

UDAYA425-VIII_PT-3-MAT-2

- In a queue of girls, Akansha is ninth from left and Mona is 17th from the right. If the position of Akansha and Mona are interchanged, then now position of Akansha is 15th from left. Find the number of girls between Mona and Akansha?
 (A) 4 (B) 5 (C) 6 (D) 7
- At a ticket counter there are 17 person in a queue. If every second person in the queue is a female and also in the starting and at the end there is a female, then the total number of male in the queue is
 (A) 7 (B) 10 (C) 8 (D) 9

Directions (3 – 7): In each of the following questions a figure marked on transparent sheet is given followed by four answer figures, one out of these four options resembles the figure, which is obtained by folding transparent sheet along the dotted line. This option is your answer.

3. Transparent Sheet Answer Figures

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

4. Transparent Sheet Answer Figures

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

5. Transparent Sheet Answer Figures

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

Space for rough work

6. Transparent Sheet Answer Figures

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

7. Transparent Sheet Answer Figures

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

8. In the following question, two positions of a single dice are given. Find the dots at the face opposite to the face having 3 dots.

I II

(A) 1 (B) 2 (C) 5 (D) 6

9. On the basis of the given two positions of single dice, find the letter at the face opposite to the face having letter A.

I II

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

10. Six faces of a block have been painted with green, yellow, red, black, pink and white. Two positions of this block are given below. If the pink colour be at the top, then which colour will be at the bottom?

I II

(A) blue (B) green (C) yellow (D) red

Space for rough work

UDAYA425-VIII_PT-3-MAT-4

11. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is on the right of B & E. A & C are sitting together. In which position A is sitting?
- (A) Between B & D (B) Between B & C
(C) Between E & C (D) Between C & E

Direction (Q.12 – Q.15): Six friends are sitting in a circle and are facing the centre of the circle. Deepa is between Prakash and Pankaj. Preeti is between Mukesh and Lalit. Prakash and Mukesh are opposite to each other.

12. Who is sitting right to Prakash?
(A) Lalit (B) Deepa
(C) Pankaj (D) Either A or B
13. Who is just right to Pankaj?
(A) Deepa (B) Lalit
(C) Prakash (D) Data Insufficient
14. Who are the neighbours of Mukesh?
(A) Prakash and Deepa (B) Deepa and Preeti
(C) Preeti and Pankaj (D) Lalit and Preeti
15. Who is sitting opposite to Preeti?
(A) Prakash (B) Deepa
(C) Pankaj (D) Lalit

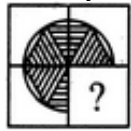
Directions (Q.16 – Q.19): A, B, C, D, E, F, G and H are sitting around a circle facing the centre. D is second to the left of F and third to the right of H. A is second to the right of F and an immediate neighbour of H. C is second to the right of B and F is third to the right of B. G is not an immediate neighbour of F.

16. How many of them are between H and C
(A) Two (B) Three
(C) One (D) None of these
17. Who is immediate left to A?
(A) H (B) E
(C) G (D) Data inadequate
18. In which of the following pairs is the first person sitting to the immediate left of the second person?
(A) CD (B) BG
(C) HA (D) CF

Space for rough work

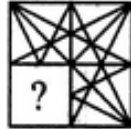
19. Who is fourth to the right of B?
 (A) E (B) C
 (C) A (D) None of these

20. Identify the figure that completes the pattern.



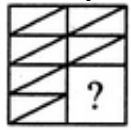
- (X) (1) (2) (3) (4)
 (A) 1 (B) 2 (C) 3 (D) 4

21. Identify the figure that completes the pattern.



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

22. Identify the figure that completes the pattern.



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

23. Identify the figure that completes the pattern.



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

24. Identify the figure that completes the pattern.



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

Space for rough work

33. What is the maximum number of pieces into which a cube can be cut by 13 cuts?
(A) 160 (B) 150
(C) 140 (D) 170
34. How many edges a cuboid has?
(A) 12 (B) 4 (C) 14 (D) 10
35. A cube has always
(A) 8 corners (B) 6 faces (C) 12 edges (D) all of these
36. Find the least number of cuts required which can cut a cube into 60 identical pieces?
(A) 9 (B) 8
(C) 7 (D) 6
37. Find the minimum number of cuts required to get 120 smaller pieces (cuboids or cubes) from a large cube?
(A) 10 (B) 12
(C) 14 (D) 16

Direction Q.38 – Q.42: A cube is coloured red on all the faces. It is cut into 125 smaller cubes of equal size.

