

DEPARTMENT OF SCHOOL EDUCATION – TIRUVANNAMALAI DISTRICT

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

PART-I MENTAL ABILITY TEST (MAT)

(Model Exam-2 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. **0, 7, 26, ?, 124, 215**
(1) 63 (2) 80 (3) 64 (4) 48
2. **300, 5, 60, 25, _____, 125**
(1) 1 (2) 12 (3) 6 (4) 625
3. **4, 7, 11, 18, 29, 47, ? , 123, 199**
(1) 71 (2) 82 (3) 76 (4) 77
4. **2, 10, 30, 68, , 222**
(1) 120 (2) 130 (3) 134 (4) 150
5. **3, 6, 24, 30, 63, 72, ?, ?, 195,210**
(1) 117,123 (2) 120,132 (3) 123,135 (4) 135,144
6. **NRJ, PNP, RJV, _____**
(1) BFT (2) TBF (3) TFB (4) BTF
7. **babc _ abbccc _ cdbbc _ dddc _ eccdde**
(1) adcd (2) abcd (3) bc dc (4) babd

Direction: (Question No: 8 - 12)

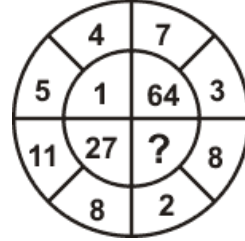
In each of the following figures, numbers are written according to some patterns. One number is missing. Find the missing number that replaces the question mark (?).

8.

36	13	31
28	10	24
18	23	?

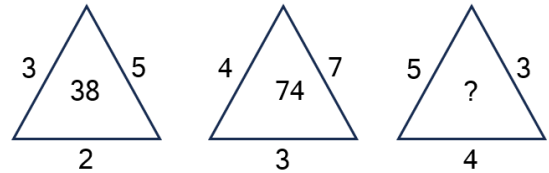
- (1) 18 (2) 23 (3) 43 (4) 32'

9.



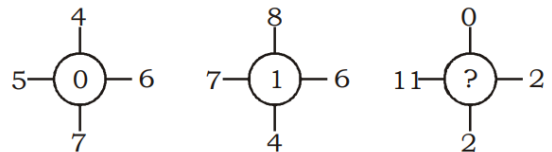
- (1) 1 (2) 25 (3) 125 (4) 216

10.



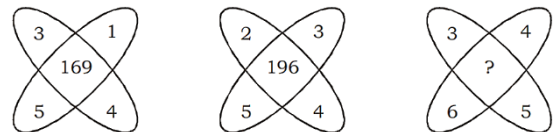
- (1) 48 (2) 50 (3) 49 (4) 55

11.



- (1) 0 (2) 2 (3) 11 (4) 12

12.



- (1) 324 (2) 225 (3) 256 (4) 289

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) Kilometer (2) Centimeter
(3) Liter (4) Light year

14. (1) 196, 14 (2) 290, 17
 (3) 400, 20 (4) 361, 19
15. (1) AE48 (2) GK36 (3) RV24 (4) DI41
16. (1) $(10)^3$ (2) $(100)^3/10$
 (3) $2^3 \times 5^3$ (4) $2000 \div 2$
17. (1) Pond (2) River (3) Stream (4) Brook

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. Guitar : Music :: Book : ?
 (1) Pages (2) Writer
 (3) Publisher (4) Knowledge
19. Heart : Blood :: Lung : ?
 (1) Oxygen (2) Chest
 (3) Purification (4) Air
20. CAT : MOUSE :: BIRD : ?
 (1) Cage (2) Trap
 (3) Eagle (4) Worm
21. REASON : SFBTPO :: THINK : ?
 (1) SGHMJ (2) UIJOL
 (3) UHNKI (4) UJKPM
22. 1331 : 122 :: 1728 : ?
 (1) 125 (B2) 186 (3) 114 (4) 145
23. If SLEEP is coded as XMKKB, SPEAR is coded as XBKOY and PULL as BFMM, how would you decode PLEASURE?
 (1) KMNOXYZ (2) BMOKXFYK
 (3) BMKXFYK (4) MOKXB

