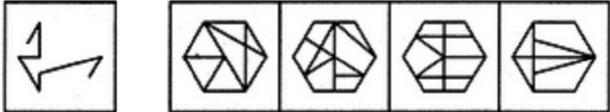
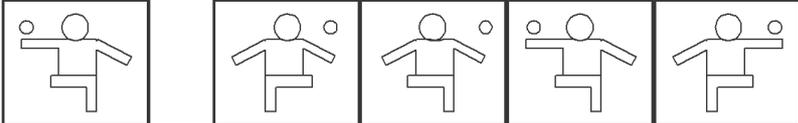


HAVE CONTROL → HAVE PATIENCE → HAVE CONFIDENCE ⇒ 100% SUCCESS

BEWARE OF NEGATIVE MARKING

MENTAL ABILITY

This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

- The given question is based on the following alphabet series.
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Which letter is seventh to the right of the eighteenth letter from the right end of the alphabet :
(1) K (2) O (3) R (4) P
- Choose the odd one out.
(1) Flute (2) Guitar (3) Sitar (4) Violin
- If the word MECHANIC is coded as 'EMHCNACI' in a certain code language, then how will 'WESTSIDE' be coded in the same language ?
(1) EWTSISED (2) EWTSSIED (3) EWTSISDE (4) WETSSIED
- You go North, turn right, then right again and then go to the left. In which direction are you now?
(1) North (2) South (3) East (4) West
- Find out the alternative figure which contains figure (X) as its part

(X) (1) (2) (3) (4)
- Which one of the four interchanges in signs and numbers would make the given equation correct.
 $(6 \div 2) \times 3 = 0$
(1) \div and \times , 2 and 3 (2) \times to $-$, 2 and 6
(3) \div and \times , 2 and 6 (4) \times to $-$, 2 and 3
- Find the mirror image for the figure (X):

(X) (1) (2) (3) (4)
- Which letter should be ninth letter to the left of ninth letter from the right end, if the first half of the english alphabet is reversed?
(1) D (2) E (3) F (4) I
- Find the missing term.
2, 12, 36, 80, 150, ?
(1) 194 (2) 210 (3) 180 (4) 252

17. Solve the given equation to find the answer

$$(370 \div 70) + 309 - 847 + 86 = ?$$

- (1) 446.72 (2) 464.7 (3) 456 (4) -446.71

18. Choose the correct mirror image of the given figure (X) from amongst the four alternatives.



- (X) (1) (2) (3) (4)

19. In a row of 40 girls, when Komal was shifted to her left by 4 places her number from the left end of the row became 10. What was the number of Swati from the right end of the row if Swati was three places to the right of Komal's original position ?

- (1) 22 (2) 23 (3) 25 (4) 24

20. Find the missing term.

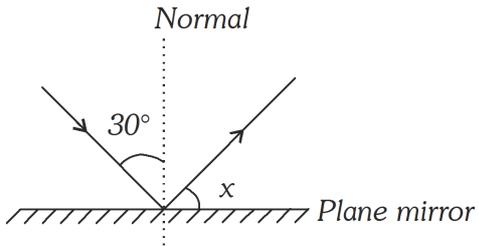
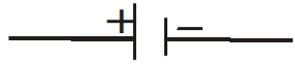
$$22, 24, 28, ?, 52, 84$$

- (1) 38 (2) 36 (3) 42 (4) 46

PHYSICS

This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

21. A house-owner replaces a failed fuse for the lights of the house. When the lights are switched on, the second fuse also fails. The house-owner then uses a third fuse with a higher rating than the previous two. Why is this not a sensible thing to do?
- (1) Fuses only allow the circuit to work if the rating is exactly right.
 (2) The third fuse will melt because the rating is too high.
 (3) Using a fuse with too high rating may cause electric shocks.
 (4) The circuit may work, but the fault is not corrected.
22. An instrument used to measure atmospheric pressure is :
- (1) Anemometer (2) Barometer (3) Seismometer (4) Manometer
23. In the Kelvin temperature scale, 0 K is the lowest temperature that an object can have, known as ____.
- (1) Volume of zero (2) Negative temperatures
 (3) Zero calories (4) Absolute zero
24. Which of the following is/are not always necessary to observe a shadow?
- (1) Source of light (2) Sun (3) Screen (4) Opaque object
25. Motion of screw while going in to the wood is an example of
- (1) linear and circular motion (2) rotational and curvilinear motion
 (3) rotational and linear motion (4) rotational and circular motion
26. Select the one in which heating effect of current is not used.
- (1) Electric iron (2) Electric immersion heater
 (3) Electric geyser (4) A battery
27. The winds of the earth do not flow in the exact “north to south” or “south to north” directions because
- (a) Of the seasons of the earth
 (b) Of the shape of the earth
 (c) Of the rotation of the earth
- (1) (a) only (2) (b) only
 (3) (c) only (4) (a) and (c) both
28. The number of divisions between melting point of ice and boiling point of water on Fahrenheit scale is:
- (1) 100 (2) 80 (3) 273 (4) 180