38. How many cubes are coloured on one face only?
(A) 54 (B) 52
(C) 48 (D) 56
39. How many cubes are coloured on two face only?
(A) 40 (B) 36
(C) 30 (D) 32
40. How many cubes are coloured on three face only?
(A) 6 (B) 8
(C) 9 (D) 7
41. How many cubes with no face coloured?
(A) 24 (B) 25
(C) 26 (D) 27
42. How many cubes are coloured on atleast two face?
(A) 40 (B) 36
(C) 44 (D) 46

Space for rough work

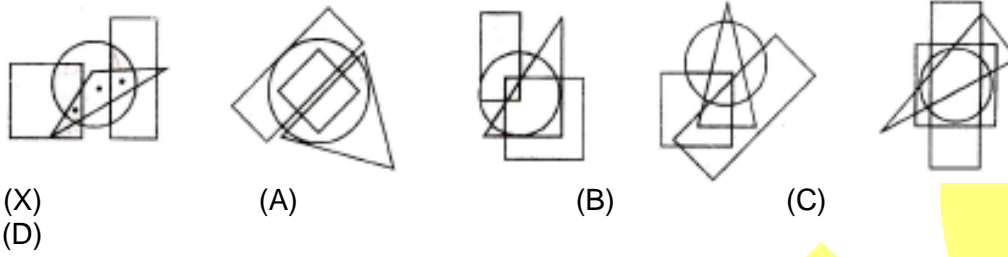
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43. If 5 students utilize 18 pencil in 9 days, how long at the same rate will 66 pencils last for 15 students?
(A) 10 days (B) 12 days (C) 11 days (D) none of these
44. Anil is at present one-fourth the age of his father. After 16 years, he will be one-half age of his father, find the present age of Anil's father.
(A) 40 years (B) 36 years (C) 32 years (D) 28 years
45. A group of 1200 person consisting of caption and soldiers are travelling in a train. For every 15 soldiers there is a caption, the number of caption in the group is
(A) 85 (B) 80 (C) 75 (D) 70
46. A student got twice as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly
(A) 12 (B) 16 (C) 24 (D) 18
47. In the following list of numerals, how many 2s are there each of which is followed by 1 but not preceded by 4?
4 2 1 2 1 4 2 1 1 2 4 4 4 1 2 2 1 2 1 4 4 2 1 4 2 1 2 1 2 4 1 4 2 1 2 4 1 4 6
(A) Two (B) Three (C) Four (D) Five
48. In an examination a student scores 4 marks for each correct answer and loses 1 mark for every wrong answer. If he attempt all 75 questions and scores 125 marks, the number of questions he attempt correctly is
(A) 35 (B) 40 (C) 42 (D) 46
49. A tailor has a number of shirt pieces to cut from a roll of fabric. He cut each roll of equal length in to 10 pieces. He cut at the rate of 45 cuts a minute. How many rolls would be cut in 24 minutes?
(A) 32 rolls (B) 54 rolls (C) 108 rolls (D) 120 rolls
50. At the end of business conference, 10 people present shake hands with each other once. How many handshake will be there all together?
(A) 45 (B) 20 (C) 55 (D) 90
51. How many times do the two hands of a clock coincide in a day?
(A) 11 (B) 12 (C) 22 (D) 44
52. Which year after 1957 has the same calendar as 1957?
(A) 1961 (B) 1962 (C) 1963 (D) 1964

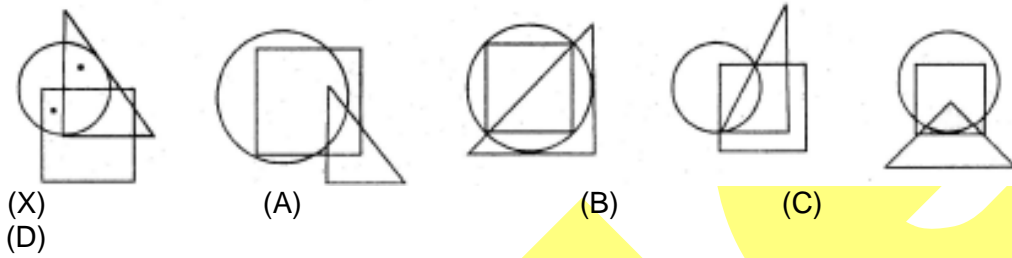
Space for rough work

Directions (53 – 54): In the following question a dot is placed in the figure marked as (X), this figure is followed by four alternatives marked as (A), (B), (C) and (D). One out of these four options contains the common region to circle, squares triangle similar to that of marked by dot in figure (X). Select that option.

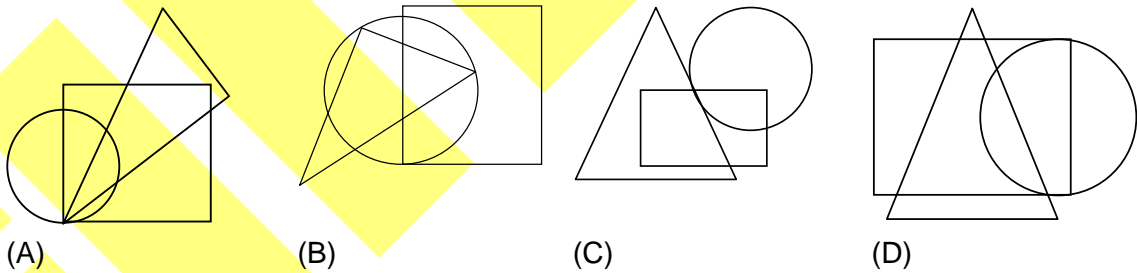
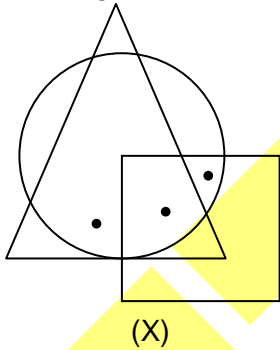
53.



