BRO Bloom Reasoning Olympiad

Bloom Reasoning Olympiad
Sample Paper 1

Maximum Time : 60 Minutes

Maximum Marks : 60

INSTRUCTIONS

1. There are 50 Multiple Choice Questions in this paper divided into two sections :

   Section A   40 MCQs; 1 Mark each
   Section B   10 MCQs; 2 Marks each

2. Each question has Four Options out of which **ONLY ONE** is correct.

3. All questions are compulsory.

4. There is no negative marking.

5. No electronic device capable of storing and displaying visual information such as calculator and mobile is allowed during the course of the exam.

School Name

Student's Name

Section A (1 Mark Questions)

1. In the given question select the related letter from the given alternatives.

EGIK : YWUS : : FHJL : ………. .

(a) ZXVT   (b) YXWV

(c) XVTR   (d) WVSQ

2. Prasad moves towards North a distance of 10 km after which, he turns towards East and travels 20 km at which point, he turns South and continue another 10 km. Finally, he moves 7 km West. How far is he from the starting point?
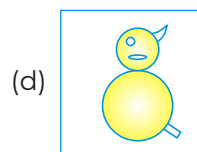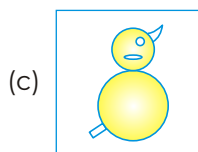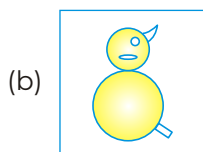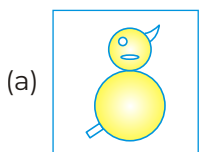
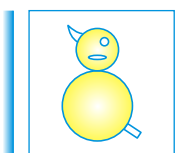(a) 10 km   (b) 13 km

(c) 3 km   (d) 17 km

3. In the following question select the related number from the given alternatives.

68 : 130 : : 222 : ?

(a) 345   (b) 365

(c) 355   (d) 350

4. Find the mirror image of the question figure.

(a)   (b)   (c)   (d)

5. Find the odd number pair from the given alternatives.

(a) 64   (b) 900

(c) 343   (d) 1000

6. If $4 \times 9 = 25$, $7 \times 4 = 53$, then $9 \times 4 = ?$

(a) 81   (b) 83

(c) 85   (d) 88

7. Find the odd word from the given alternatives.

(a) Shimla   (b) Ooty

(c) Darjeeling   (d) Agra
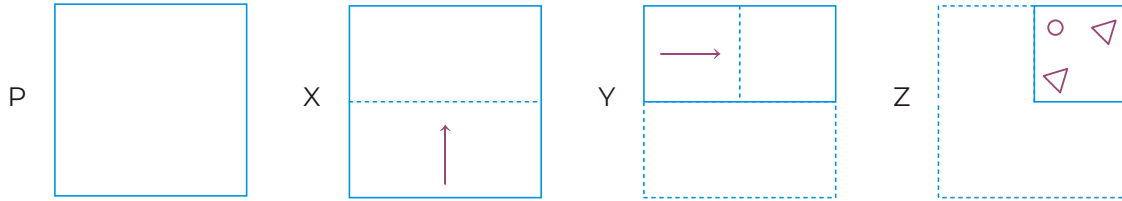
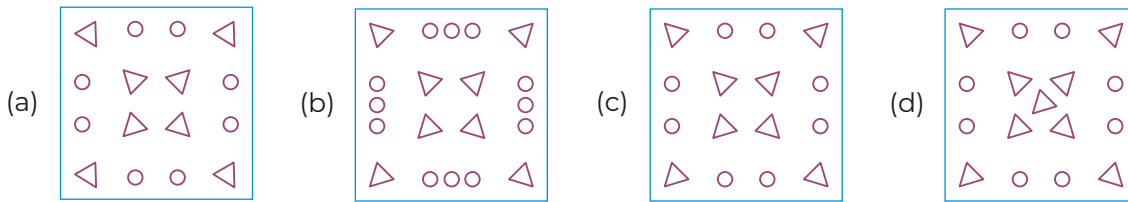**8.** Which one is wrong in the given series?

49 36 25 18 9 4

(a) 9   (b) 18   (c) 25   (d) 49

9. In the given question a piece of paper is folded in the manner shown in the question figure. Select the figure out of the answer choices showing the unfolded pattern after the punches (cut).

Question Figures

P   X   Y   Z

Answer Figures

(a)   (b)   (c)   (d)

10. If BLACKSMITH is coded as CNBELUNKUJ, the CHILDREN will be coded as?

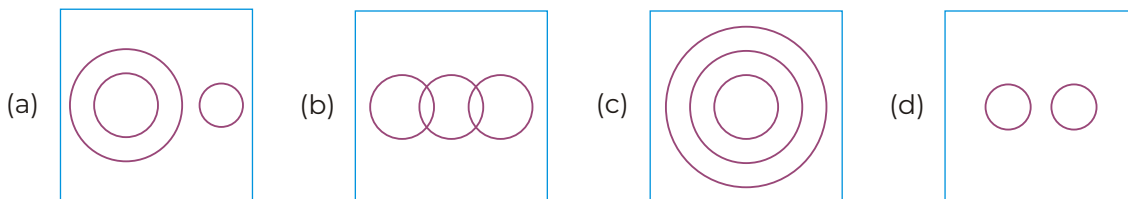(a) DIJMESFO   (b) DJJNETFP   (c) DJINETEP   (d) DJJNETEP

