

Direction : Read the following questions 1-15 carefully and give answer by filling the circle of the letter denoting your select answer on the OMR answer Sheet :

1. If there is a common roots of the equation $x^2 + ax + b = 0$ and $x^2 + bx + a = 0$ then the value of $a + b$ is
 (A) 1 (B) -1 (C) 0 (D) $\frac{1}{2}$
2. A principle becomes twice of its amount in 10 years at a certain rate of simple interest, At the same rate of simple interest, that principle becomes thrice of its amount in
 (A) 15 years (B) 20 years (C) 25 years (D) 30 years
3. The length of each of two parallel chords AB and CD is 12 cm , then the distance between two chords is
 (A) 12 cm (B) 14 cm (C) 16 cm (D) 18 cm
4. The ratio of the volumes of two cubes is 1 : 27, the ration of total surface areas of wo cubes is
 (A) 1 : 6 (B) 1 : 8 (C) 1 : 9 (D) 1 : 18
5. A box has 210 coins of denomination one – rupee and fifty paise only. The ratio of their respective values is 13 : 11. The number of one-rupee is
 (A) 75 (B) 76 (C) 78 (D) 87
6. If the volume of two solid right circular cylinders are same and their height are in the ratio 1:3, then the ratio of length of radii is
 (A) $\sqrt{3} : 1$ (B) $1 : \sqrt{3}$ (C) 1 : 3 (D) 3 : 1
7. The product of $(2 - \sqrt{3})(2 + \sqrt{5})(4 + 2\sqrt{3})(\sqrt{5} - 2)$ is
 (A) 1 (B) 2 (C) 3 (D) 4
8. If $x - y \propto \frac{1}{z}, y - z \propto \frac{1}{x}, z - x \propto \frac{1}{y}$ then sum of three variation constant is
 (A) -1 (B) 0 (C) 1 (D) ± 1 .
9. Keeping the radius of a right circular cone. Same. If the height of its increased thrice, the volume of it will be increased by
 (A) 100 % (B) 200 % (C) 300 % (D) 400 %
10. In $\triangle ABC$ and $\triangle PQR$, if $\angle A = \angle Q = 50^\circ$, $AB ; QP = AC : QR$ and $\angle R = 60^\circ$, then $\angle B$ is
 (A) 50° (B) 60° (C) 70° (D) 80°
11. If the measure of two angles of a triangle are $65^\circ 20' 3''$ and $54^\circ 37' 57''$, then the circular value of third angle is
 (A) π^c (B) $\frac{\pi^c}{2}$ (C) $\frac{\pi^c}{3}$ (D) $\frac{2\pi^c}{3}$

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12. Three squares are based on the sides of a right triangle. The area of the two smaller ones are 225 sq. cm and 400 sq.cm. What is the area of the third one?
 (A) 484 sq. cm (B) 259 sq.cm (C) 576 sq.cm (D) 625 sq. cm
13. If $\sin \theta - \cos \theta = 0, 0^\circ \leq \theta \leq 90^\circ$ and $\sec \theta + \csc \theta = x$ then x will be
 (A) 1 (B) 2 (C) $2\sqrt{2}$ (D) $\sqrt{2}$
14. If 32 is removed from the data 32, 25, 23, 21, 17, 15, 13, 12, 10 then median will be
 (A) increased by 1.5 (B) decreased by 1 (C) increase by 1 (D) Same
15. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 4.7 m away from the wall. The length of the ladder is
 (A) 4.7 m (B) 9.4 m (C) 8.4 m (D) 9.7 m

Direction : In each question 16 to 25 there are two words separated by ‘:’ and other two separated from the first two by the symbol ‘::’, find the relation between two sets of words and select one word from the right side of ‘:’ which have the same relation as left set of word of ‘::’ . Fill the circle of the letter denoting yours selected answer on the OMR answer sheet.

16. Lion : Roar :: Ass : ?
 (A) Trumpet (B) Bray (C) Bark (D) Howl
17. Ocean ; Water :: Glacier : ?
 (A) Mountain (B) Cave (C) Ice (D) Refrigerator
18. Arc : Circle :: Line segment : ?
 (A) Sphere (B) Ellipse (C) Point (D) Square
19. Court : Justice :: School : ?
 (A) Student (B) Teacher (C) Education (D) Building
20. Protein : Growth :: Carbohydrates : ?
 (A) Immunity (B) Resistance (C) Diseases (D) Energy
21. USA : Congress :: Iran : ?
 (A) Cortes (B) Althing (C) Majlis (D) Storting
22. Country : President :: State : ?
 (A) Chief Minister (B) Minister of State (C) Speaker (D) Governor
23. AB : ZY :: CD : ?
 (A) UV (B) WX (C) VU (D) XW
24. 42 : 56 :: 110 : ?
 (A) 148 (B) 132 (C) 132 (D) 124