24. If 312534 stands for RECORD, then 353 stands for
 (1) ROD (2) COR
 (3) ROC (4) ROR
25. If "MOON" is coded 13151514, then "SUN" will be coded as
 (1)14218 (2) 8613
 (3)191421 (4)192114
26. In a certain code language, "TURTLE" is written as "RRNRIA", How is "LOYALS" written in that code language?
 (1) JLUYIO (2) ULJOPY
 (3) YOKLJU (4) UJLOIP
27. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code?
 (1) EJKNEGTP (3) EGKNFITP
 (3) EJKNFGTO (4) EJKNFTGP
28. If PLOT is 5321, TAKE is 1790 and PINK is 5469, what is PLATE?
 (1) 35710 (2) 53710 (3) 53701 (4) 53071
29. If 'Water' is called 'Blue', 'Blue' is called 'Red', 'Red' is called 'White', 'White' is called 'Sky', 'Sky' is called 'Rain', 'Rain' is called 'Green' and 'Green' is called 'Air'. Which of the following in the colour of Milk?
 (1) White (2) Green (3) Sky (4) Rain
30. If EARTH is 12347, TRACE is 43251, FARCE is 92351, then what is FACT?
 (1) 9254 (2) 9524 (3) 9245 (4) 9425
31. Find the word that cannot be made using the letters of the word CONTEMPORARY.
 (1) PARROT (2) COMPANY
 (3) CARPENTER (4) PRAYER

Direction: (Question No. 32)

In the following question, a word has been given followed by four other words are of which can be formed by using the letters of the given word. Find that word.

32. COMPENSATION

- (1) TINY (2) COPY
(3) MENTION (4) MOTIVE

33. A meaningful word ending with A is made from the first, second, fourth, fifth and sixth letter of the word 'CONTRACT'. Which of the following is the middle letter of the word?

- (1) C (2) O (3) R (4) T

34. Arrange the following words in a meaningful sequence:

1. Milky way 2. Sun 3. Moon 4. Earth 5. Stars

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

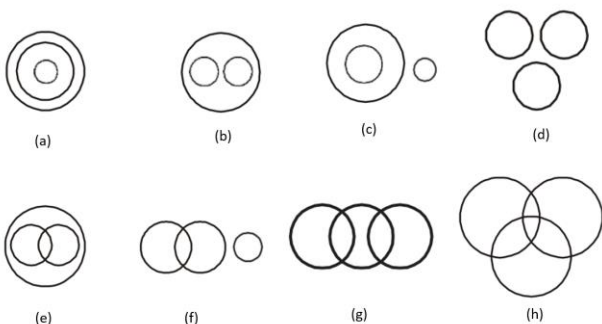
35. The correct arrangement of alphabetical order of the words.

- a. Book b. Bread c. Butler d. Bayern e. Bulb

- (1) d, a, b, e, c (2) e, a, c, d, b
(3) d, c, e, a, b (4) d, c, b, a, e

Direction: (Question No. 36 - 40)

There are given seven logical diagrams (a, b, c, d, e, f and g). Select one which best illustrates the relationship among three classes in each of the following question.



36. hospital : bed : patient

- (1) a (2) e (3) b (4) c

37. Ocean, Ship, Sailor

- (1) b (2) g (3) d (4) a

38. Teacher, Writer, Musician

- (1) f (2) a (3) h (4) e

39. India, China, Britain

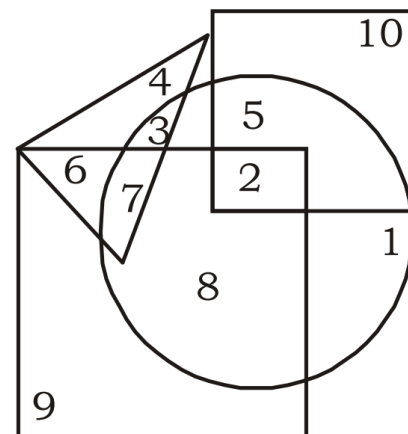
- (1) a (2) g (3) f (4) d

40. Sweets, Rasagulla, Apple

- (1) e (2) g (3) d (4) c

Direction: (Question No. 41 to 45)

In the following figure small square represents the persons who know English, triangles who know Telugu, big square who know Tamil and circle who know Hindi. Study the diagram given below and answer each other following questions



41. How many persons can speak English and Hindi both?

- (1) 5 (2) 8 (3) 7 (4) 1

42. How many persons can speak Tamil and Hindi both?

- (1) 8 (2) 15 (3) 10 (4) 17

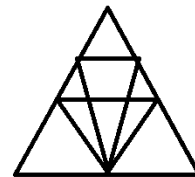
43. How many persons can speak only English?

