Date: 06/11/2016

Max. Marks: 50   **SOLUTIONS**   **Time allowed: 45 mins**

Direction : In each of the questions 1 to 4 a letter series is given with one term missing shown by question mark (?). This term is one of the alternatives among the four groups of letters given under it. Find the right alternative.

1. A,D,G,J _?_ .

(1) I   (2) M   (3) X   (4) None of these

Ans. (2)

Sol. +3 in each letter

2. LO, JQ, HS, _?_ .

(1) FU   (2) FQ   (3) EV   (4) DW

Ans. (1)

Sol.

$$\overset{-2\quad\quad-2\quad\quad-2}{\text{LO, } \quad \text{JQ,} \quad \text{HS,} \quad \text{FU}}$$
$$\underset{+2\quad\;+2\quad\;+2}{}$$

3. A, C, F, J, O, _?_ .

(1) P   (2) T   (3) S   (4) U

Ans. (4)

Sol.

$$\underset{+2\;\;+3\;\;+4\;\;+5\;\;+6}{\text{A, C, F, J, O, U}}$$

4. ZXV, TRP, NLJ, _?_ .

(1) HEF   (2) HFD   (3) EFH   (4) IGE

Ans. (2)

Sol.

$$\overset{-6\quad\;-6\quad\;-6}{\text{ZXV , TRP, NLJ, HFD}}$$
$$\underset{-6\quad\;-6\quad\;-6}{\;\;\;-6\;\;\;-6\;\;\;-6}$$

Direction : In each of the questions 5 to 8 a letter series is given with one term missing shown by question mark (?). This term is one of the alternatives among the four numbers given under it. find the right alternative.

5. 121, 144, 169, _?_ , 225, 256

(1) 196   (2) 296   (3) 220   (4) 222

Ans. (1)

Sol. $11^2, 12^2, 13^2, \underline{14}^2, 15^2, 16^2$

          196

6. 5,10,20, _?_ ,80

(1) 35   (2) 40   (3) 45   (4) 50

Ans. (2)

Sol. 5, 10, 20, 40, 80
$\underbrace{\quad}_{\times 2}\underbrace{\quad}_{\times 2}\underbrace{\quad}_{\times 2}$

7. 4,8,9,27,16 _?_ , 25,125

(1) 8   (2) 16   (3) 25   (4) 64

Ans. (4)

Sol. $2^2, 2^3, 3^2, 3^3, 4^2, \underline{4}^3, 5^2, 5^3$

8. 2,3,5,8, _?_ ,17

(1) 6   (2) 12   (3) 13   (4) 15

Ans. (2)

Sol. 2 3, 5, 8, 12, 17
$\underbrace{\quad}_{+1}\underbrace{\quad}_{+2}\underbrace{\quad}_{+3}\underbrace{\quad}_{+4}$

Direction : In each of the questions below two statements and two conclusions numbered I and II are given. 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.

9. **Statements :** (i) : All dancers are singers.

                 (ii) : All singers are teachers.

     Conclusions: (i) : All dancers are teachers.

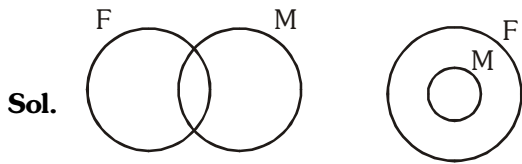   (ii) : Some singers are dancers.

(1) Only conclusion I is true   (2) Only conslusion II is true

(3) Both conclusion I and II are true   (4) Neither conclusion I nor conclusion II is true
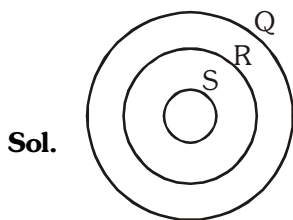
Ans. (3)
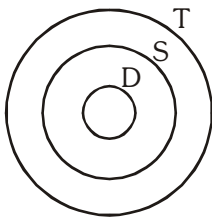
Sol.

Both conclusions I & II are true.

10. **Statements :** (i) : Some fruits are mangoes.

                 (ii) : Some fruits are not guavas.