11. Find the water image of given figure.

969

(A)

(a) 966   (b) əe9   (c) 9eə   (d) əeə

12. Identify the diagram that best represents the relationship among classes given below.
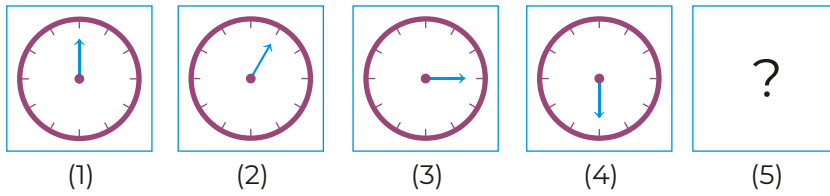
Mammal, Dog, Bat

(a)   (b)   (c)   (d)

13. Satya's birthday falls on 15th August and Meena's birthday falls on 25th June. If Meena's birthday was on Wednesday, what was the day Satya's birthday in the same year?

(a) Friday   (b) Monday

(c) Tuesday   (d) Saturday

14. What comes next in the series given below?

Question Figures

(1)　　　(2)　　　(3)　　　(4)　　　(5)

(a)　　　(b)　　　(c)　　　(d)

15. If LIGHT is coded as MJHIU, find the code for NORMAL.
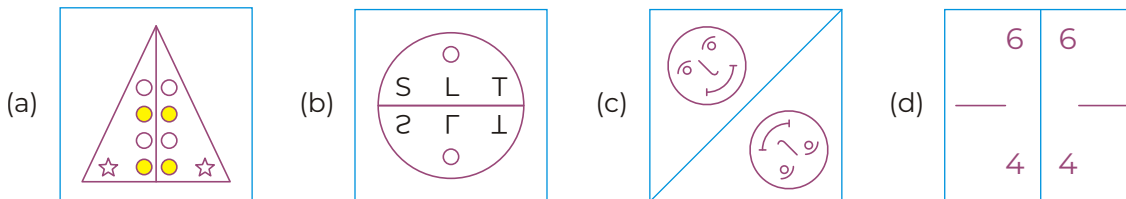
(a) ORNMAL　　　　　　　　　(b) OPSNBM

(c) ORSBNM　　　　　　　　　(d) MNROLA

16. Find the missing number in the series.

75, 96, 116, 135, 153, ?

(a) 173　　　　(b) 170　　　　(c) 178　　　　(d) 175

17. Choose the figure which is different from others.

(a)　　　(b)　　　(c)　　　(d)

18. Sati is elder than Renu, Geeta is younger than Renu while Priya is elder than Sati. Who is the eldest?

(a) Priya　　　　　　　　　　(b) Sati

(c) Renu　　　　　　　　　　(d) Geeta

19. In the given question find the odd letter from the given alternatives.

(a) IFMN　　　　　　　　　　(b) DAHI

(c) ROVW　　　　　　　　　　(d) QNTV

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

1. Dyke　　　　2. Dwindle　　　　3. Dwell　　　　4. Dye

(a) 3, 2, 4, 1　　　　　　　　(b) 1, 2, 4, 2

(c) 2, 1, 3, 4　　　　　　　　(d) 3, 4, 2, 1

21. In the following question find the odd word from the given alternatives.

(a) Shrub　　　　　　　　　　(b) Tree

(c) Grow　　　　　　　　　　(d) Creeper

22. How many such alphabets are there which is preceded and followed by same number in the given sequence?

D 10 & U V # ^ H J * 2 R 2 @ W N 3

(a) One   (b) Two   (c) Three   (d) Four

23. Consider the given statements to be true and decide which of the given conclusions can definitely be drawn from the given statements.

Statements   I. Some bags are pockets.

               II. No pocket is a pouch.

Conclusions   I. Some bags are not pocket.

               II. Some pockets are bags.

(a) Only Conclusion I follows   (b) Only Conclusion II follows

(c) Both Conclusions I and II follow   (d) Neither Conclusion I nor II follows

24. Which of the following interchange of signs would make the equation correct?

$5 + 3 \times 8 - 12 \div 4 = 3$

(a) $-$ and $\div$ (b) $+$ and $\times$ (c) $+$ and $\div$ (d) $+$ and $-$

25. The average age of A and B is 18 yr. After 3 yr, C joins them and the average age of A, B and C becomes 22 yr. The age of C is

(a) 20 yr   (b) 21 yr   (c) 24 yr   (d) 23 yr

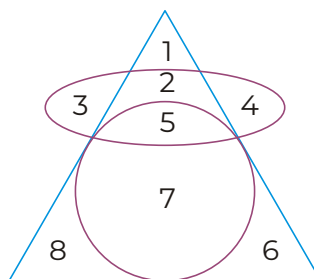**26.** In the following question select the related word from the given alternatives.

Deep : Shallow : : Ocean : ………. .