- (1) 9 (2) 10 (3) 7 (4) 8

44. How many persons can speak English, Hindi and Tamil?
 (1) 8 (2) 2 (3) 7 (4) None of these
45. How many persons can speak all the language?
 (1) 1 (2) 8 (3) 2 (4) None of these
46. If '+' means '-', '-' means '÷', '÷' means '+', and '-' means 'x', which will be the value of $96 \times 12 - 4 + 13 \div 21 = ?$
 (1) 42 (2) 40 (3) 37 (4) 333
47. If L denotes \times , M denotes \div , P denotes + and Q denotes -, then find the value of:
 $16 P 24 M 8 Q 6 M 2 L 3$
 (1) 6 (2) 8 (3) 10 (4) 12
48. The given equation becomes correct when symbols and number are interchanged as given in one of the options. Find the correct option
 $27 \div 3 - (4 + 7) \times 18 = -1$
 (1) \div and \times (2) + and -
 (3) - and \div (4) \times and +
49. If the following series is written in reverse order, then which will be 12th letter to the left of 10th letter from your right?
 A B C D E F G H I J K L M N O P Q R S
 T U V W X Y Z
 (1) X (2) U (3) Y (4) W
50. If "Nurse" is called "Doctor", "Doctor" is called "Manager", "Manager" is called "Teacher", "Teacher" is called "Engineer", "Engineer" is called "Dictator", then who teaches the class?
 (1) Manager (2) Doctor (3) Engineer (4) Teacher
51. Pointing to a girl in the photograph, Ramesh said "Her mother's brother is the only son of my mother's father." How is the girl's mother related to Ramesh?
 (1) Mother (2) Sister
 (3) Aunt (4) Grandmother

52. A is paternal uncle of B, B is daughter of C, C is the wife of D's son. Then how is A related to D?
 (1) Brother (2) Son
 (3) Father (4) Maternal uncle.
53. In a line of girls if Kamla's position from the left is 15th and from the right her position is 17th, how many girls are there in the line?
 (1) 20 (2) 21 (3) 31 (4) 36
54. A lady walks 10 kms West, then turns South and walk 4 km, then turns East and walk 10 kms, then turns to her right and walks 2 kms. Where is she now with reference to her starting position?
 (1) 6 kms North (2) 6 kms South
 (3) 2 kms South (4) 2 kms South

55. Find the number of **Triangles** in the following figure



- (1) 12 (2) 18 (3) 22 (4) 26
56. 2 mangoes = 6 apple, 2 apple = 8 bananas, so instead of buying 1 mango, how many bananas are available?
 (1) 12 (2) 24 (3) 6 (4) 8
57. Direction: The following question are based on the number series given below.
 2 4 5 6 7 9 10 13 16 18 19 21 24 25 28 29
 30 34 37 39 41 49 55
 If all the odd numbers are deleted from the following arrangement, which element will be present exactly between the one which is 5th from left end and the one which is 4th from right end?
 (1) 10 (2) 28 (3) 16 (4) 18

Direction: (Question number 58 - 62)

Select the combination of numbers so that letters arranged accordingly will form a meaningful