29.  The value of x is
 (1) 30° (2) 45° (3) 90° (4) 60°
30. Which of the following object does not have more than one type of motion?
 (1) Screw (2) Scooter's wheel
 (3) See-saw (4) Soccer ball
31. Fahrenheit is a temperature scale in which water freezes at _____ and boils at _____.
 (1) 0 degrees; 100 degrees (2) 32 degrees; 212 degrees
 (3) 32 degrees; 180 degrees (4) 180 degrees; 212 degrees
32. The correct symbol battery is
 (1)  (2) 
 (3)  (4) 
33. A limited heavy storm which contains rains, winds and thunder is called
 (1) Lightning (2) Thunder
 (3) Thunder Storm (4) Hurricane
34. The freezing and boiling point of water on kelvin scales are :
 (1) 373 K, 273 K (2) Zero, 373 K (3) 273 K, 373 K (4) 32 K, 212 K
35. In pin hole camera, as size of the hole increases, the image gets
 (1) bigger (2) sharper (3) hazy (4) smaller
36. The distance between Ria's house and her school is 1540 meters. Convert this distance in km.
 (1) 15.4 km (2) 1.54 km (3) 0.0154 km (4) 0.1540 km
37. As shown in figure what do the longer line and shorter line respectively represent in the symbol of electric cell :



- (1) Positive terminal, Positive terminal (2) Positive terminal, Negative terminal
 (3) Negative terminal, Positive terminal (4) Negative terminal, Negative terminal

CHEMISTRY

This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

41. Which among the following is an example of mineral acid?
- (1) Lactic acid (2) Hydrochloric acid
(3) Citric acid (4) Formic acid
42. Select the correct statement for rusting of iron?
- (1) It is a physical change
(2) New substance is not formed
(3) It is a chemical change
(4) It is both an example of physical as well as chemical change
43. The last step in waste water treatment is a _____ process.
- (1) Biological (2) Chemical (3) Mechanical (4) Physical
44. An example of natural fibre among the following is/are:
- (1) Polyester (2) Silk (3) Orlon (4) Nylon
45. Turmeric changes to _____ color in basic medium.
- (1) Pink (2) Green (3) Brown (4) Magenta
46. Which of the following is correct for physical changes?
- (1) New substances are always formed in physical changes
(2) No new substance is formed
(3) They are always permanent
(4) They are always irreversible
47. Which of the following is not a breed of sheep?
- (1) Murrah (2) Lohi (3) Marwari (4) Nali
48. Which of the following is used in fire extinguishes?
- (1) Calcium carbonate (2) Sodium carbonate
(3) Sodium bicarbonate (4) Zinc carbonate
49. An example of chemical change is :
- (1) Melting of ice (2) Dropping potassium into water
(3) Dissolving sugar in water (4) Glowing of an electric bulb
50. Acids have a _____ taste.
- (1) Sour (2) Salty (3) Bitter (4) Sweet

51. The process used to remove dirt and sand in sewage treatment plant is :
- (1) Chlorination (2) Filtration (3) Aeration (4) Sedimentation
52. Which of the following is not a type of silk?
- (1) Mulberry silk (2) Tassar silk (3) Mooga silk (4) Moth silk
53. The common name of KOH is
- (1) Caustic potash (2) Caustic soda
(3) Baking soda (4) Baking powder
54. Wool fibre cannot be obtained from:
- (1) Goat (2) Llama (3) Alpaca (4) Moth
55. Litmus, a natural indicator, is extracted from:
- (1) China rose (2) Turmeric (3) Lichens (4) Petunia leaves
56. Which of the following is a physical change?
- (1) Boiling of water (2) Combustibility
(3) Aerial oxidation (4) Reaction with water
57. Sewage is a kind of ?
- (1) Gaseous waste (2) Liquid waste
(3) Agricultural waste (4) Mining waste
58. Which substance is used as an antacid?
- (1) Sodium hydroxide (2) Magnesium hydroxide
(3) Potassium hydroxide (4) Lithium hydroxide
59. Silk is derived from:
- (1) Cocoon (2) Pupa (3) Egg (4) Moth
60. Chemical name of 'oil of vitriol' is:
- (1) Sulphuric acid (2) Sodium carbonate
(3) Calcium oxide (4) Sodium oxide