(a) Pond   (b) Depth   (c) Well   (d) Spring

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

1. Stilt   2. Stifle   3. Stink   4. Stingy

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

28. Which number is common to all the geometrical figures in the diagram below?

(a) 7   (b) 5   (c) 2   (d) 4

29. Introducing a man, woman said that, "He is the son of my mother's brother's father's son". Then how is the woman related to the man?

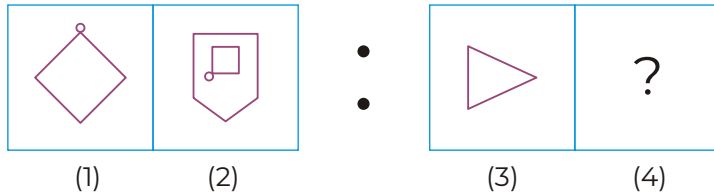(a) Nephew   (b) Brother   (c) Son   (d) Cousin

30. From the given alternative words, select the word which cannot be formed using the letters of the given word.
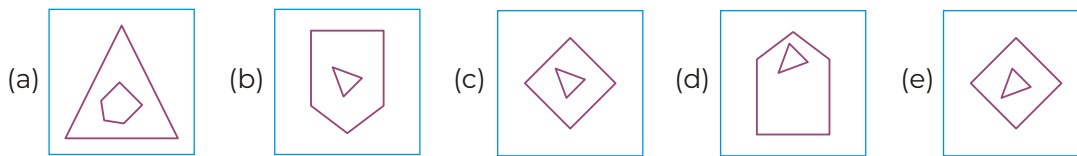
PERSONALITY

(a) REALITY   (b) REASON   (c) PERSON   (d) ROYALITY

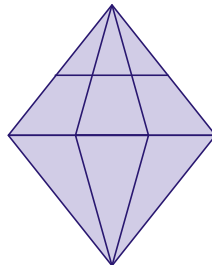**31.** Which figure will come at the place of '?' in the given figures?

Question Figures

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

Answer Figures

(a)   (b)   (c)   (d)   (e)

32. In a college party, 5 girls are sitting in a row. P is to the left of M and to the right of O. R is sitting to the right of N but to the left of O, who is sitting in the middle?

(a) O   (b) R   (c) P   (d) M

33. How many triangles are there in this geometric figure?

(a) 12   (b) 16   (c) 18   (d) 20

34. Consider the given statements to be true and decide which of the given conclusions can definitely be drawn from the given statements.

Statements   Life means stresses and strains.

   Stresses and strains have an adverse effect of life.

Conclusions

   I. Life is not worth living.

   II. One should avoid stresses and strains in life.

(a) Only Conclusion I follows

(b) Only Conclusion II follows

(c) Both Conclusions I and II follow

(d) Neither Conclusion I nor II follows

35. If 1st half of the English alphabet is written in backward order, then what will be the 7th letter to the left of the 10th letter from your right?

(a) C   (b) E   (c) D   (d) J

36. If $+$ means $\div$, $-$ means $\times$, $\times$ means $-$ and $\div$ means $+$, which of the following will be the value of expression $16 \div 8 - 4 + 2 \times 4 = ?$

(a) 16   (b) 28   (c) 32   (d) 44

37. Find the odd letter pair from the given alternatives.

(a) NSWX   (b) KPSU   (c) HMQR   (d) EJNO

38 A man walked 9 km towards East and then 12 km towards South. How far is he from the starting point?

(a) 8 km   (b) 6 km   (c) 15 km   (d) 7.5 km

39. When the following figure is folded to form a cube, how many dots would lie opposite the face bearing three dots?
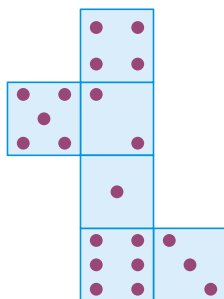
(a) 1   (b) 2   (c) 4   (d) 5

40. Shivam ranks 7th from the top and 26th from the bottom in a class. Find the total number of students in the class.

(a) 31   (b) 32   (c) 33   (d) 34

Section B (2 Marks Questions)

Directions (Q. Nos. 41 and 42) In each of the questions below are given two statements followed by two conclusion numbered I and II. You have to take the given statements to be true even if they seem to be at variance from common known facts. Read both the conclusions and then decide which of the given conclusions logically follows from to given statements, disregarding commonly known facts.

Give answer

(a) If only I follows   (b) If only II follows

(c) If both follow   (d) If none follows

41. Statements   All stars are planets.
                    All planets are galaxies.

     Conclusions   I. All galaxies are planets.
                    II. All stars are galaxies.

42. Statements   Some bags are hots.

All hots are cakes.

Conclusions   I. All cakes are bags.

II. All bags are cakes.

43. Six persons A, B, C, D, E and F are sitting in two rows, with three person in each row.

I. E is not at the end of any row.

II. D is second to the left of F.

III. C, the neighbour of E is sitting diagonally opposite to D.

IV. B is the neighbour of F.

Which of the following are in one of the two rows?