58. B L I P U S H
1 2 3 4 5 6 7
(A) 4, 5, 1, 2, 6, 3, 7 (B) 4, 5, 3, 2, 1, 6, 7
(C) 1, 2, 3, 4, 6, 6, 7 (D) 4, 5, 1, 2, 3, 6, 7
59. H L R A O C S
1 2 3 4 5 6 7
(A) 1, 2, 3, 4, 5, 6, 7 (B) 7, 6, 5, 1, 4, 2, 3
(C) 7, 6, 1, 5, 2, 4, 3 (D) 7, 6, 5, 1, 2, 4, 3
60. I K E S R T
1 2 3 4 5 6
(A) 6, 4, 5, 1, 2, 3 (B) 4, 6, 5, 1, 2, 3
(C) 6, 5, 4, 3, 2, 1 (D) 1, 2, 3, 4, 5, 6
61. M B L A L R U E
1 2 3 4 5 6 7 8
(A) 7, 1, 2, 6, 8, 3, 5, 4
(B) 1, 2, 3, 4, 5, 6, 7, 8
(C) 8, 7, 2, 1, 4, 5, 3, 6
(D) 1, 2, 3, 6, 7, 8, 4, 5
62. R G O S I E A N
1 2 3 4 5 6 7 8
(A) 3, 8, 7, 4, 5, 6, 1, 2
(B) 3, 2, 1, 5, 8, 7, 4, 6
(C) 3, 1, 2, 8, 7, 4, 5, 6
(D) 3, 1, 2, 7, 8, 5, 4, 6
63. How many 6's are there in the following number series, which are preceded by 5 but not followed by 7?
56765649276743568649567
(1) One (2) Two (3) Three (4) Four
64. If the first day of a leap year is Monday, then what will be on the last day of that year?
(1) Wednesday (2) Tuesday
(3) Thursday (4) Sunday
65. If South-East becomes North, North East becomes West and so on, what will South-West becomes?
(1) North-East (2) South-West
(3) West (4) East

Direction: (Question Number 66 - 70)

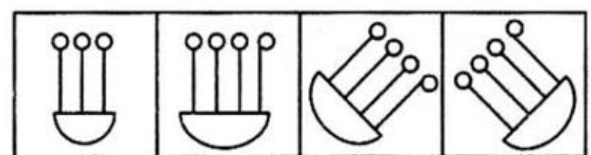
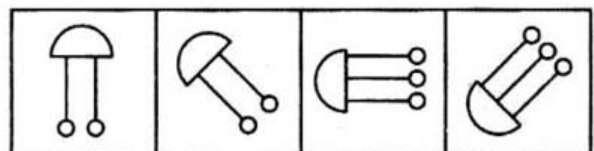
These questions are based on the following information. A, B, C, D, E and F are six persons travelling together in a boat. Three of them B, C and E are women and the rest are men. However, A, B, C and E are all vegetarian and D and F are non-vegetarian. Finally, B, E and F know swimming while the rest do not know how to swim.

66. In a group, who is the non-vegetarian male who does not know swimming?
(1) D (2) F (3) A (4) E
67. In a group, who is the non-vegetarian male who knows swimming?
(1) A (2) B (3) C (4) None of these
68. How many of the vegetarian males in the group known swimming?
(1) None (2) Some (3) All (4) Can't say
69. In the group who is the vegetarian female who knows swimming?
(1) C (2) B (3) A (4) F
70. In the group who is the only female who does not know swimming?
(1) A (2) B (3) C (4) None of these

Direction: (Question No.: 71 - 74)

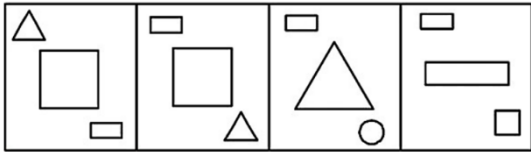
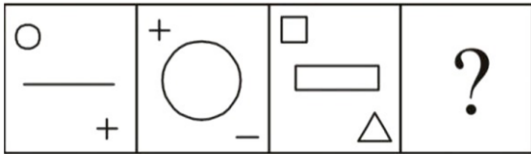
The following questions are based on the figures in series. Pick from the options what will come next.

71.



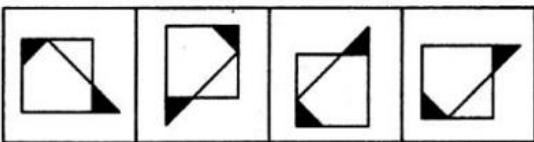
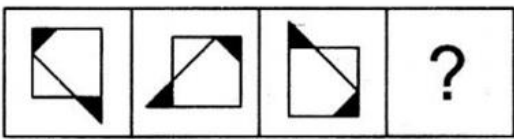
(1) (2) (3) (4)

72.



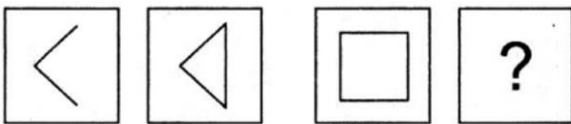
(1) (2) (3) (4)

73.



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

74.