54.



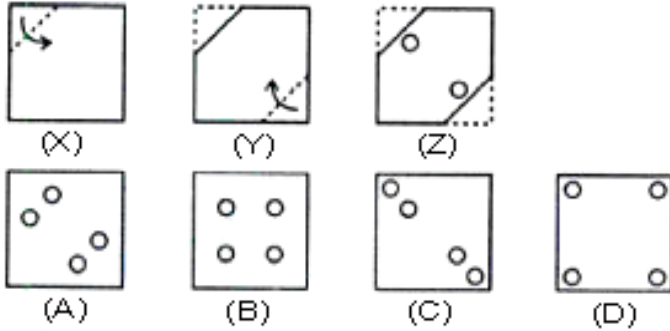
55. Find the figure which satisfies the same condition of placement of the dot as in fig(X):



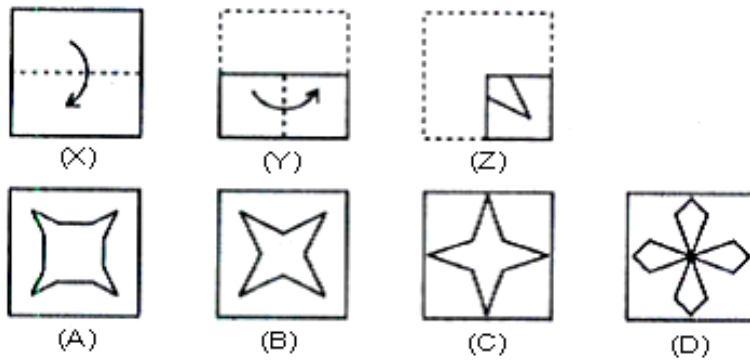
Space for rough work

Directions (56 – 58): In each of the following questions consists of a set of three figures X, Y and Z showing a sequence of folding of a piece of paper, figure (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of figure (Z).

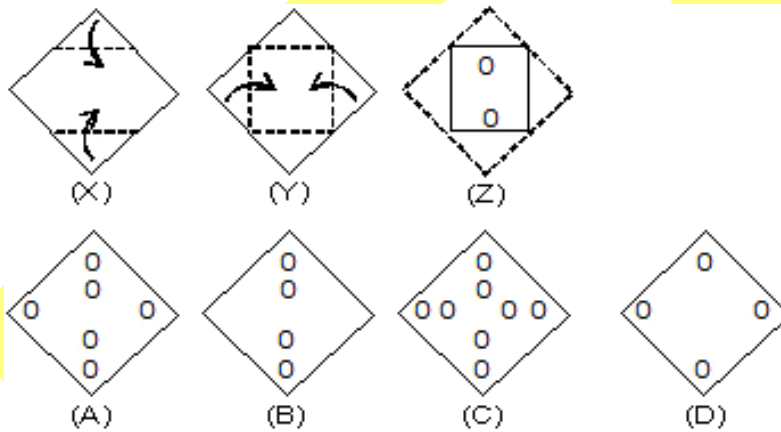
56.



57.



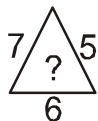
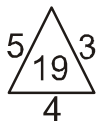
58.



Space for rough work

Directions (59 – 60): In each of the following questions, a set of figures carrying certain characters, is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

59.



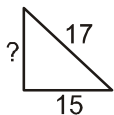
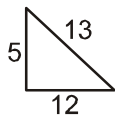
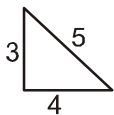
(A) 25

(B) 37

(C) 41

(D) 47

60.



(A) 2

(B) 6

(C) 8

(D) 64

61. If South East becomes North, North East becomes West and so on. What will west become?

(A) North East

(B) North West

(C) South East

(D) South West

62. Ramesh was standing facing a pole during sunrise. The shadow of the pole fell exactly to his right. Which direction he was facing?

(A) East

(B) West

(C) South

(D) Can't be determined

63. Rahul put his watch on the table in such a way that at 6 pm hour hand points to North. In which direction

(A) South East

(B) South

(C) North

(D) West

64. A man is facing North. He turns 180° clockwise, then 270° anticlockwise. Which direction he is facing

(A) North East

(B) North West

(C) West

(D) South West

65. A man is running on a circular 400 m track. If he is facing south now which direction he will be facing after

(A) East

(B) West

(C) North West

(D) Either East or West

66. I am facing south. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?

(A) North

(B) North West

(C) North East

(D) East

Space for rough work

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67. Ravi started walking from his house East direction towards Bus stop which is 3 km away. Then he set off in the bus straight towards his right to the school 4 km away. What is the crow flight distance from his house to the school?
(A) 1 km (B) 5 km
(C) 7 km (D) 12 km
68. A horse is facing North. It turns 90° in the clockwise direction, then 180° in anti-clockwise and then another 90° in the same direction. Which direction is the horse facing now?
(A) East (B) South
(C) South West (D) South East
69. A, B, C, D, E and F not necessarily in that order are sitting at a round table. A is between D and F, C is opposite to D and D and E are not on neighboring chairs. Which of the following pairs must be sitting on neighboring chairs.
(A) A and B (B) C and E
(C) B and F (D) A and C
70. P, Q, R, S, T and U are standing on a circle facing inward. T is next to R who is standing 3 places away from S. P is standing 2 places away from U. Which of the following must be true?
(A) P is standing opposite to R (B) P is standing next to T
(C) P is standing next to S (D) P is standing next to Q

Direction (Q.No. 71 – Q.73): In each of the following question choose out the odd one.