(a) D, B and F   (b) C, E and B

(c) A, E and F   (d) F, B and A

44. A cube with two adjacent faces coloured is cut into 64 identical small cubes. The number of these small cubes that are not coloured at all is

(a) 48   (b) 36   (c) 32   (d) 44

Directions (Q. Nos. 45 and 46) Read the following information carefully and answer the questions given below.

Four youngmen namely Rajesh, Pran, Vinod and Arun are in love with four girls namely Shobhita, Kamla, Vimla and Promila, Shobhita and Vimla are good friends. Vinod's girlfriend does not like Shobhita and Vimla. Kamla does not care for Vinod. Pran's girlfriend friendly with Shobhita. Shobhita does not like Rajesh.

45. Who is Rajesh's girlfriend?

(a) Shobhita   (b) Kamla

(c) Vimla   (d) Promila

46. Who is Promila's boyfriend?

(a) Arun   (b) Pran

(c) Vinod   (d) Rajesh

Direction (Q. No. 47) Read the following information carefully and answer the question that follows :

(i) 'P $\times$ Q' means 'P is the father of Q'.

(ii) 'P $-$ Q' means 'P is the sister of Q'.

(iii) 'P $+$ Q' means 'P is the mother of Q'.

(iv) 'P $\div$ Q' means 'P is the brother of Q'.

47. In the expression B $+$ D $\times$ M $\div$ N, how is M related to B?

(a) Grandson   (b) Son
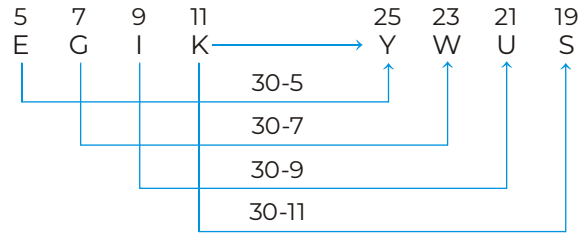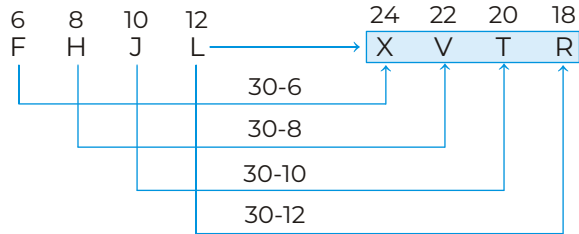
(c) Daughter   (d) Granddaughter

48. Vijay is fifteenth from the front in a column of boys. There were thrice as many behind him as there were in front. How many boys are there between Vijay and the seventh boy from the end of the column?

(a) 33   (b) 34   (c) 35   (d) 30

49. If 'P + Q' means 'P is the brother of Q', 'P × Q' means 'P is the father of Q' and 'P − Q' means 'P is the sister of Q', which of the following relations shows that I is the niece of K?

(a) K + Y + Z − I   (b) K + Y × I − Z   (c) Z − I × Y + K   (d) K × Y + I − Z

50. Five friends P, Q, R, S and T are sitting in a row facing North. Here, S is between T and Q and Q is to the immediate left of R. P is to the immediate left of T. Who is in the middle?

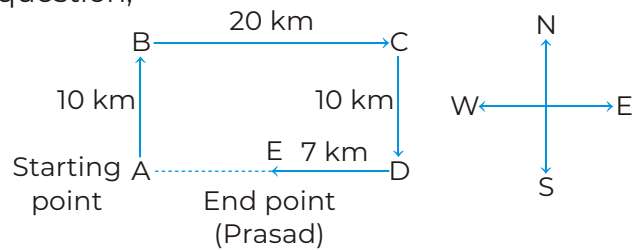(a) S   (b) T   (c) Q   (d) R

Solutions

1. (c) As,

5	7	9	11		25	23	21	19
E	G	I	K	→	Y	W	U	S

30-5

30-7

30-9

30-11

Similarly,

6	8	10	12		24	22	20	18
F	H	J	L	→	X	V	T	R

30-6

30-8

30-10

30-12

Hence, option (c) is correct answer.

2. (b) According to the question,

```
            20 km
     B ─────────────→ C
     ↑                │
10 km│          10 km │         N
     │                ↓         ↑
Starting A ···········←D   W←───┼───→E
point      E  7 km              ↓
        End point               S
        (Prasad)
```

$$AE = BC - DE = 20 - 7 = 13 \text{ km}$$

∴ Prasad is 13 km far from his starting point.

Hence, option (b) is correct answer.

3. (d) As, $68 = 4^3 + 4$, $130 = 5^3 + 5$

Similarly, $222 = 6^3 + 6$

∴ $\boxed{350} = 7^3 + 7$

Hence, option (d) is correct answer.

4. (a) Option (a) is correct mirror image of the question figure.

5. (b) Except option (b) i.e. 900, all other are perfect cubes.

Hence, option (b) is correct answer.