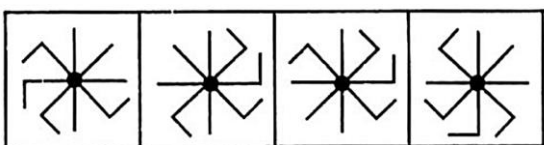


(1) (2) (3) (4)

Direction: (Question Number 75 - 78)

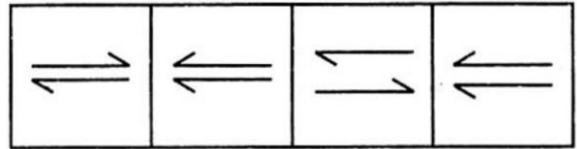
Find the figure which is not matching with others.

75.



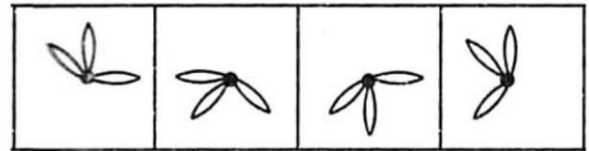
(1) (2) (3) (4)

76.



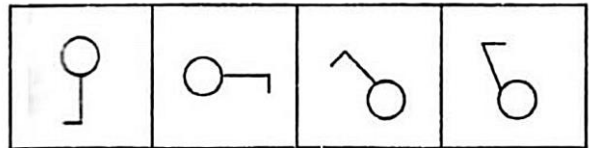
(1) (2) (3) (4)

77.



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

78.



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

79. Three different positions of dice are shown below, Find out which number is found opposite to the number 6 given in the cube?



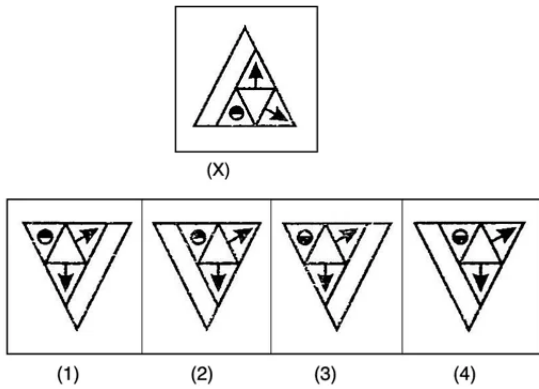
(1) 5 (2) 2
(3) 3 (4) 4

80. How many times in a day, the hands of a clock are straight?

(1) 22 (2) 24
(3) 44 (4) 48

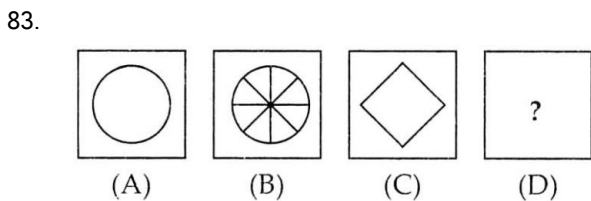
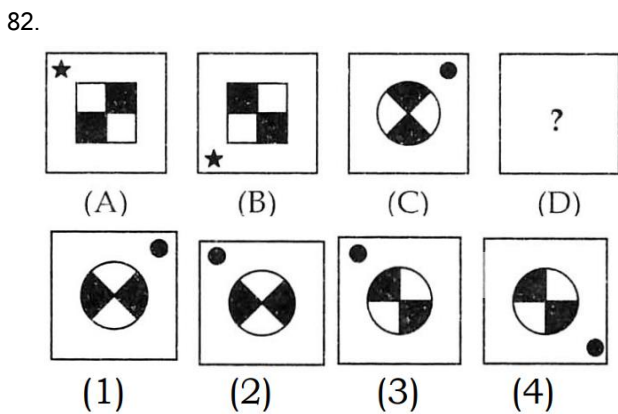
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81. Find the water image of (image) (X)

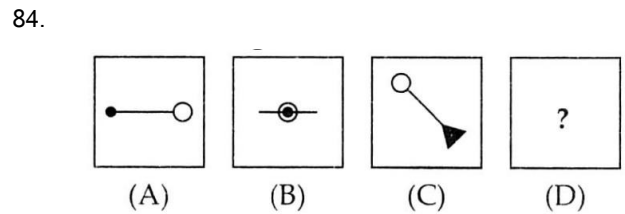
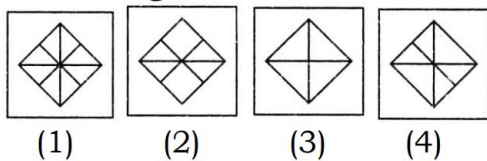


