEARS" is written as "UGDVX", then "SMILE" would be written as:
    (1) TOLPJ   (2) TOLNG
    (3) TOJPJ   (4) TOKNH

24. If in a certain language if ENTRY is coded as 12345 and STEADY is coded as 931785, then state which is the correct code for below word. NEATNESS
    (1) 25196577   (2) 21732199
    (3) 21362199   (4) 21823698

25. If in a code language, COULD is written as BNTKC and MARGIN is written as LZQFHM, how will MOULDING be written in that code ?
    (1) CHMFINTK   (2) LNKTCHMF
    (3) LNTKCHMF   (4) NITKHCMF

26. If 'L' stands for '+' , 'M' stands for '-' , N stands for 'x' , P stands for '÷' then
14 N 10 L 42 P 2 M 8 = ?
    (1) 153   (2) 216
    (3) 248   (4) 251

27. If **FOUR** is written as 6518, then what is code for **WIND?**
    (1) 3044   (2) 3054
    (3) 3944   (4) 3954

28. If **NOTEBOOK** is coded as **REGOLEEN**, and **SHIRT** as **XYZBG**, then **TORN** is coded as
    (1) GZBR   (2) GEBN
    (3) GEBR   (4) GOBR

29. In a certain code, '247' means 'spread red carpet' ; '256' means 'dust one carpet' and '236' means 'one red carpet'. Which digit in that code means 'dust' ?
    (1) 2   (2) 3   (3) 5   (4) 6

30. If PAGE' is coded as '161495'. How will 'PART' be coded as in that language?

(1) 16125020 (2) 16132420

(3) 16128620 (4) 16136220

31. Find the words which can be made from the letters of the given word : CHOCOLATE

(1) TELL (2) HEALTH

(3) LATE (4) COOLER

32. Which can not be formed using the letters of the given word ? **CONCEPTUALIZATION**

(1) Actual (2) Petrol

(3) Total (4) Petal

33. Arrange the given words in a meaningful sequence.

1. Leaf 2. Fruit 3. Stem

4. Root 5. Flower

(1) 1, 3, 4, 5, 2 (2) 2, 3, 5, 4, 1

(3) 2, 3, 4, 1, 5 (4) 4, 3, 1, 5, 2

34. From the word 'LAPAROSCOPY' how many independent meaningful words can be made without changing the order of the letters and using each letter only once ?

(1) 3 (2) 4 (3) 1 (4) 2

35. Arrange the following words as per order in the dictionary.

1.Situation 2.Silver 3.Sitter 4.Simple 5.Signal

(1) 5, 1, 3, 2, 4 (2) 1, 4, 2, 5, 3

(3) 5, 2, 4, 3, 1 (4) 4, 2, 1, 5, 3

Direction: (Question No. 36 - 40)

There are given seven logical diagrams (a, b, c, d, e, f and g). Select one which best illustrates

(A) (B) (C) (D)

(E) (F) (G) (H) (I)
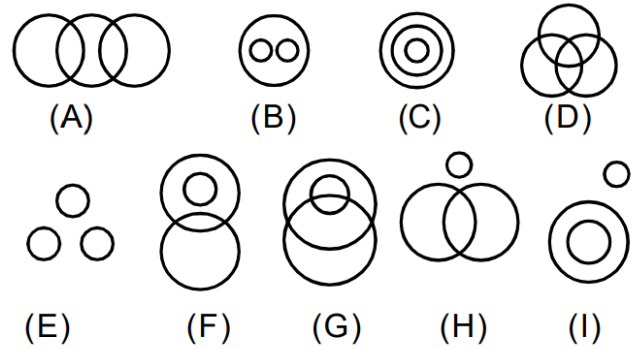
the relationship among three classes in each of the following question.