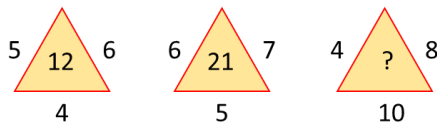
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25. $64 : 144 :: 256 : ?$

- (A) 484 (B) 412 (C) 625 (D) 402

Direction 26-55: In question 26-55, numbers are placed in figure on the basis of some rules. One place in figure is indicated by the interrogation sign(?). Find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter of alternatives in the OMR Sheet .

26.



- (A) 22 (B) 32 (C) 30 (D) 23

27.

21	56	70
45	87	84
115	180	?

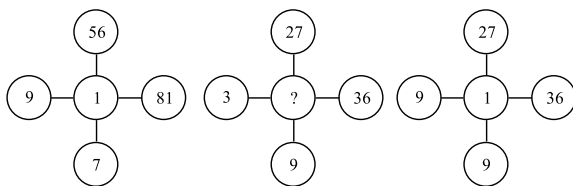
- (A) 120 (B) 0130 (C) 140 (D) 150

28.

7	14	4
4	12	9
6	24	?

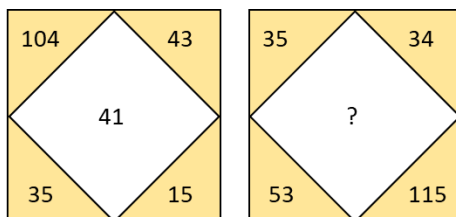
- (A) 20 (B) 18 (C) 16 (D) 14

29.



- (A) 9 (B) 8 (C) 1 (D) 7

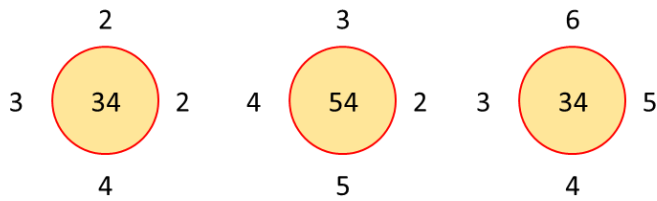
30.



- (A) 51 (B) 61 (C) 63 (D) 54

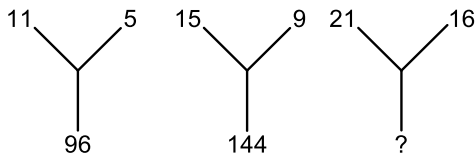
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31.



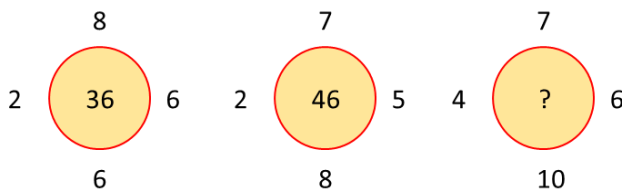
- (A) 77 (B) 78 (C) 86 (D) 88

32.



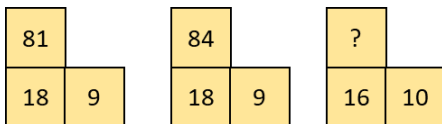
- (A) 185 (B) 165 (C) 175 (D) 195

33.



- (A) 46 (B) 42 (C) 43 (D) 44

34.



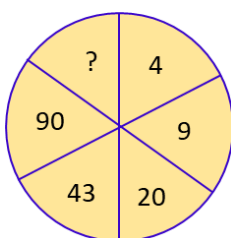
- (A) 78 (B) 80 (C) 84 (D) 82

35.

A	D	H
F	I	M
?	N	R

- (A) J (B) K (C) S (D) P

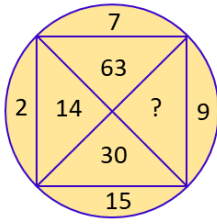
36.



- (A) 146 (B) 126 (C) 175 (D) 185

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37.



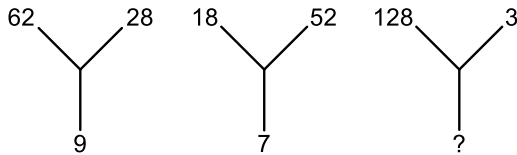
- (A) 18 (B) 33 (C) 135 (D) 145

38.