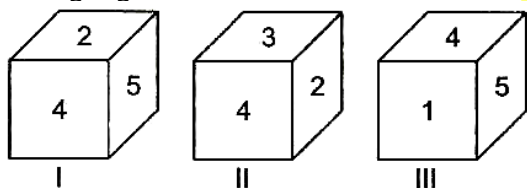
71. (A) Pistol (B) Sword (C) Gun (D) Rifle
72. (A) Man : Garage (B) Pig : Sty (C) Horse : Stable (D) Cow : Shed
73. (A) 48 (B) 50 (C) 82 (D) 170
74. If the letters in PRABA are coded as 27595 and THILAK are coded as 368451, how can BHARATI be coded?
(A) 9567568 (B) 9675538 (C) 9657538 (D) 9567538
75. In a certain code language, '617' means 'sweet and hot', '735' means 'coffee is sweet' and '263' means 'tea is hot' which of the following mean 'coffee is hot'?
(A) 731 (B) 536 (C) 367 (D) 753
76. Find the last number of the series: 3, 9, 17, 27, 39, _____
(A) 29 (B) 49 (C) 79 (D) 53

Space for rough work

77. Find the missing term in the following series:
2, 3, 6, 9, 36, 41, ?
(A) 47 (B) 246 (C) 287 (D) 52
78. Find the missing term in the following series
1, 4, 2, 8, 6, 24, 22, 88, _____
(A) 352 (B) 86 (C) 30 (D) 154

Direction (Q.79 – Q.80): If the given interchanges are made in signs and numbers, which one of the equation would be correct?

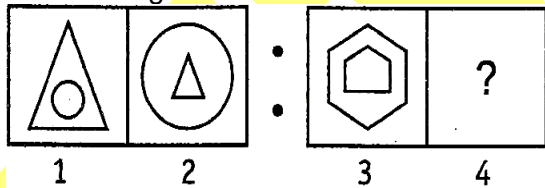
79. Given interchanges:- Signs + and -, numbers 5 and 8
(A) $82 - 35 + 55 = 2$ (B) $82 - 35 + 55 = 102$
(C) $85 - 38 + 85 = 132$ (D) $52 - 35 + 55 = 72$
80. Given interchanges:- Signs \times and \div , numbers 4 and 9
(A) $94 \times 7 \div 47 = 324$ (B) $94 \times 7 \div 97 = 329$
(C) $49 \times 7 \div 49 = 7$ (D) $47 \times 9 \div 94 = 18$
81. From the given three positions of a single dice, find the digit at the face opposite to the face having digit 4.