36. School, Teachers, Students

(1) C (2) D (3) B (4) E

37. Jewells, Gold, Silver

(1) D (2) E (3) A (4) C

38. Females, Mothers, Engineers

(1) D (2) E (3) H (4) G

39. Writers, Lawyers, Singers

(1) A (2) D (3) F (4) H

40. English, Tamil, Hindi

(1) B (2) C (3) D (4) E

Direction: (Question No. 41 to 45)

In the following figure

Square - Persons interested in drawing paintings

Rectangle - Persons interested in games

Triangle - Persons interested in Dance

Circle - Persons interested in Drama Act

Study the diagram given below and answer each other following questions
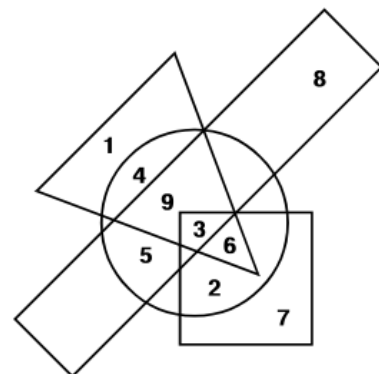
41. The persons who are interested in Dance and Drama but NOT interested in painting and games.

    (1) 1   (2) 4   (3) 5   (4) 3

42. The persons who interested in all......

    (1) 3   (2) 6   (3) 2   4) 3

43. The number of persons who interested in any of the art is........

    (1) 15   (2) 20   (3) 16   (4) 21

44. The number of persons who are not interested in drawing paintings but interested in games

    (1) 22   (2) 25   (3) 26   (4) 7

45. The persons who are interested in at least three activities.......

    (1) 3   (2) 6   (3) 9   (4) 18

46. if × stands for 'addition', ÷ stands for 'subtraction', + stands for 'multiplication' and-stands for 'division', then 20 × 8 ÷ 8 - 4 + 2 = ?

    (1) 80   (2) 25   (3) 24   (4) 5

47. If Q means 'add to', J means 'multiply by', T means 'substract from' and K means 'divide by' then 30 K 2 Q 3 J 6 T 5 = ?

    (1) 18   (2) 28   (3) 31   (4) 103

48. Which of the following interchanges in signs and numbers will make the given equation correct?

    8 x 9 + 2 ÷ 4 = 20

    (1) x and =, 2 and 9   (2) x and +, 8 and 2

    (3) ÷ and x, 8 and 9   (4) + and =, 20 and 2

49. MOHAN and MAYA are ranked seventh and eleventh respectively from the top in a class of 31 students. What will be their respective ranks from the bottom in the class ?

    (1) 25th & 21st   (2) 26th & 22nd

    (3) 20th & 24th   (4) 24th and 20th

50. If a 'Room' is called 'Bed', 'Bed' is called 'Window'. 'Window' is called 'Flower' and 'Flower' is called 'Cooler', on which would a man sleep?

    (1) Window (2) Bed (3) Flower (4) Cooler

51. D is the son of 'E' who is son of 'F'.P is daughter of 'R'. If N is the sister of P and daughter of 'E'-s relationship with 'R'?

    (1) Brother   (2) Father

    (3) Husband   (4) Uncle

52. Pointing to a boy, Kannan says, "He is the son of my mother's only son". The relationship of Kannan to that boy is

    (1) Brother   (2) Son

    (3) Father   (4) Grand father

53. Aashmi walks 8 km towards East and then walks 13 km back, then she turns left and walks 4 km; then walks 5 km after turning left; she turns left again and walks 3 km. How far is she from the starting point ?

    (1) 3 km (2) 1 km   (3) 2 km   (4) 6 km

54. Pandiyan is 5 times older than her sister Latha who is 2 years less than her brother Vengat. If Vengat is 10 years old. Then what will be the age of Pandiyan?