BIOLOGY

This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

-
61. In photosynthesis :
- (1) CO₂ is produced (2) Glucose is produced
 (3) O₂ is used (4) Nitrogen is produced
62. The process by which the undigested food is removed from the body is called -
- (1) Egestion (2) Ingestion (3) Assimilation (4) Absorption
63. Skin is an accessory organ of respiration in :
- (1) Humans (2) Frog (3) Rabbit (4) Lizard
64. Blood corpuscles involved in blood clotting :
- (1) RBCs (2) WBCs (3) Platelets (4) Plasma
65. The animal which lives in polar regions is :
- (1) Kangaroo rat (2) Frog (3) Polar bear (4) Fish
66. Deforestation leads to decrease in :
- (1) Rain fall (2) Flood (3) Landslide (4) Desertification
67. After fertilization the ovary becomes _____ and ovules become _____ :
- (1) Seeds and fruit (2) Fruit and seeds
 (3) Embryo and seeds (4) Seeds and embryo
68. The deposits of clay, sand and silt particles left by rivers make :
- (1) Black soil (2) Mountain soil (3) Alluvial soil (4) Red soil
69. Minimum photosynthesis takes place in _____ light.
- (1) Green (2) Red (3) Blue (4) Violet
70. The process of taking or consuming and utilizing food is called—
- (1) Nutrition (2) Transportation (3) Reproduction (4) Circulation
71. The respiratory organ(s) of cockroach is/are :
- (1) Gills (2) Lungs (3) Trachea (4) Skin
72. The colour of blood is red due to the presence of :
- (1) Chlorophyll (2) Anthocyanin (3) Haemoglobin (4) Platelets
73. 'Adjustment to environment' is called :
- (1) Adaptation (2) Mimicry (3) Hibernation (4) Aestivation

74. The water holding capacity is highest in
- (1) Loamy soil (2) Sandy soil
(3) Clayey soil (4) Mixture of sand and loam
75. The folds presents in small intestine which increase the area of absorption is called as–
- (1) Cristae (2) Villi (3) Cilia (4) Flagella
76. In earthworm exchange of gases takes place through -
- (1) Water (2) Gills (3) Moist skin (4) Spiracles
77. The process of loss of water in vapour form from the stomata, is called -
- (1) Transportation (2) Transpiration (3) Translocation (4) Conduction
78. Water available to the plant roots for absorption is–
- (1) Hygroscopic water (2) Gravitational water
(3) Capillary water (4) Chemical bound water
79. Which of the following causes change in weather?
- (1) Sun (2) Man (3) Wood (4) Television
80. The main cause of soil erosion is :
- (1) afforestation (2) less rain
(3) thinning of ozone layer (4) deforestation

MATHEMATICS

This section contains **40 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

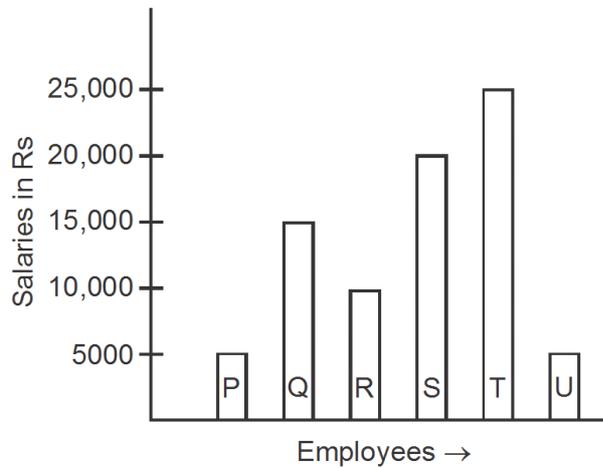
81. Write the coefficient of y in the $-7xy$:

- (1) 0 (2) $1y$ (3) $-7x$ (4) $8x$

82. $\triangle ABC \cong \triangle PQR$, which of the following is true ?