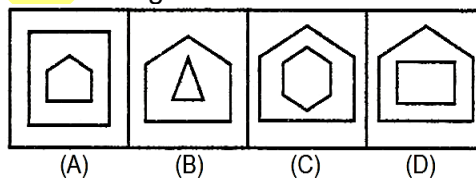
- (A) 1 (B) 3 (C) 5 (D) 6

82. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures



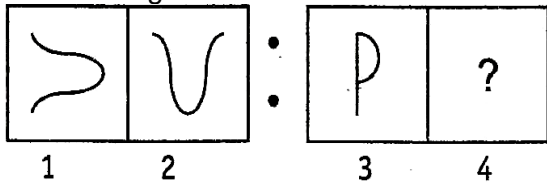
Answer Figures



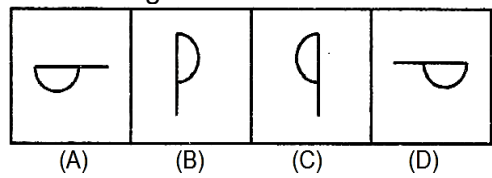
Space for rough work

83. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures

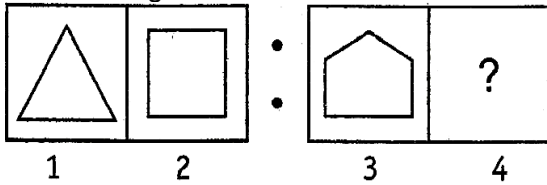


Answer Figures

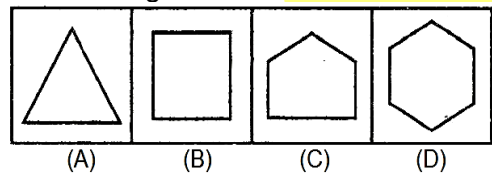


84. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures

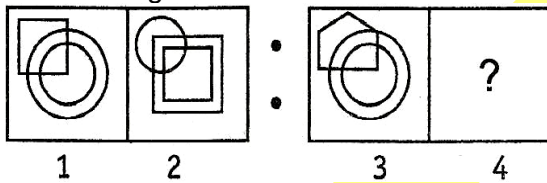


Answer Figures

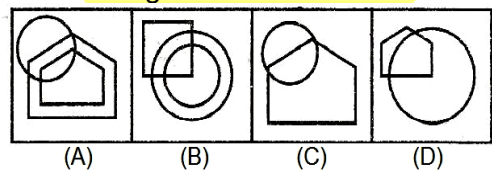


85. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures

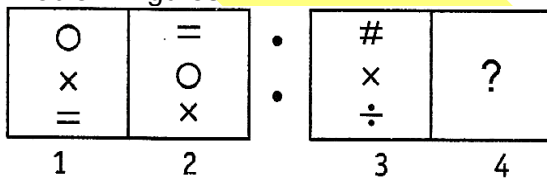


Answer Figures

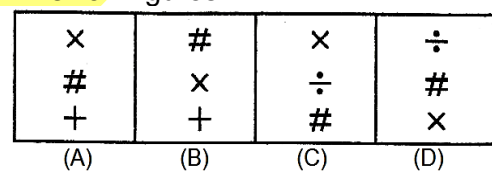


86. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures

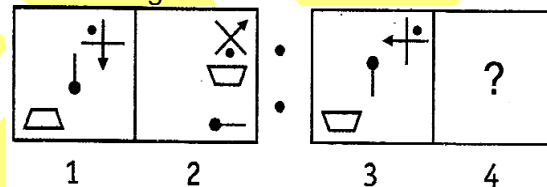


Answer Figures

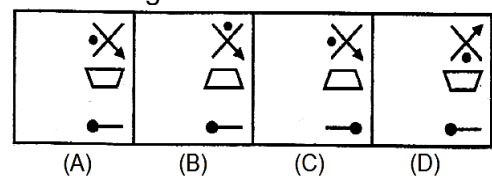


87. Find the figure from the answer figure that will replace the question mark (?) from the problem figure.

Problem Figures



Answer Figures



Space for rough work

Directions (88 – 90): Questions on clocks

88. At what time between 2 and 3 O'clock will the hands of a clock be together?
(A) $10\frac{10}{11}$ min. past 2 (B) $11\frac{10}{11}$ min. past 2
(C) $13\frac{10}{11}$ min. past 2 (D) $7\frac{10}{11}$ min. past 2
89. If a mirror is placed opposite to a clock and the time shown in the clock is 4:30, then what will be time in the mirror's clock?
(A) 8:30 (B) 9:30 (C) 7:30 (D) 4:30
90. If today is Monday, what date will be after 75 days?
(A) Wednesday (B) Thursday (C) Friday (D) Saturday

Space for rough work

FIITJEE INTERNAL TEST

Batch: UDAYA425-VIII

PHASE – III

Mental Ability Test (MAT)

QP CODE: 100827

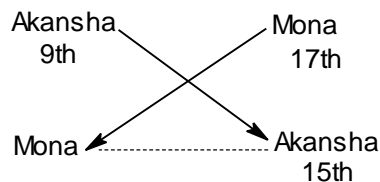
ANSWERS

- | | | | |
|-------|-------|-------|-------|
| 1. B | 2. C | 3. C | 4. C |
| 5. D | 6. D | 7. D | 8. B |
| 9. C | 10. D | 11. B | 12. D |
| 13. D | 14. C | 15. B | 16. B |
| 17. B | 18. D | 19. A | 20. C |
| 21. D | 22. D | 23. B | 24. D |
| 25. D | 26. B | 27. B | 28. D |
| 29. D | 30. A | 31. D | 32. B |
| 33. B | 34. A | 35. D | 36. A |
| 37. B | 38. A | 39. B | 40. B |
| 41. D | 42. C | 43. C | 44. C |
| 45. C | 46. B | 47. C | 48. B |
| 49. D | 50. A | 51. C | 52. C |
| 53. C | 54. B | 55. B | 56. C |
| 57. B | 58. B | 59. C | 60. C |
| 61. C | 62. C | 63. D | 64. C |
| 65. D | 66. C | 67. B | 68. B |
| 69. B | 70. C | 71. B | 72. A |
| 73. A | 74. C | 75. B | 76. D |
| 77. B | 78. B | 79. A | 80. B |
| 81. D | 82. C | 83. D | 84. D |
| 85. A | 86. D | 87. C | 88. A |
| 89. C | 90. B | | |

ANSWERS & SOLUTIONS

1. B

Sol.



Total no of person between Mona and Akansha = $15 - 9 - 1 = 5$

2. C

Sol. Arrange alternate

3. C

Sol. By observation.

4. C

Sol. By observation.

5. D

Sol. By observation.

6. D

Sol. By observation.

7. D

Sol. By observation.

8. B

Sol. Common dots in positions I and II = 4 and 5

\therefore face opposite to the face having 3 dots = face having 2 dots

9. C

Sol. Common letter = C (on different face)

Clearly, E is opposite to A

10. D

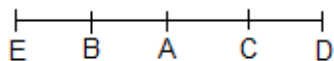
Sol. From both the positions I and II

Common colour = green (at different faces)

Clearly, red is opposite to pink. It means red is at the bottom, if pink is at the top.