    (1) 56   (2) 42

    (3) 40   (4) 35

55. Find the number of triangles in the following figure
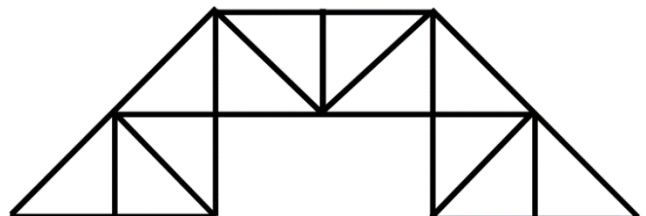
    (1) 12   (2) 21   (3) 22   (4) 2

56. Perumal is taller than Alwin but shorter than Mani. Govind is shorter than Aarish and Aarish is not as tall as Alwin. If they are made to stand in a row according to their height, who will be in the middle?

(1) Mani (2) Alwin (3) Perumal (4) Aarish

57. How many pairs of successive numbers have a difference of 3 in the following number sequence?

8 5 1 7 6 3 4 8 5 9 3 4 1 9 6

(1) 3   (2) 4   (3) 5   (4) 6

Direction: (Question number 58 - 62)

A, B, C, D, E and F are sitting in a Circular table facing each one.

i) C is between A and E

ii) B is between D and F

iii) E and D sits opposite to each other

iv) F is immediate right to B.

58. Who is immediate right to C?

(1) A (2) E (3) D (4) B

59. Who is second to the right of A?

(1) D (2) B (3) F (4) E

60. Who is facing B?

(1) A (2) E (3) C (4) D

61. Who is facing F?

(1) D (2) C (3) B (4) A

62. Who is the immediate left of E?

(1) F (2) C (3) A (4) D

63. If in the alphabet series the first and the second letters interchange their positions and similarly the third and the fourth letters, the fifth and the sixth letters and so on, which letter will be the 17th from your right?

(1) H   (2) I   (3) F   (4) J

64. Today is Sunday. The day after 42 days is

1) Saturday 2) Sunday 3) Friday 4) Monday

65. What is the angle between the 2 hands of the clock at 8.24 am?

(1) 100^0 (2) 108^0 (3) 106^0 (4) 107^0

Direction: (Question Number 66 - 70)

In the following questions, there are five teachers, **A, B, C, D and E teach the following**.

(i) A and B teach History, Civics and Mathematics

(ii) C and B teach Geography, Mathematics and Economics subject.

(iii) D and A teach Economics, History and Civics subject.

(iv) E and D teach History, Geography and Economics subject.

Choose the correct alternative from given below alternatives.

66. Which subject is taught by all teachers.

1) History   2) G e o g r a p h y

3) Civics   4) Economics

67. Who teaches all the subject?

1) A   2) B   3) C   4) D

68. Which subject is not teaching by D?

1) Geography 2) Civics 3) Economics 4) Mathematics

69. Which subject is not teaching by A?

1) History 2) Geography 3) Civics 4) Economics

70. Which subject is teaching by E and C jointly?

1) Geography and History

2) History and Economics

3) Economics and Mathematics

4) Economics and Geography

Direction: (Question No.: 71 - 74)