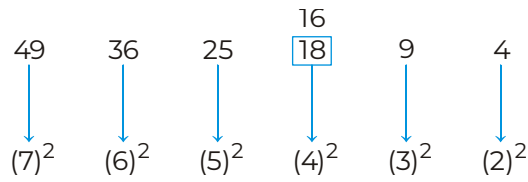**6.** (c) As, $4 \times 9 \Rightarrow (4)^2 + 9 = 16 + 9 = 25$

$7 \times 4 \Rightarrow (7)^2 + 4 = 49 + 4 = 53$

Similarly, $9 \times 4 \Rightarrow (9)^2 + 4 = 81 + 4 = \boxed{85}$
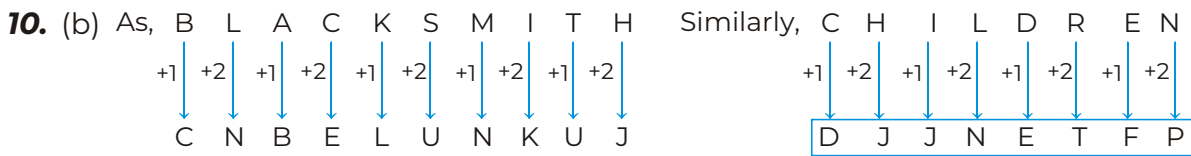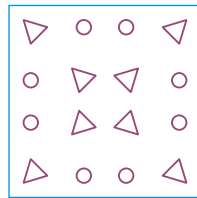
Hence, option (c) is correct answer.

7. (d) Except Agra all places are hill stations.

Hence, option (d) is correct answer.

8. (b) The pattern is as follows,

$$\begin{array}{cccccc} 49 & 36 & 25 & \boxed{\overset{16}{18}} & 9 & 4 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ (7)^2 & (6)^2 & (5)^2 & (4)^2 & (3)^2 & (2)^2 \end{array}$$

'18' is wrong in the series.

Hence, option (b) is correct answer.

9. (c) According to the given question,

10. (b) As, B L A C K S M I T H   Similarly, C H I L D R E N

$$\begin{array}{c} +1 \ +2 \ +1 \ +2 \ +1 \ +2 \ +1 \ +2 \ +1 \ +2 \\ \downarrow \\ \text{C N B E L U N K U J} \end{array} \qquad \begin{array}{c} +1 \ +2 \ +1 \ +2 \ +1 \ +2 \ +1 \ +2 \\ \downarrow \\ \boxed{\text{D J J N E T F P}} \end{array}$$

Hence, option (b) is correct answer.

11. (d) The correct water image of given figure is option (d). Hence, option (d) is correct answer.

**12.** (a) According to the given question,

Mammal

Bat

Dog
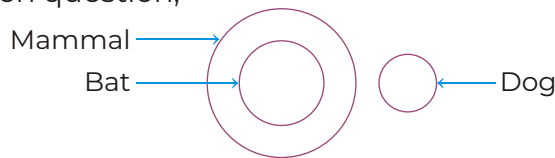
Bats are mammal but dog is different.

Hence, option (a) is correct answer.

13. (a) Total days from 25 June to 15 August $= 5 + 31 + 15$

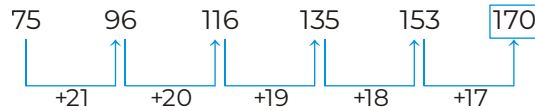$$= 51 = 7 \text{ week} + 2 \text{ days}$$

So, Satya celebrate his birthday after 2 days on Wednesday i.e. 'Friday'.

Hence, option (a) is correct answer.

14. (c) The hand of clock moves one step, two steps and three steps in each successive step in clockwise direction. On following this pattern, we see that option figure (c) will come next.

Hence, option (c) is correct.

15. (b)

As, L I G H T ⟶ M J H I U
+1
+1
+1
+1
+1

Similarly, N O R M A L ⟶ O P S N B M
+1
+1
+1
+1
+1
+1
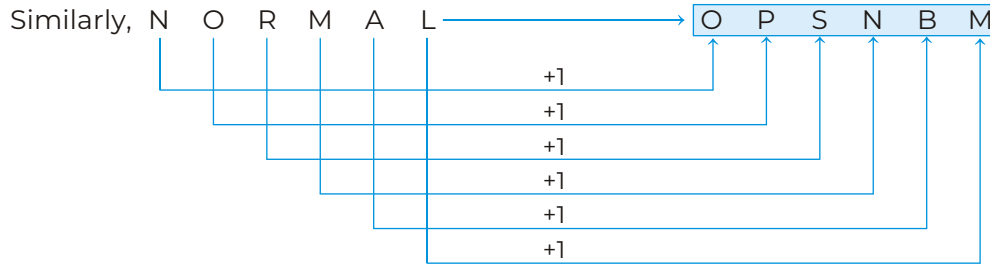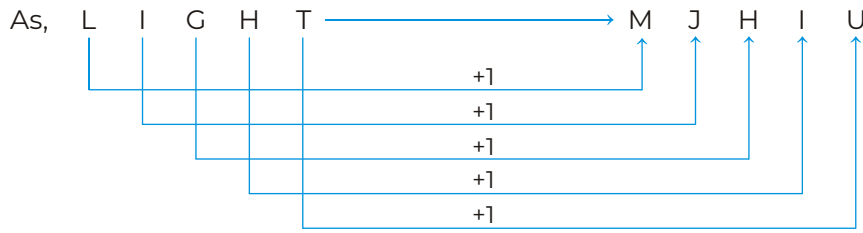
16. (b) The following series is

75   96   116   135   153   170
+21   +20   +19   +18   +17

Hence, option (b) is correct answer.