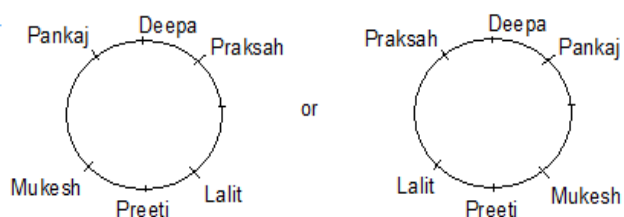
11. B

Sol.



12. D

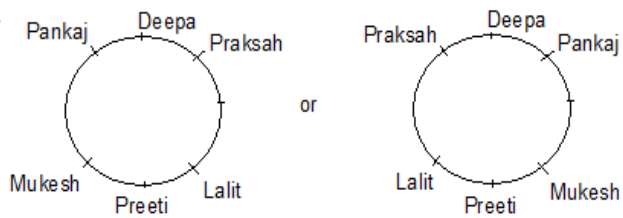
Sol.



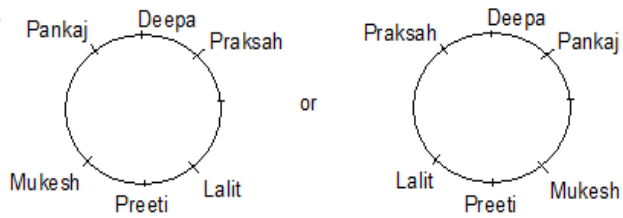
13. D

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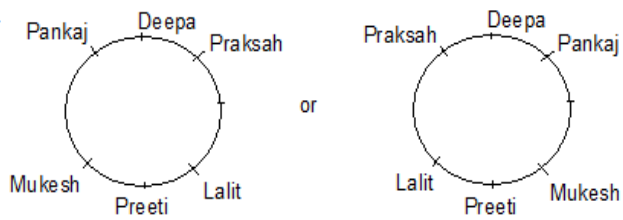
Sol.



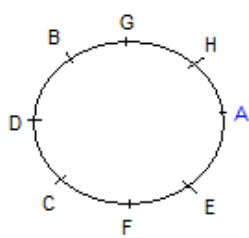
14. C
Sol.



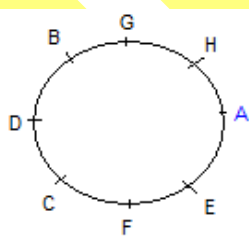
15. B
Sol.



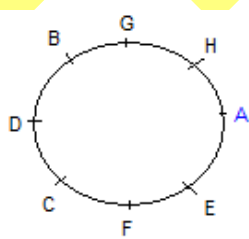
16. B
Sol.



17. B
Sol.

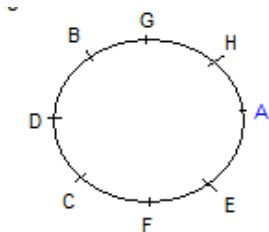


18. D
Sol.

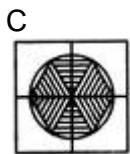


19. A

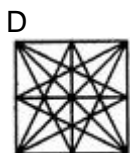
Sol.



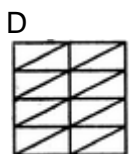
20.
Sol.



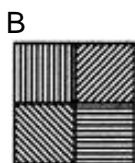
21.
Sol.



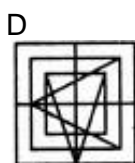
22.
Sol.



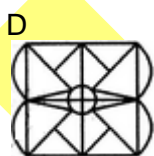
23.
Sol.



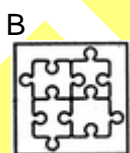
24.
Sol.



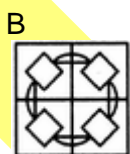
25.
Sol.



26.
Sol.



27.
Sol.



28.
Sol.

D

$$3^2 + 2 = 11$$

$$7^2 + 2 = 51$$

29. D

Sol. $A + 13 \rightarrow N$ $F + 13 \rightarrow S$
 $B + 14 \rightarrow P$ $G + 14 \rightarrow U$
 $C + 15 \rightarrow R$ $H + 15 \rightarrow W$
 $D + 16 \rightarrow T$ $I + 16 \rightarrow Y$

30. A

Sol. Cat has paws, similarly horse has hoof.

31. D

Sol. Total part = 6

$$n = \frac{6}{1} = 6$$

$$\therefore \text{required number of smaller cube} = (n)^3 \\ = (6)^3 = 216$$

32. B

Sol. Here number of smaller cubes = $(n)^3 = 64$

$$\therefore n = 4$$

$$n = \frac{\text{side of bigger cube}}{\text{side of smaller cube}}$$

$$\Rightarrow 4 = \frac{24}{\text{side of smaller cube}}$$

$$= \frac{24}{4} = \text{side of smaller cube} = 6$$

33. B

Sol. To obtain equal pieces, cuts must be made parallel to 3 planes.

Let's assume, a, b, and c cut made along three planes such that there will be $(a + 1)(b + 1)(c + 1) = m$ pieces & $a + b + c = 13$.

\Rightarrow Several combinations can be made but 'm' will be maximum in (4, 4, 5) cuts.

$$\therefore \text{The required number of pieces} = m = (4 + 1)(4 + 1)(5 + 1)$$

$$\Rightarrow 5 \times 5 \times 6$$

$$\Rightarrow 150$$

34. A

Sol. Make a figure and count.