The following questions are based on the figures in series. Pick from the options what will come next.
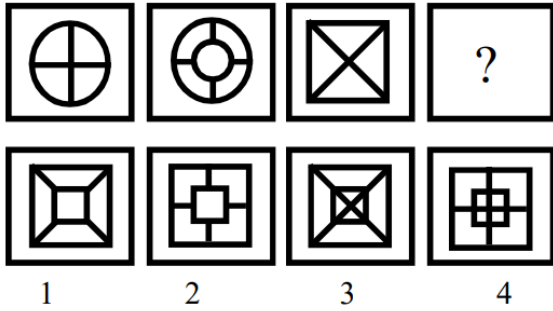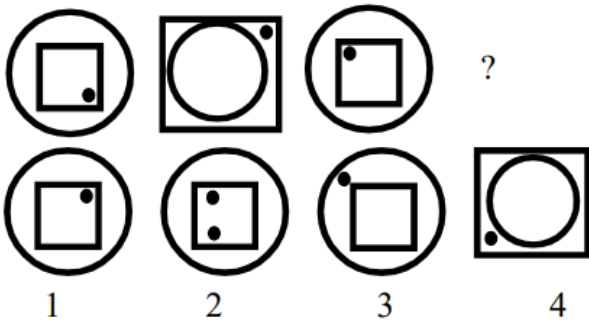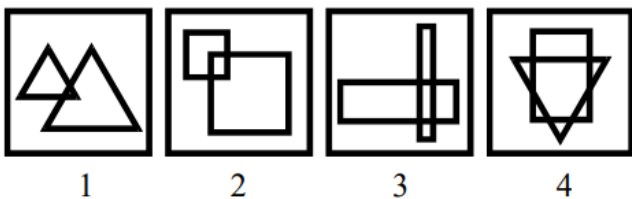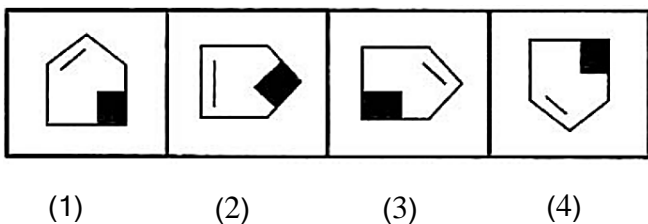
71.
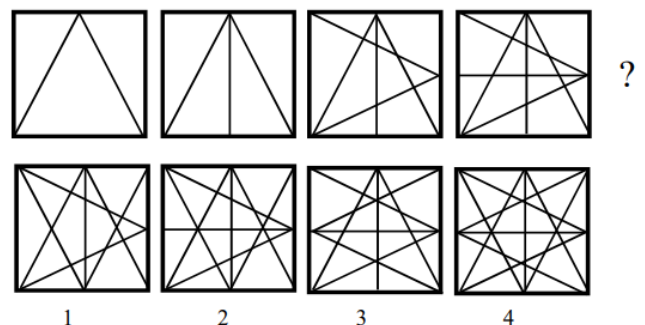
72.
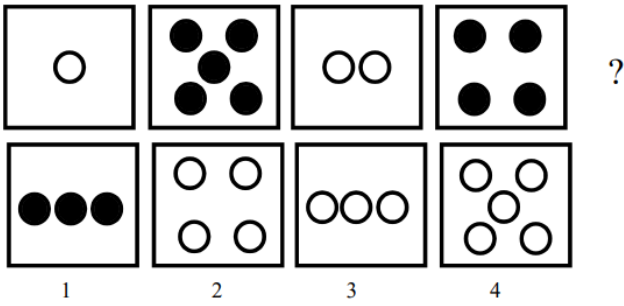
73.

74.

Direction: (Question Number 75 - 78)

Find the figure which is not matching with others.

75.

76.

(1)　　　　(2)　　　　(3)　　　　(4)

77.

(1)　　　　(2)　　　　(3)　　　　(4)

78.