17. (d) First part of the figure is inverted across the line to obtain the second part. But figure (d) does not follow this pattern. So, figure (d) is odd one out.

Hence, option (d) is correct answer.

18. (a) According to the question,

$$S > R$$
$$R > G$$
$$P > S$$

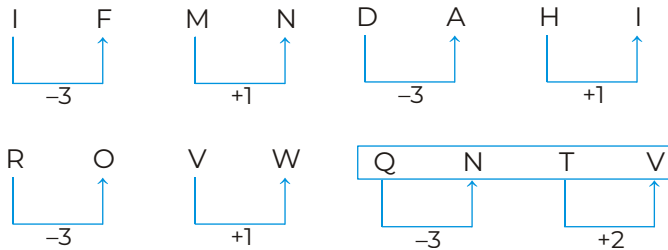$$\begin{bmatrix} S = Sati \\ R = Renu \\ G = Geeta \\ P = Priya \end{bmatrix}$$

On arranging the above data, we get

$$P > S > R > G,$$

So, Priya is the eldest.

Hence, option (a) is correct answer.

19. (d) According to the question,

I F   M N   D A   H I
−3   +1   −3   +1

R O   V W   Q N   T V
−3   +1   −3   +2

'QNTV' is different from other.

20. (a) The given following word as per dictionary.

$$\text{Dwell} \rightarrow \text{Dwindle} \rightarrow \text{Dye} \rightarrow \text{Dyke}$$
$$\quad (3) \qquad\quad (2) \qquad\quad (4) \qquad (1)$$

$\Rightarrow$ 3, 2, 4, 1
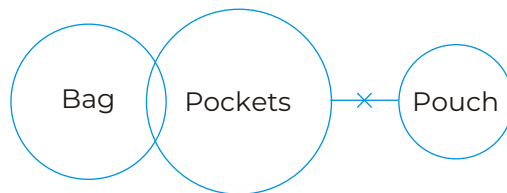
Hence, option (a) is correct answer.

21. (c) All except 'Grow' are type of plant while 'Grow' is a process.

Hence, option (c) is correct answer.

22. (a) Only one alphabet i.e. '2R2' is preceded and followed by same number.

Hence, option (a) is correct answer.

23. (c) According to the given statements,

Conclusions

 I. Some bags are not pockets. (True)

II. Some pockets are bags. (True)

Both Conclusions I and II follow.

24. (a) The expression is $5 + 3 \times 8 - 12 \div 4 = 3$

By using option (a)　　$5 + 3 \times 8 \div 12 - 4 = 3$

$$\text{LHS} = 5 + 2 - 4 = 3$$
$$\text{RHS} = 3$$

$\therefore$ Option (a) is correct answer.

25. (c) Total sum of age of A and B $= 18 \times 2 = 36$ yr

If after 3 yr C joining them

$\therefore$　Total sum of age of A, B and C after 3 yr $= 22 \times 3 = 66$

$\therefore$　Age of C $= 66 - (36 + 6) = 66 - 42 = 24$ yr

26. (a) The word in each pair are antonyms.

Hence, option (a) is correct answer.

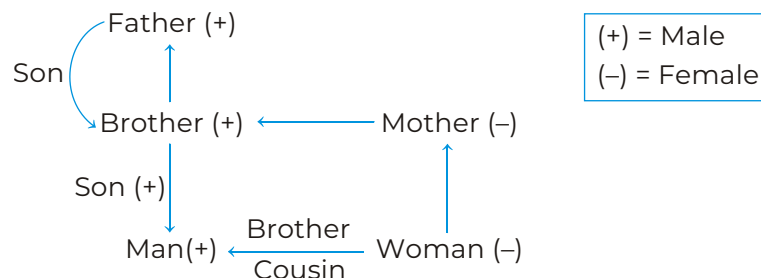**27.** (c) The given words can be arranged as,

Stifle $\rightarrow$ Stilt $\rightarrow$ Stingy $\rightarrow$ Stink

 (2)　　　(1)　　(4)　　　(3)

Hence, option (c) is correct answer.

28. (b) Number 5 is common to all the three geometrical figures.
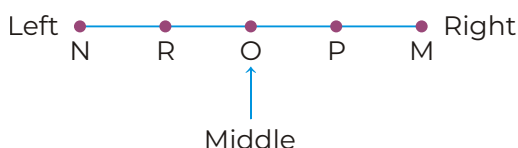
29. (d) According to the question,

Father (+)

Son

Brother (+) ⟵ Mother (–)

Son (+)

Man(+) ⟵ Brother / Cousin ⟵ Woman (–)

(+) = Male
(–) = Female

Hence, the man is woman's cousin brother.

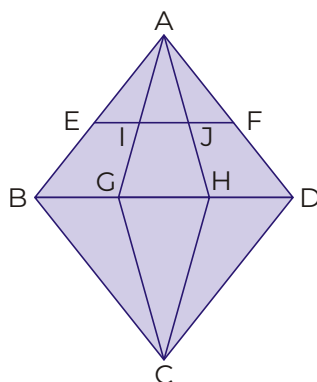**30.** (d) The word 'PERSONALITY' does not contain two 'Y' word. So, letters 'ROYALITY' cannot be formed.