35. D

Sol. By definition

36. A

Sol. We need to cut a cube to 60 identical pieces

If we cut one it become 2 identical pieces.

If we cut twice on same face it becomes 3 identical pieces.

If we cut once on one face and another on other face it becomes 4 identical pieces.

$$\therefore \text{general formula} \Rightarrow \text{number of identical pieces} = (l+1)(m+1)(n+1)$$

(n, m, l) = no. of cut on each face

$$\text{Given:- } (l+1)(m+1)(n+1) = 60$$

$$(l+1)(m+1)(n+1) = 3 \times 4 \times 5$$

$$\Rightarrow (l+1) = 3, m+1 = 4, n+1 = 5$$

$$\Rightarrow l = 2, m = 3, n = 4$$

$$\therefore \text{total no. of cuts} = l + m + n = 3 + 4 + 2 = 9$$

\therefore minimum 9 cuts have to be made to get 60 identical pieces.

37. B

Sol. The correct option is A 12
 Number of pieces required = 120
 Let us write 120 as the product of 3 numbers = $1 \times 1 \times 120$, $1 \times 2 \times 60$, $1 \times 3 \times 40$,.....,
 We need factors that are closest to each other $\rightarrow 3 \times 5 \times 8$, $4 \times 5 \times 6$
 In case of $4 \times 5 \times 6 \rightarrow$ No of cuts = $(4-1) + (5-1) + (6-1) = 12$
 In case of $3 \times 5 \times 8 \rightarrow$ No. of cuts = $(3-1) + (5-1) + (8-1) = 13$
 Therefore, minimum number of cuts required = 12

38. A

Sol. The big cube is cut into 125 smaller cubes of equal size.

The side of cube will be $125^{(1/3)} = 5 = n$

Number of cubes with one face painted,

$$\Rightarrow 6 \times (n - 2)^2$$

$$\Rightarrow 6 \times (5 - 2)^2$$

$$\Rightarrow 6 \times (3)^2$$

$$\Rightarrow 6 \times 9$$

$$\Rightarrow 54$$

39. B

Sol. $12 \times (n - 2)$

$$\Rightarrow 12 \times (5 - 2)$$

$$\Rightarrow 12 \times (3)$$

$$\Rightarrow 12 \times 3$$

$$\Rightarrow 36$$

40. B

Sol. Three face coloured cubes are on corners.

Hence, corners are 8.

41. D

Sol. The big cube is cut into 125 smaller cubes of equal size.

The side of cube will be $125^{(1/3)} = 5 = n$

Number of cubes with one face painted,

$$\Rightarrow (n - 2)^3$$

$$\Rightarrow (5 - 2)^3$$

$$\Rightarrow (3)^3$$

$$\Rightarrow 27$$

42. C

Sol. Atleast two face means, two face and three face combined.

So, $8 + 36 = 44$

43. C

Sol. Let no. of days = D

Student	pencils	days
5	18	9
15	66	D

$$\therefore \text{required days} = 9 \times \frac{5}{15} \times \frac{66}{18} = 11 \text{ days}$$

44. C

Sol. Let the present age of Anil's father be x

The present age of Anil = $\frac{x}{4}$

A/q

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$$\left(\frac{x}{4} + 16\right) = \frac{1}{2}(x + 16)$$

$$\Rightarrow \frac{x}{4} + 16 = \frac{x}{2} + 8$$

$$\Rightarrow x = 32$$

45. C

Sol. There is one caption for every soldier

$$\therefore \text{group} = 15 \text{ soldier} + 1 \text{ caption} \\ = 16$$

$$\therefore \text{no of caption} = 1200 \div 16 = 75$$

46. B

Sol. Correct attempt be x

Incorrect attempt 2x

$$x + 2x = 48$$

$$x = 16$$

47. C

Sol. 4 2 1 2 1 4 2 1 1 2 4 4 4 1 2 2 1 2 1 4 4 2 1 4 2 1 2 1 2 4 1 4 2 1 2 4 1 4 6

48. B

Sol. Let for correct be x

And for incorrect be y

A/q

$$4x - y = 125$$

$$x + y = 75$$

49. D

$$\text{Sol. } \frac{45 \times 24}{9} = 120$$

50. A

$$\text{Sol. } \frac{n(n-1)}{2} = \frac{10(10-1)}{2} = \frac{10 \times 9}{2} = 45$$

51. C

Sol. By observation

52. C

Sol. 1957 - 1, 1958 - 1, 1959 - 1, 1960 - 2, 1961 - 1, 1962 - 1
1963

53. C

Sol. By observation.

54. B

Sol. By observation.

55. B

Sol. By observation.

56. C

Sol. By observation.