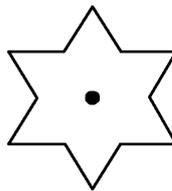
- (1) $AB = QR$ (2) $BC = PR$ (3) $AB = PQ$ (4) $AB = PR$

83. Given below is a bar graph about the salaries of 6 employees in a company. Number of employees having salary more than Rs.10,000 is ?



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

84. The order of rotational symmetry of the following figure when rotated about the marked point (•) is:



- (1) 3 (2) 4 (3) 6 (4) 8

85. To bisect line segment which of the following is not correct.

- (1) arc length should be less than half (2) arc length should be more than half
(3) arc length equal to line segment (4) arc length more than line segment

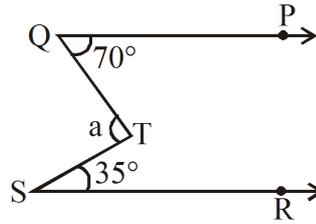
86. The sum of two numbers is 31.021. If one of them is 11.56, then the other number is

- (1) 19.461 (2) 17.461 (3) 18.641 (4) 19.561

87. The area of a rectangle is 650 cm^2 and its breadth is 13 cm. Find the length of rectangle.

- (1) 40 cm (2) 50 cm (3) 55 cm (4) 35 cm

88. In figure, if $QP \parallel SR$, then the value of a is



- (1) 70° (2) 100° (3) 35° (4) 105°

89. Which of the following values are equal?

- I. 1^4
- II. 4^0
- III. 4^{-1}
- IV. 4^1

- (1) I and II (2) II and III (3) I and III (4) I and IV

90. If $\frac{-5}{7} = \frac{x}{28}$, then the value of x :

- (1) -20 (2) 20 (3) 15 (4) -15

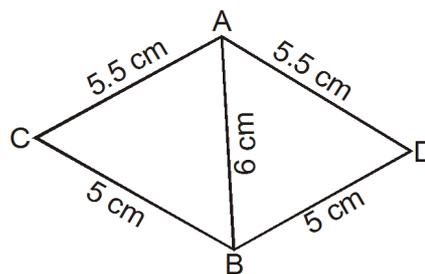
91. The sum of numerator & denominator of a fraction is 18. If 9 is added to numerator it become 1 less than 3 times the denominator. Find the fraction.

- (1) $\frac{7}{11}$ (2) $\frac{11}{7}$ (3) $\frac{11}{14}$ (4) $\frac{14}{11}$

92. What should be subtracted to $xy - 3yz + 4zx$ to get $4xy - 3zx + 4yz + 7$?

- (1) $3xy - 7yz - 7zx + 7$ (2) $-3xy - 7yz + 7zx - 7$
 (3) $3xy - 7yz - 7zx - 7$ (4) $3xy + 7yz - 7zx$

93. In the following figure, the lengths of the sides are indicated along side. By applying SSS condition, determine which are congruent.

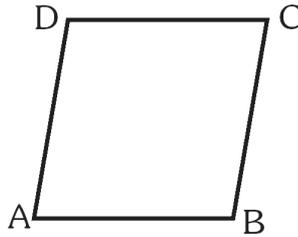


- (1) $\triangle ABC \cong \triangle BAD$ (2) $\triangle BAC \cong \triangle BDA$
 (3) $\triangle ABC \cong \triangle BDA$ (4) $\triangle ABC \cong \triangle ABD$

94. If the mean of five observations $x, x + 2, x + 4, x + 6, x + 8$ is 11. Find the mean of first three observations?

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

95. In rhombus ABCD, line of symmetry is,



- (1) BC (2) AB (3) CD (4) AC

96. If the angles of a triangle are in the ratio 2 : 3 : 5, then the triangle could be

- (1) Acute (2) Obtuse (3) Right angled (4) Isosceles

97. For positive integers a, b and c, find the value of $a \times b \times c$ such that

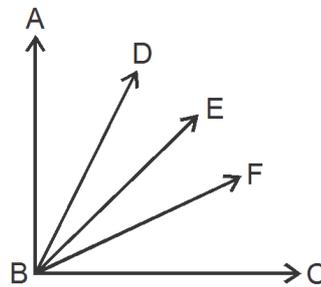
$$\frac{3}{8} = \frac{1}{a + \frac{1}{b + \frac{1}{c}}}$$

- (1) 3 (2) 4 (3) 6 (4) 2

98. Two adjacent sides of a parallelogram are 15 cm and 10 cm. If the distance between the longer sides is 8 cm, find the distance between the shorter sides.