31. (c) The figure rotates through 135° anti-clockwise and a new figure comes outside the existing figure. The number sides of the new figures is one more than that of the existing figure. Hence, option (c) is correct answer.

32. (a) Arrangement according to the question is as follows.

Left — N — R — O — P — M — Right

Middle

Clearly, O is sitting in the middle.
Hence, option (a) is correct answer.

33. (c) According to the given question,

There are total 18 triangles in the given figure.
ΔAEI, ΔAIJ, ΔAJF, ΔAEJ, ΔAIF, ΔAEF, ΔABG, ΔAGH, ΔAHD, ΔABH, ΔAGD,
ΔABD, ΔBGC, ΔGCH, ΔHCD, ΔBHC, ΔGCD, ΔBDC

34. (b) 'Stress' is a part of life but it doesn't mean that life is not worth living. People should avoid stress and strains and enjoy the beauty of life.
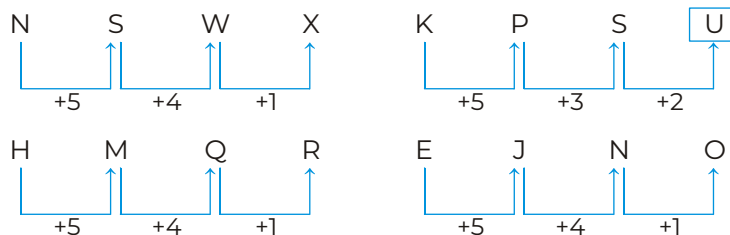
Hence, only Conclusion II follows.

35. (c) According to the given question,

M L K J I H G F E (D) C B A N O P Q R S T U V W X Y Z

to the left | From the right

7th | 10th
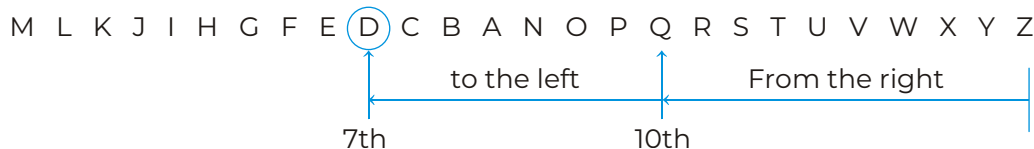
∴ The 7th letter to the left of 10th letter from our right is D.

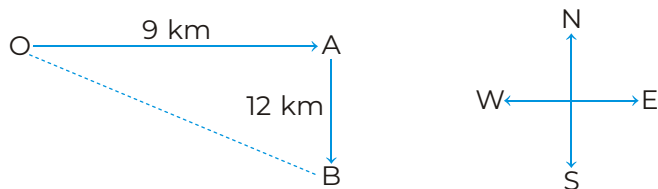Hence, option (c) is correct answer.

36. (b)
$$+ \rightarrow \div, \times \rightarrow -$$
$$- \rightarrow \times, \div \rightarrow +$$
$$? = 16 \div 8 - 4 + 2 \times 4$$
$$? = 16 + 8 \times 4 \div 2 - 4$$
$$? = 16 + 8 \times 2 - 4$$
$$? = 16 + 16 - 4$$
$$? = 32 - 4 = 28$$

37. (b) According to the given question,

N   S   W   X   K   P   S   [U]

+5   +4   +1   +5   +3   +2

H   M   Q   R   E   J   N   O

+5   +4   +1   +5   +4   +1

∴ KPSU is the odd one.

38. (c)

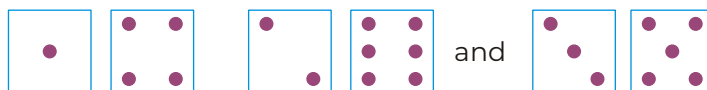O —— 9 km —— A

12 km (AB)

B

N, W, E, S (compass)

$$(OB)^2 = (AB)^2 + (OA)^2$$
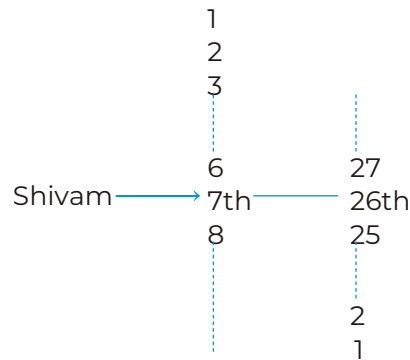$$(OB)^2 = (9)^2 + (12)^2 = 81 + 144 = 225$$
$$OB = \sqrt{225} = 15 \text{ km}$$

So, he is 15 km from the starting point. Hence, option (c) is correct answer.

39. (d) Pairs of opposite faces are

[dice faces] and [dice faces]

So, when the given figure is folded to form a cube, 5 dots will lie opposite the face bearing 3 dots. Hence, option (d) is correct.