(1)　　　　(2)　　　　(3)　　　　(4)
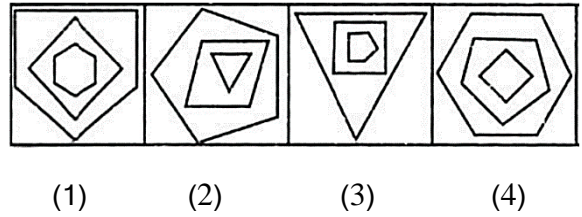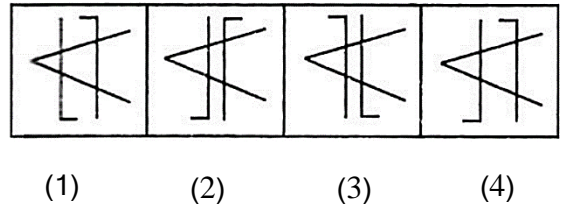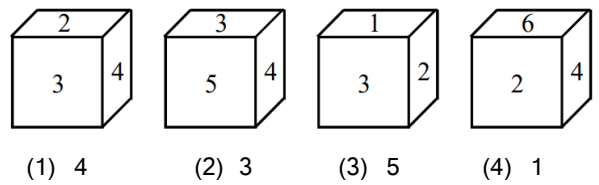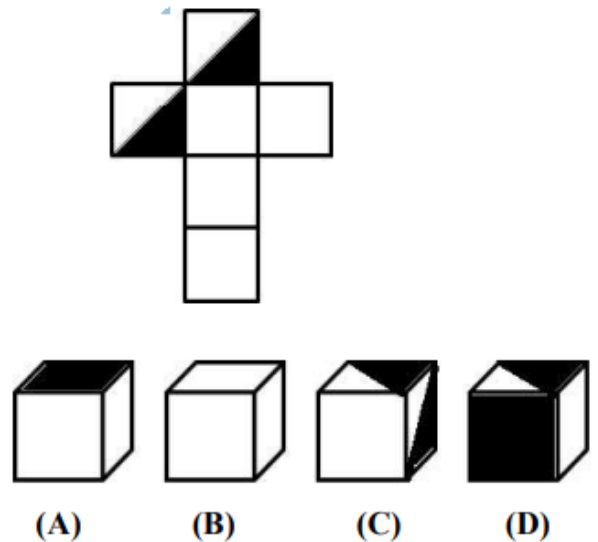
79. Four different positions of dice are shown below. Find out which number is found opposite to the number 2 given in the cube ?
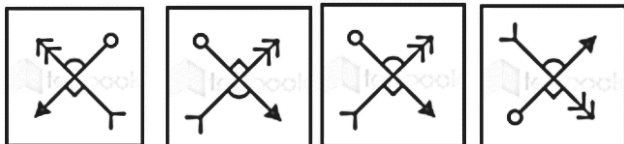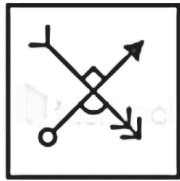

(1) 4　　　(2) 3　　　(3) 5　　　(4) 1

80. Choose from the alternatives the boxes that can be formed when figure is folded.

(A)　　　(B)　　　(C)　　　(D)

(1) A and B　　(2)　　B only

(3) B and D　　(4)　　C and D

81. Find the water image of (image)

(1) (2) (3) (4)

Direction: (Question No: 82 - 85)

In the each of the given figures, there is a relationship between first two figures (A) and (B). The same relation is between the next two figures (C) and (D), but one is missing. Find the missing figure from the given alternatives.
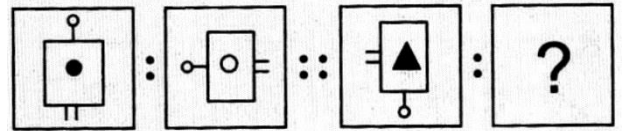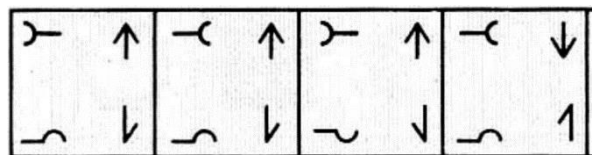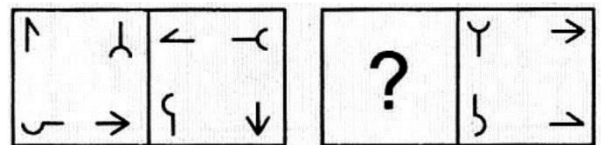
82.
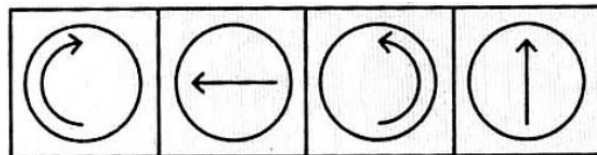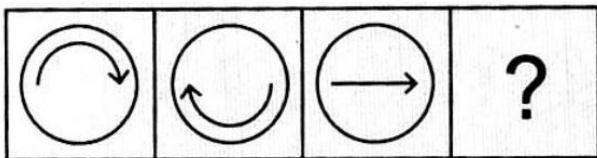
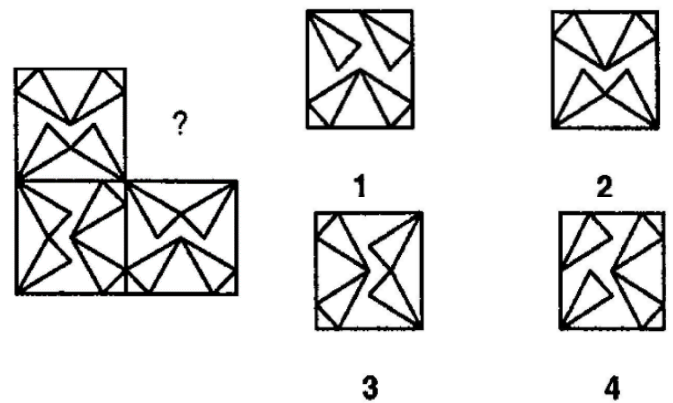
(1) (2) (3) (4)