Direction: (Question No: 82 - 85)

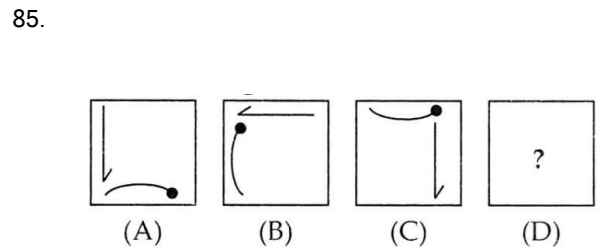
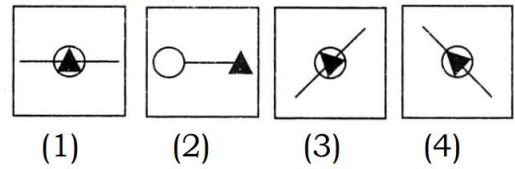
In the each of the given figures, there is a relationship between first two figures (A) and (B). The same relation is between the next two figures (C) and (D), but one is missing. Find the missing figure from the given alternatives.



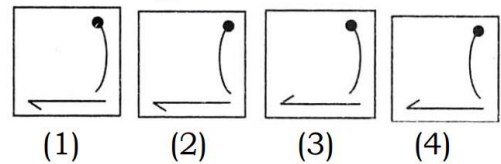
Answer Figure



Answer Figure

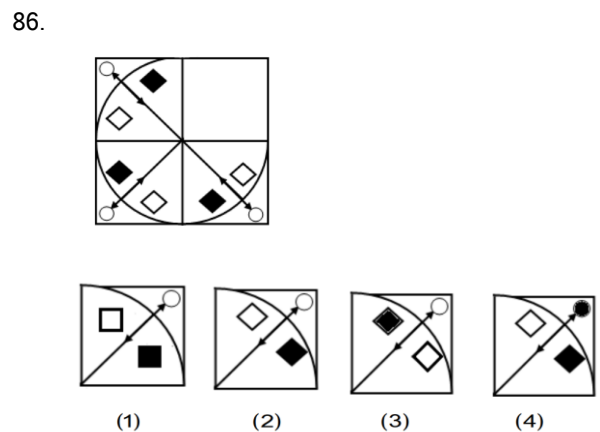


Answer Figure

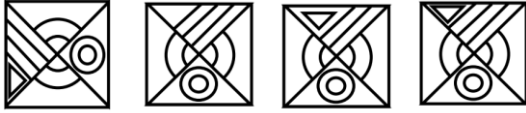
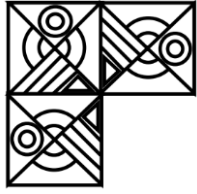


Direction: (Question Number 86 - 87)

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



7.

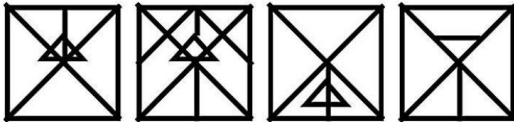


(1) (2) (3) (4)

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)



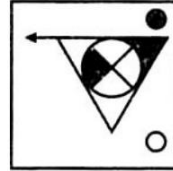
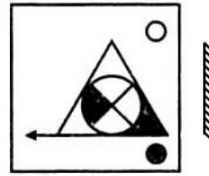
(1) (2) (3) (4)

89. The mirror image of following word is

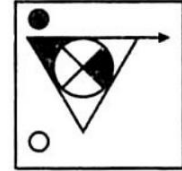
BELIEVE

- (1) BELIEVE (2) BELIEVE
 (3) BELIEVE (4) BELIEVE

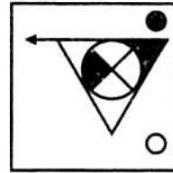
90. The mirror image of the following figure is



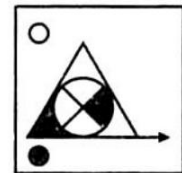
(1)



(2)



(3)



(4)

For Rough Use (Not for Evaluation)

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