40. (b) Shivam ranks 7th from top i.e. he has 6 students above him and he ranks 26th from bottom i.e. he has 25 students below him.

```
              1
              2
              3
              ⋮        ⋮
              6        27
Shivam ──→   7th ───── 26th
              8        25
                       ⋮
              ⋮        2
                       1
```
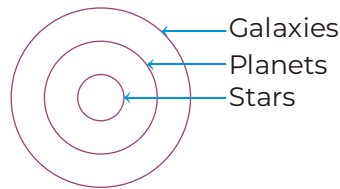
∴ Total number of students in class

= (Students above Shivam) + (Students below Shivam) + Shivam $= 6 + 25 + 1 = 32$ students

Alternate Method

Total number of students in class = Shivam's rank from top + Shivam's rank from bottom -1

$$= 7 + 26 - 1 = 32$$

Hence, option (b) is correct.

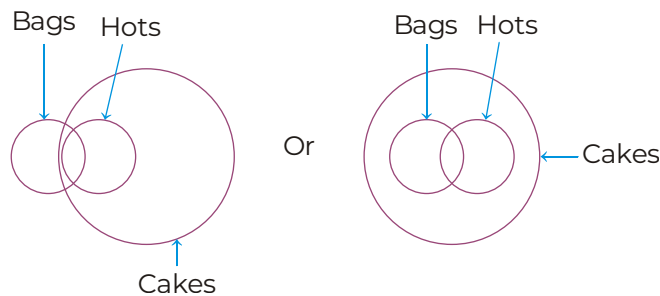**41.** (b) According to the question,

Conclusions

    I. All galaxies are planets. (False)

   II. All stars are galaxies. (True)

Hence, option (b) is correct answer.

42. (d) According to the question,

Conclusions   I. All cakes are bags. (False)

              II. All bags are cakes. (False)
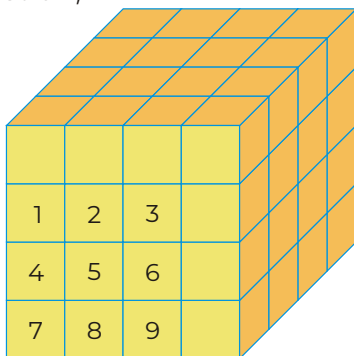
Hence, option (d) is correct answer.

43. (a) First row

1st row   A   E   C

2nd row   D   B   F

Clearly, D, B and F are in one of the two rows.

44. (b) According to the given question,

Let the two faces with dots represent the two adjacent coloured faces of the cube. The 9 rows of smaller cubes (indicated by the numbers 1-9) are made up of 4 cubes each that have none of their faces coloured.

So, required number of small cubes $= 9 \times 4 = 36$

Hence, option (b) is correct.

Sol. (Q. Nos. 45 and 46) Following table can be drawn from the given information.

	Shobhita	Kamla	Vimla	Promila
Rajesh	✗	✓	✗	✗
Pran	✗	✗	✓	✗
Vinod	✗	✗	✗	✓
Arun	✓	✗	✗	✗

45. (b) Kamla is Rajesh's girlfriend.

46. (c) Vinod is Promila's boyfriend.

47. (a) Evaluating the expression from the right to left, we have
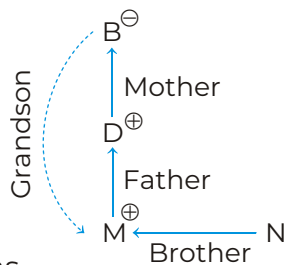
'M ÷ N' ⇒ M is the brother of N.

So, M must be a male.

'D × M' ⇒ D is the father of M.

So, D must be a male.

'B + D' ⇒ B is the mother of D.

So, B must be a female.

The relationship diagram can be drawn as

Clearly, B is mother of D who is father of M. So, M is the grandson of B.

Hence, option (a) is correct.

48. (c) Vijay's rank from front $= 15$th

So, there are $15 - 1 = 14$ boys in front of Vijay.

Therefore, boys behind Vijay $= 14 \times 3 = 42$

$\therefore$ Number of boys from Vijay till end $= 42 + 1 = 43$

Now, the number of boys between Vijay and seventh boy from the end

$$= 43 - 7 - \text{Vijay} = 43 - 7 - 1 = 35$$

Hence, option (c) is correct.

49. (b) Evaluating each of the options one-by-one we find option (b) is correct.
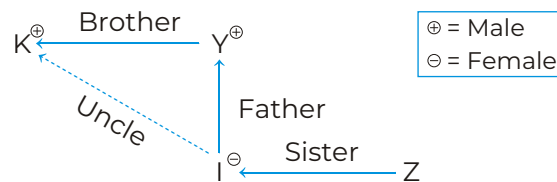
$K + Y \Rightarrow K$ is the brother of Y.

So, K is the male.

$Y \times I \Rightarrow Y$ is the father of I.

So, Y is the male.

$I - Z \Rightarrow I$ is the sister of Z.

So, I is the female.

Clearly, K is the uncle of I.

So, I is the niece of K.

Hence, option (b) is correct.

50. (a) According to the question, sitting arrangement of all the five friends is as follow.

$$P \quad T \quad S \quad Q \quad R$$

Hence, S is the middle.