     Conclusions: (i) : All fruits are mangoes.

                 (ii) : All mangoes are fruits.

(1) Only conclusion I is true   (2) Only conslusion II is true

(3) Both conclusion I and II are true   (4) Neither conclusion I nor conclusion II is true

Ans. (4)

Sol.

Neither conclusion I nor conclusion II is true.

11. **Statements :** (i) : No horse is dog.

(ii) : All dogs are elephants.

Conclusions: (i) : No elephant is horse.

(ii) : Some elephants are dogs.

(1) Only conclusion I is true

(2) Only conslusion II is true

(3) Both conclusion I and II are true

(4) Neither conclusion I nor conclusion II is true

Ans. (2)

Sol.
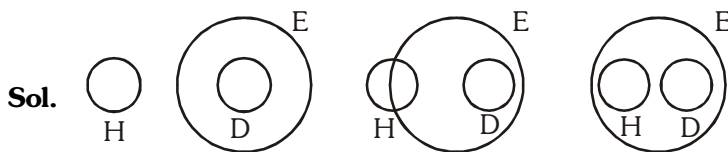
Only conclusion II is true.

12. Which of the following Venn diagrams correctly represents quadrilateral, rectangle and square?

Ans. (1)

Sol.

All square are rectangle

All rectangle are quadrilaterals.

13. Which of the following Venn diagrams correctly represents female, mother and doctor ?

Ans. (3)

Sol.
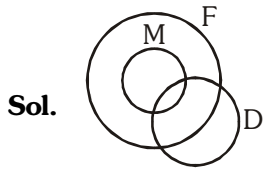
All mother are female

Some mothers are doctors.

Some female are doctors.

Direction :

Give answer according to the following Venn diagram.
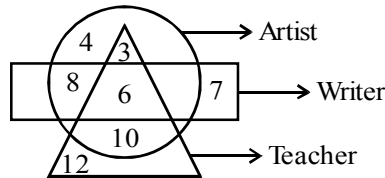
14. Total number of teachers is

(1) 12   (2) 31   (3) 19   (4) 22

Ans. (2)

Sol. 12 + 10 + 6 + 3 = 31

15. How many artists are there who are writer but not teacher ?

(1) 8   (2) 14   (3) 13   (4) 7

Ans. (1)

Sol. Number common in circle & rectangle but outside triangle.

Direction : In question 16 to 19 three alternatives are alike in a certain way but rest the one is different. Find out the odd one and write correct answer.

16. (1) ABYZ   (2) EFUV   (3) IJQR   (4) MNOP

Ans. (4)

Sol.
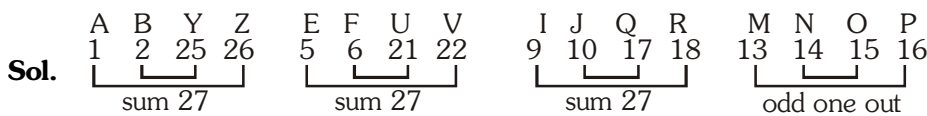
17. (1) $(10)^3$ (2) $(100)^2 \div 100$ (3) $2^3 \times 5^3$ (4) $2000 - 2$

Ans. (4)

Sol. All equals 1000 except option (4).

18. (1) Pacific Ocean   (2) Asia   (3) Europe   (4) Africa

Ans. (1)

Sol. All are continent except pacific ocean.

19. (1) Nepal   (2) Pakistan   (3) Sri Lanka   (4) Australia

Ans. (4)

Sol. All are country except Australia.

20. In the given die the opposite side of the face 3 is having which number ?

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

Ans. (4)

Sol.

	4	
6	2	3
	1	
	5	
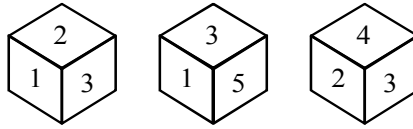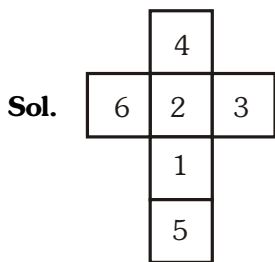
21. The two positions on a dice are shown below. If 1 is at the bottom them what will be on the top ?