57. B
Sol. By observation.

58. B
Sol. By observation.

59. C
Sol. $7 \times 5 + 6 = 41$.

60. C
Sol. $\sqrt{17^2 - 15^2} = 8$

61. C
Sol. The directions are rotated 135° anticlockwise, therefore west will become southeast.

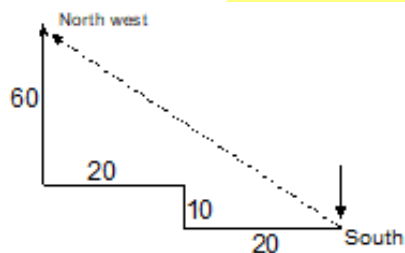
62. C
Sol. Sun is towards the left, thus he is facing south.

63. D
Sol. The minute hand at 9 : 15 p will be 90° anticlockwise to the hour hand at 6 pm. Thus it points west.

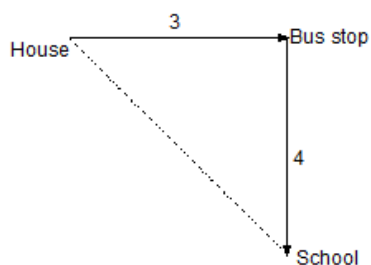
64. C
Sol. Effective rotation is 90° anticlockwise, thus, he now faces west.

65. D
Sol. If he is running clockwise, he will face east, otherwise, west.

66. C
Sol.



67. B
Sol.

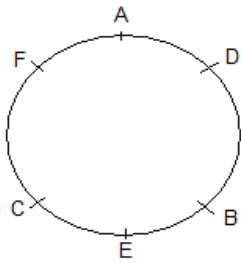


$$\text{Crow flight distance} = \sqrt{3^2 + 4^2} = 5 \text{ km}$$

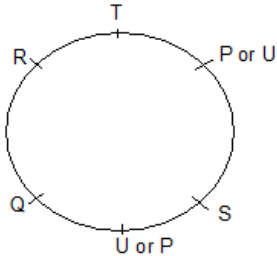
68. B
Sol. Net rotation = 180° anti – clockwise, i.e south

69. B

Sol.



70. Sol. C



71. Sol. B
Except sword all can be fired from distance.

72. Sol. A
Except human others living places are mentioned.

73. Sol. A
 $48 \rightarrow 7^2 - 1$
 $50 \rightarrow 7^2 + 1$
 $82 \rightarrow 9^2 + 1$
 $170 \rightarrow 13^2 + 1$

74. Sol. C
It is direct coding, all the respective codes are written.

75. Sol. B
 $\underline{6}$ 1 $\boxed{7}$ \rightarrow $\boxed{\text{sweet}}$ and $\underline{\text{hot}}$
 $\boxed{7}$ $\textcircled{3}$ 5 \rightarrow coffee $\textcircled{\text{is}}$ $\boxed{\text{sweet}}$
 2 $\underline{6}$ $\textcircled{3}$ \rightarrow tea $\textcircled{\text{is}}$ $\underline{\text{hot}}$

76. Sol. D
+6, +8, +10, +12, +14

77. Sol. B
+1, $\times 2$, +3, $\times 4$, +5, $\times 6$
 $41 \times 6 = 246$

78. Sol. B
 $\times 4, -2, \times 4, -2, \times 4, \dots$

79. Sol. A
After interchanging
 $52 + 38 - 88$
 $90 - 88 = 2$

80. B

Sol. After interchanging

$$49 \div 7 \times 47$$

$$7 \times 47 = 329$$

81. D

Sol. From all the three positions of the dice, adjacent faces of 4 = 1, 2, 3 and 5.

It is clear that, the digit opposite to 4 = 6.

82. C

Sol. By the careful analysis of first part of the problem figure, we find that from first to second figure, the large triangle become small and the small circle become large. In the same manner, from third to fourth figure, the large hexagon becomes small and the small pentagon becomes large as shown in figure (c)

83. D

Sol. By the careful analysis of first part of the problem figure, we find that first figure is rotated 90° clockwise to obtain the second figure. In the same manner, the third figure is rotated 90° clockwise to obtain the answer figure as given in option (d).

84. D

Sol. By the analysis of first part of the problem figure, we find that the first figure has three lines which become four in the second figure *i.e.*, from first to second figure one line is added. In the same manner, third figure has five lines which will transform into a six line figure in the fourth figure as shown in option (d).

85. A

Sol. By careful analysis of first part of the problem figure, we find that from first to second figure, the upper and lower figures interchange their places, *i.e.*, the upper figure becomes lower and the lower figure becomes upper figure. The upper figure also appears in pair after interchange of position. Similarly, from third to fourth figure the upper and lower figures interchange places and also the interchanged figures appear in pair as shown in figure (a)

86. D

Sol. By careful analysis of first part of the problem figure, we find that from first to second figure, each symbol moves one i downward and the lower most symbol become the topmost symbol. Similarly from third to fourth figure, each symbol moves c step downward and the lowermost symbol become the topmost symbol as given in option (d).

87. C

Sol. By observation.

88. A

Sol. $H = 2, \theta = 0^\circ$

$$\theta = 30H - \frac{11}{2}M$$

$$\theta = 60 - \frac{11}{2}M$$

$$M = \frac{120}{11} \text{ or } 10\frac{11}{10} \text{ min}$$

89. C

Sol. for mirror image

$$11 : 60 - 4 : 30 = 7 : 30$$

90. B

Sol. Odd days in 75 days are 5

Hence, Monday + 5 = Saturday