1	7	9
2	14	12
3	105	?

- (A) 117 (B) 115 (C) 127 (D) 112

39.



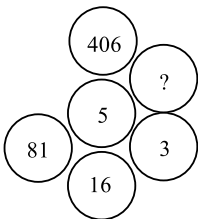
- (A) 13 (B) 16 (C) 15 (D) 17

40.

?	1	2
21	22	40
1	2	5
20	23	43

- (A) 2 (B) 3 (C) 4 (D) 5

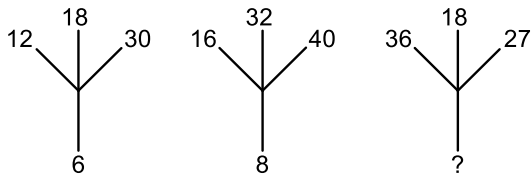
41.



- (A) 1 (B) 731 (C) 1625 (D) 2031

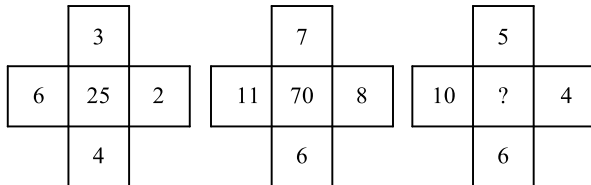
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42.



- (A) 6 (B) 9 (C) 12 (D) 18

43.



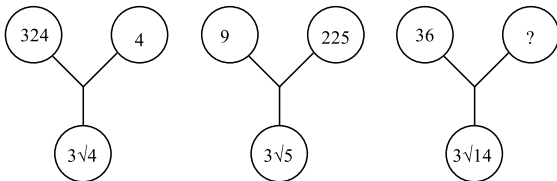
- (A) 72 (B) 73 (C) 74 (D) 75

44.

4C	3B	2A
8A	?	14B
2C	8A	7B

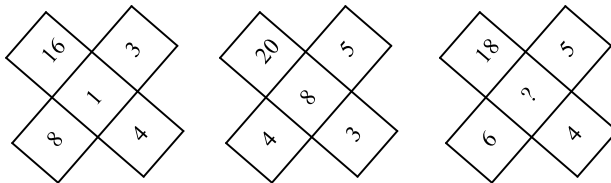
- (A) 16 A (B) 20B (C) 22D (D) 24C

45.



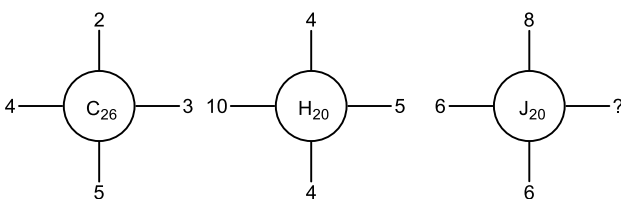
- (A) 414 (B) 424 (C) 441 (D) 484

46.



- (A) 9 (B) 7 (C) 5 (D) 3

47.



- (A) 8 (B) 9 (C) 4 (D) 7

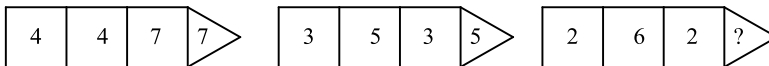
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48.

A ₂	C ₄	E ₆
G ₃	I ₅	?
M ₅	O ₉	Q ₁₄

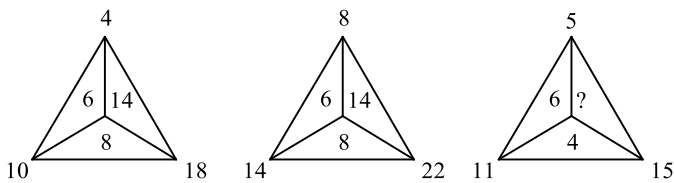
- (A) K₇ (B) M₈ (C) K₆ (D) M₇

49.



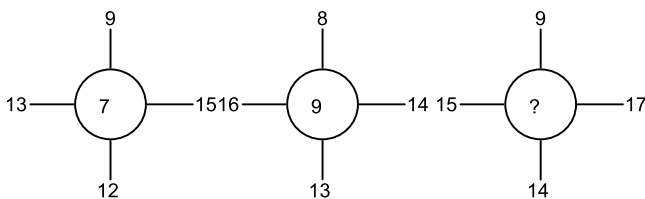
- (A) 2 (B) 3 (C) 6 (D) 4

50.