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

Ans. (2)

Sol.
$$\begin{array}{l} 3 \nrightarrow 5 \to 4 \\ 3 \nrightarrow 6 \to 2 \\ 1 \end{array}$$
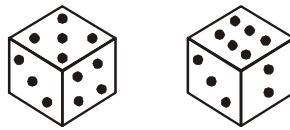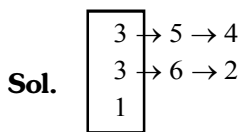
Direction (Q.22 & Q.23) A cube is painted blue on all faces and it is cut into 64 small cubes of equal size. Now answer the following questions

22. How many cubes are not painted on any face?

(1) 8   (2) 16   (3) 27   (4) 54

Ans. (1)

Sol. $(n-2)^3 = (4-2)^3 = 2^3 = 8$

23. How many cubes are there which are painted on one face only?

(1) 8   (2) 16   (3) 24   (4) 32

Ans. (3)

Sol. $(n-2)^2 \times 6 = (4-2)^2 \times 6 = 24$

24. If in a coded language the word 'RAMESH' is written as 'AEHRMS' then in the same code language 'POET' will be written as

(1) EPTO   (2) PEOT   (3) ETOP   (4) OTPE
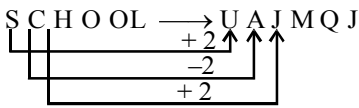
Ans. (4)

Sol. RAMESH ⟶ AEHRMS

POET ⟶ OTPE

25. If in a coded language the word SCHOOL is written as UAJMQJ then PRINCIPLE will be written as

(1) RTKPEKRCN   (2) NPGLAGNJB   (3) RPKLEGRJG   (4) RPKLEKRJG

Ans. (3)

Sol. S C H O OL ⟶ U A J M Q J
+2 −2 +2

P R I N CIP L E ⟶ R P K L E G R J G
+2 −2 +2 −2 +2 −2 +2 +2

Direction (Q.26 & 27) : Following alphabets are written in a special coded language like :

B L A C K   W H I T E

0 1 2 3 4   5 6 7 8 9

26. The code 62830 will be written as

(1) HATCB   (2) HATEC   (3) HATBC   (4) HATCE

Ans. (1)

Sol. 6 2 8 3 0
↓ ↓ ↓ ↓ ↓
H A T C B

27. 'BHICK' will be coded as

(1) 06734   (2) 6734   (3) 6743   (4) 06743

Ans. (1)

Sol. BHICK → 06734

28. Sailesh introduces Mahipal as the son of the only brother of his father's wife. How is Mahipal related to Sailesh?

(1) Cousin   (2) Son   (3) Maternal uncle   (4) Son-in-law

Ans. (1)

Sol.
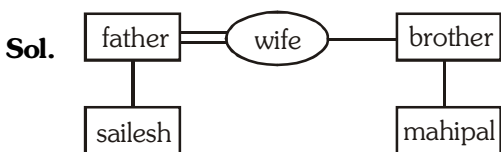
29. Ramesh travel 3 km to east then moves to right and travels 5 km and at the end he again he moves right and travels 15 km. Then the distance and direction of initial point from Ramesh is

(1) 13 km south-west   (2) 13 km north-east   (3) 12 km north-east   (4) 12 km south-east

Ans. (2)

Sol.
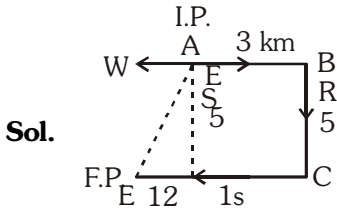
$AE^2 = AD^2 + ED^2$

$AE^2 = 5^2 + 12^2 = 25 + 144 = 169$

$AE = 13$ km north-east

30. How many 5s there in the following sequence which are immediately followed by 3 but not immediately preceded by 7?

4 3 6 5 7 5 3 6 4 5 7 3 5 7 3 5 3

(1) 0   (2) 1   (3) 2   (4) 3

Ans. (2)

Sol. 4 3 6 5 7 5 3 6 4 5 7 3 5 7 <u>3 5 3</u>

Direction : In question 31 to 34 there are two sets of figures. One set contains problem-figures while the other has answer-figures. There is a sequence according to which the problem-figures are arranged. You have to select an answer-figure which can be added in sequence with the problem-figures. Choose the correct figure.