83.
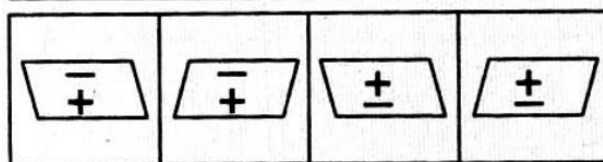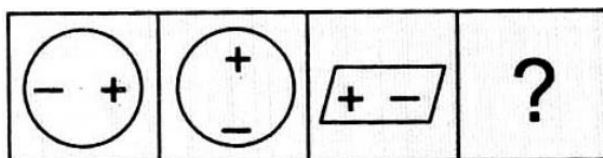
(1) (2) (3) (4)
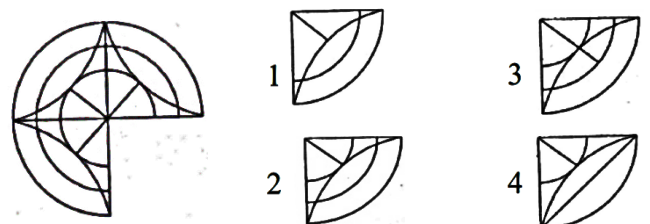
84.
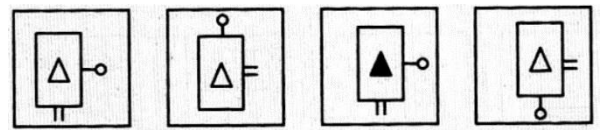
(1) (2) (3) (4)

85.

(1) (2) (3) (4)

Direction: (Question Number 86 - 87)

In the following figures, a part of the figure is missing. Identify the missing part among the four alternatives given:
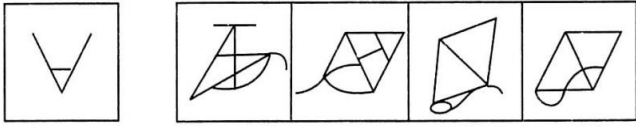
86.

1 2 3 4

87.

1 2 3 4

88. The given figure (x) is followed by four figures 1, 2, 3, and 4 such that (x) is embedded in one of them. Trace out the correct alternatives.
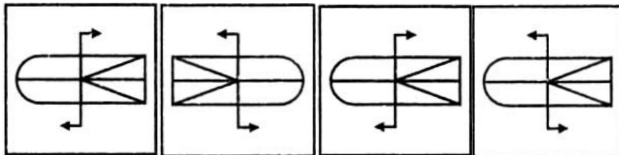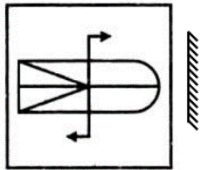

X   (1)   (2)   (3)   (4)

89. The mirror image of following word is

(1) ЯОЯЯ MI   (2) ЯЯOЯ IM

(3) RORRIM   (4) ЯOЯЯIM

90. The mirror image of the following figure is

(1)   (2)   (3)   (4)