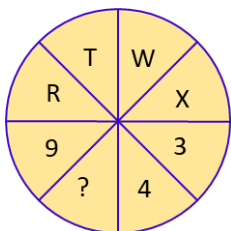
- (A) 10 (B) 14 (C) 8 (D) 6

51.



- (A) 8 (B) 7 (C) 9 (D) 6

52.



- (A) 7 (B) 6 (C) 8 (D) 5

53.

$\sqrt{4}$	$\frac{1}{2}$	$\frac{3}{2}$
$\sqrt{9}$	$\frac{4}{3}$	$\frac{5}{3}$
$\sqrt{16}$?	$\frac{11}{4}$

- (A) $\frac{4}{3}$ (B) $\frac{3}{2}$ (C) $\frac{5}{4}$ (D) $\frac{3}{4}$

54.

1	2	3	4	5
0	4	18	48	?

- (A) 72 (B) 68 (C) 100 (D) 120

55.

BD ₆	CE ₈	DF ₁₀
EG ₁₂	FH ₁₄	GI ₁₆
HJ ₁₈	IK ₂₀	?

- (A) IJ₁₈ (B) JL₁₂ (C) JK₂₄ (D) JL₂₂

Direction: In each of the following question 56 to 70, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and answer on the OMR Answer Sheet by filling the circle.

56. 95, 94, 92, 89, 58 80, ?

- (A) 78 (B) 76 (C) 74 (D) 72

57. 0, 6, 24, 60, 120, 210, ?

- (A) 260 (B) 275 (C) 310 (D) 336

58. 720, 360, 120, 30, 6, ?

- (A) 0 (B) 1 (C) 2 (D) 3

59. 34, 18, 10, 6, 4, ?

- (A) 3 (B) 2 (C) 1 (D) 0

60. 107, 97, 82, 63, ?

- (A) 42 (B) 47 (C) 37 (D) 39

61. 1, 2, 5, 12, 27, 58, ?

- (A) 116 (B) 121 (C) 125 (D) 127

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62. $\frac{2}{\sqrt{5}}, \frac{3}{5}, \frac{4}{5\sqrt{5}}, \frac{5}{25}, ?$
- (A) $\frac{6}{5\sqrt{5}}$ (B) $\frac{6}{25\sqrt{5}}$ (C) $\frac{6}{125}$ (D) $\frac{7}{25}$
63. 3, 12, 27, 48, 75, 108, ?
- (A) 118 (B) 135 (C) 147 (D) 152
64. 840, 168, 42, 14, ?
- (A) 2 (B) 3 (C) 5 (D) 7
65. 4, 5, 7, 11, 19, 35, ?
- (A) 47 (B) 57 (C) 67 (D) 77
66. 11, 10, 101, 100, 1001, 1000, ?
- (A) 10000 (B) 10001 (C) 11001 (D) 10011
67. 2, 7, 27, 107, 427, ?
- (A) 1262 (B) 1707 (C) 4027 (D) 4207
68. 3, 8, 13, 24, 41, ?
- (A) 70 (B) 75 (C) 80 (D) 85
69. 2, 8, 18, 32, 50, ?
- (A) 60 (B) 66 (C) 72 (D) 82
70. 4, 18, 7, 100, 180, 294
- (A) 38 (B) 42 (C) 48 (D) 50

Direction (71-80): In each of the questions 71 to 80 there are four items, three of which are alike by some means or other while one is out of the class. Find out the odd items and indicate your answer by filling the circle of the corresponding letter on the OMR Answer-Sheet.

71. (A) Bar
(B) Pie
(C) Rectangle
(D) Pictogram
72. (A) Hygrometer
(B) Hydrometer
(C) Diameter
(D) Barometer
73. (A) Sun
(B) Earth

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- (C) Moon
(D) Universe
74. (A) Iron
(B) Mercury
(C) Copper
(D) Aluminum
75. (A) Seismograph
(B) Anemometer
(C) Richter Scale
(D) Epicentre
76. (A) Wood
(B) Cork
(C) Stone
(D) Paper
77. (A) SARS
(B) COVID-19
(C) EBOLA
(D) Typhoid
78. (A) Herpes virus
(B) Papilloma Virus
(C) Corona Virus
(D) Pox virus
79. (A) Arc
(B) Diagonal
(C) Chord
(D) Diameter
80. (A) BCIUX
(B) BDAYO
(C) BEMUZ
(D) BQMPX

Direction (81-85): Choose the correct one and given the answer by filling the circle of the letter denoting your selected answer on the OMR Answer Sheet.