31. Problem-figures
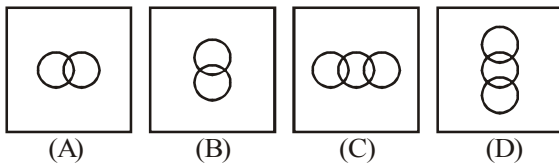
Answer-figures

Ans. (3)

Sol. By observation.
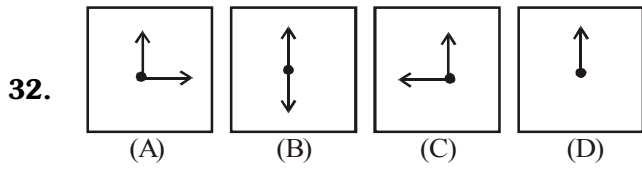
32.

Problem-figures

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

Answer-figures

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

Ans. (4)

Sol. By observation.

33.

Problem-figures

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

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

Ans. (1)

Sol. By observation.

34. Problem-figures

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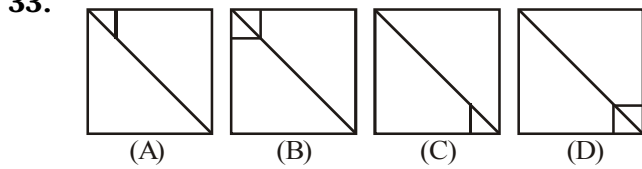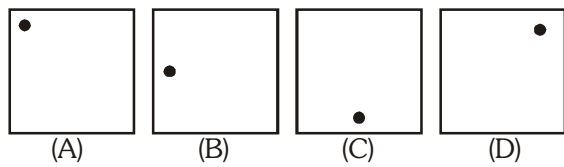
(1)   (2)   (3)   (4)

Ans. (4)

Sol. By observation.

Direction : In questions **35** to **38** there are four figures given. One of these does not correlate with the rest of the figures. Find out that odd figure.

35. (1) J (2) F (3) M (4) T

Ans. (1,4)

Sol. J curved. So option (1)

or
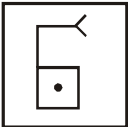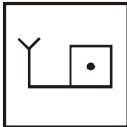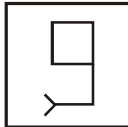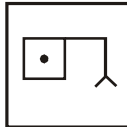
T Others are first letters of the names of months in a year. So option (4)

36. (1)   (2)   (3)   (4)

Ans. (3)

Sol. Line is not exactly in the middle of the circle.

37. (1)   (2)   (3)   (4)

Ans. (3)

Sol. (Dot is not present)

38. (1)   (2)   (3)   (4)

Ans. (4)

Sol. Series is followed number of lines are increasing. In figure one 3, then in figure two 4, then in figure three 5 next should be 6 but it is given 5.

Direction : In question **39** to **40**, find the correct mirror image of the given figures, when mirror is placed on right side of the figure.

39.

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

Ans. (2)

Sol. By observation.

40.

(1) (2) (3) (4)
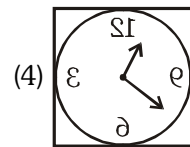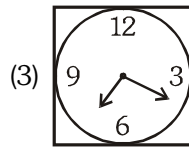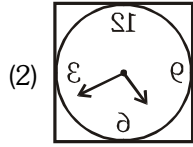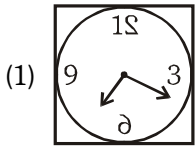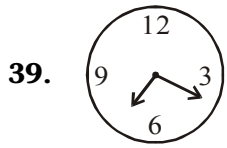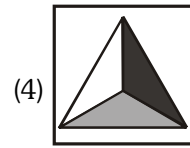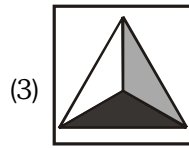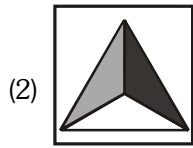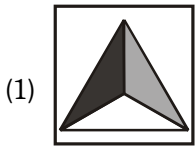
Ans. (2)

Sol. By observation.

Direction : In question 41 and 42 find the correct water image of the given figure.

41.

(1) (2) (3) (4)
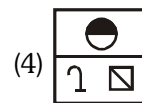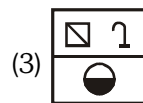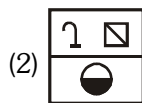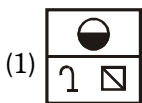
Ans. (4)

Sol. By observation.

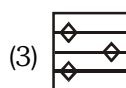**42.** 720

(1) 0SⱵ (2) ⱵS0 (3) ∠S0 (4) Ⱶ20

Ans. (2)

Sol. By observation.

Direction : in the following question 43 – 44, figure showing a sequence of folding and cutting a paper are given. Which could resemble the figure in the answer figure?
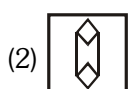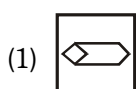
43.

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

Ans. (4)

Sol. By observation.

44.
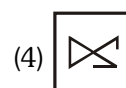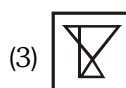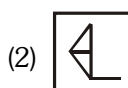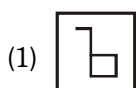
(1)   (2)   (3)   (4)
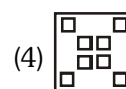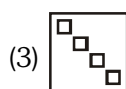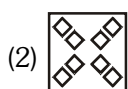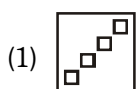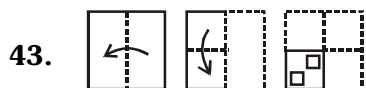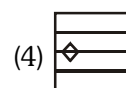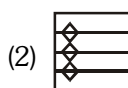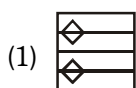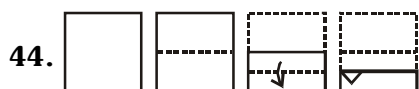
Ans. (1)

Sol. By observation.

Direction : In the following figure there is a question figure, which is embedded one out of four figures. Trace out the correct alternative.
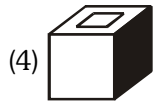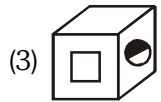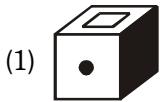
45.
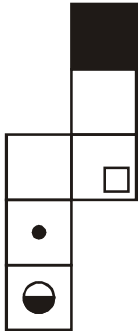
(1)   (2)   (3)   (4)

Ans. (2)

Sol. By observation.

46.

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

Ans. (2)

Sol. By observation.

47. In the given figure squares are folded and a cube is formed. Then how will it be seen from the following?

(1) 　(2) 　(3) 　(4)

Ans. **(3)**

Sol. (Except option-3, square and Filled part should not be adjacent inother three caption both are adjacent in the dice.

48. How many numbers between 11 to 50 are there are exactly divisible by 7 but not divisible by 3?
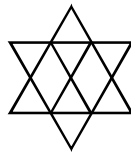
(1) 3　　　(2) 4　　　(3) 5　　　(4) 6

Ans. **(2)**

Sol. 14,28,25,49

49. Determine the number of pentagons in the following figure :

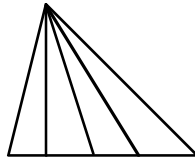(1) 5　　　(2) 6　　　(3) 8　　　(4) 10

Ans. **(2)**

Sol.

AFJKH → 6 convex pentagon using vertex.

50. Determine the number of traingles is the following figure :

(1) 5　　　(2) 6　　　(3) 8　　　(4) 10

Ans. **(4)**

Sol.

Single part triangle	4
Two part triangle	3
Three part triangle	2
Four part triangle	1
Total	10