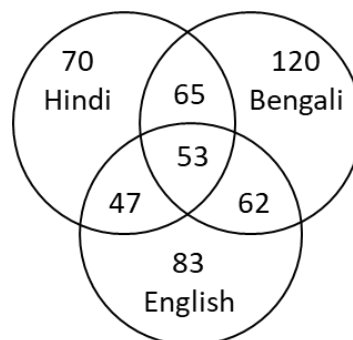
81. Ibrahim ranks 8th in a class of 35 students. What is his rank from the last?
(A) 26th (B) 27th (C) 29th (D) 28th
82. If the digit 12 of a clock is pointing towards East, then in which direction will digit 3 point?
(A) West (B) South (C) North (D) South-West

83. Which one is the most accurate laboratory methods for detecting COVID-19 corona virus?
 (A) RT-PCR (B) RDT (C) PCR (D) Serology Test
84. Rahim walks 15 km towards North, From there he walks 9km towards South. Then he walks 8km towards East. How far and in which direction is he now from his starting point?
 (A) 7km North-East (B) 10km North-East (C) 10km South-West (D) 7km South- East
85. If 1st January, 2008 is Tuesday then what day of the week lies on 1st January, 2009?
 (A) Wednesday (B) Thursday (C) Sunday (D) Monday

Directions (86-90): Here the four fundamental operations +, −, × and ÷ are represented by symbols different from the usual one. You have to solve the problem by substituting the real symbol accordingly and indicate your answer by filling the Circle of the letter denoting your selected answer on OMR Answer sheet.

86. If L denotes ×, M denotes +, P denotes + and Q denotes −, then 7P24M8Q6M2L3 =
 (A) 1 (B) 2 (C) 3 (D) 4
87. If A means '−', B means '+', C means '+' and D means '×', then 15B3C24A12D2 =
 (A) 4 (B) 2 (C) 5 (D) 3
88. If A for '+', M for '×', D for '+', G for '>' L for '<' then which of the following will be logically lcorrect?
 (A) 4A3M2L4D2M6 (B) 4A3M2D3L4M6 (C) 4A5M4L6D2A8 (D) 4A5D3G6A2M3
89. Select the correct combination of mathematical signs to replace * signs and to balance the given equation:
 $(5 * 6) * 5 * 8 = 14$
 (A) ×, +, ÷ (B) ×, +, ÷ (C) +, ×, ÷ (D) +, ÷, ×
90. If '+' means '÷', '−' means '×', '÷' means '+' and '×' means '−', then $36 \times 12 + 4 + 6 + 2 - 3 =$
 (A) 28 (B) 32 (C) 39 (D) 42

Direction (91-95): The diagram shows the survey on a sample of 500 persons with respect to their knowledge of Bengali, Hindi and English.



91. How many persons know the Bengali and English Language but not know the Hindi Language?
 (A) 53 (B) 62 (C) 65 (D) 37
92. How many person know all the three Languages?
 (A) 65 (B) 62 (C) 53 (D) 47

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93. How many persons who do not know Hindi Language?
 (A) 265 (B) 200 (C) 255 (D) 201
94. What is the ratio of those who know all the three Languages to those who do not know Hindi Language?
 (A) $\frac{3}{5}$ (B) $\frac{2}{5}$ (C) $\frac{1}{5}$ (D) $\frac{4}{5}$
95. What is the ratio of those who know Bengali Language to those who do not know Bengali Language?
 (A) 2 : 5 (B) 3 : 5 (C) 4 : 5 (D) 1 : 5

Direction (96 & 97): Choose the correct one

96. If $M \times N$ mean M is the daughter of N; $M + N$ means M is the father of N; $M - N$ means M is the Mother of N and $M - N$ means M is the brother of N then
 $P + Q + R - T \times K$ indicates which relation of P to K?
 (A) Daughter-in-Law (B) Sister-in-Law (C) Mother-in-Law (D) Aunt
97. Pointing to a person, a man said to a women, "His mother is the only daughter of your father". How was the woman related to the person?
 (A) Wife (B) Daughter (C) Aunt (D) Mother

Direction (98-100): Read the following information and answer the questions given below.

There are six children playing football namely A, B, C, D, E and F, A and E are brother, F is the sister of E; C is the only son of A's uncle; B and D are the daughters of the brother of C's father.

98. How many female players are there?
 (A) Two (B) Three (C) Four (D) Five
99. How C is related to F?
 (A) Brother (B) Uncle (C) Son (D) Cousin
100. How D is related to A?
 (A) Cousin (B) Sister (C) Niece (D) Uncle