- (1) 6 cm (2) 15 cm (3) 10 cm (4) 12 cm

99. In the given figure, ABC is a right angle. $\angle ABD = 15^\circ$ and $\angle DBE = 20^\circ$ and $\angle FBC = 12^\circ$, then find ?



- (1) 53° (2) 43° (3) 57° (4) 47°

100. 0.00003×10^6 is

- (1) greater than 1 (2) less than 1
(3) between 0 and 1 (4) between -1 and 0

101. The rational number $\frac{43}{99}$ in decimal form is :

- (1) $0.4\bar{3}$ (2) 0.43 (3) $0.\overline{43}$ (4) 43

102. Solve $3(2x - 1) + 25\%$ of $x = 97$

- (1) 15 (2) 10 (3) 12 (4) 16

103. The length of a rectangle is three times its width and its perimeter is 96 m. The length is

- (1) 12 m (2) 24 m (3) 36 m (4) 48 m

104. If $4^x - 4^{x-1} = 48$ then x^2 is :

- (1) 4 (2) 9 (3) 16 (4) 25

105. Factorize : $x^2 - 7x - 18$:

- (1) $(x - 3)(x - 4)$ (2) $(x - 9)(x - 2)$ (3) $(x + 9)(x - 2)$ (4) $(x - 9)(x + 2)$

106. If $\triangle ABC \cong \triangle PQR$ and $\angle A = 60^\circ$, $\angle Q = 65^\circ$, then $\angle C =$

- (1) 70° (2) 65° (3) 60° (4) 55°

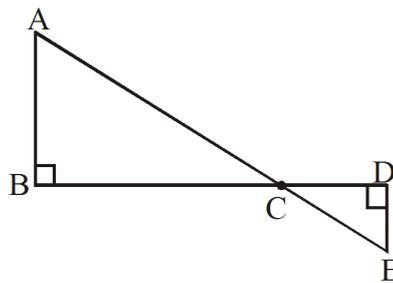
107. $\frac{3}{15}, \frac{13}{15}, \frac{23}{15}$ are examples of :

- (1) Proper fractions (2) Equivalent fractions
(3) Like fractions (4) Unlike fractions

108. If the length and breadth of a rectangle are doubled, then its perimeter is

- (1) trebled (2) doubled (3) halved (4) four times

109. In the diagram, AE and BD are straight lines that intersect at C. If $BD = 16$ cm, $AB = 9$ cm, $CE = 5$ cm, and $DE = 3$ cm, then the length of AC is



- (1) 11 cm (2) 12 cm (3) 15 cm (4) 17 cm

110. If $m = (-1)^{2011}$ and $n = (-1)^{2008}$, then $m + 2n + mn =$

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

111. What number should be added to $-\frac{6}{5}$ so as to get $\frac{2}{3}$?

- (1) $\frac{28}{15}$ (2) $\frac{5}{28}$ (3) $\frac{15}{28}$ (4) $-\frac{28}{15}$

112. Solve for x : $3(x - 1) = 2x - 11$.

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

113. By how much is $p^2 + 3p + q$ greater than $3p^2 - q$?

- (1) $2p^2 - 3p - 2q$ (2) $p^2 + 3p$ (3) $p^2 + 3p + q$ (4) $-2p^2 + 3p + 2q$

114. In $\triangle ABC$ and $\triangle PQR$, $AB = PQ$, $BC = QR$, $AC = PR$ then $\triangle ABC \cong \triangle PQR$ by

- (1) RHS (2) SAS (3) SSS (4) ASA

115. Pax wants to make fruit punch for a party using the recipe below.

Fruit Punch
1.25 L orange juice 2.5 L cranberry juice 1 L ginger ale

He will make three times the amount of fruit punch listed in the recipe. What is the total amount of fruit punch, in litres, that Pax will make?

- (1) 4.53 (2) 4.75 (3) 12.90 (4) 14.25
116. The area of two circles are in the ratio 16:25. Find the ratio of their circumferences.
- (1) 3 : 4 (2) 4 : 3 (3) 4 : 5 (4) 5 : 4
117. One of the angles forming a linear pair is an obtuse angle. What kind of angle is the other ?
- (1) Acute angle (2) Obtuse angle (3) Right angle (4) Reflex angle
118. $5^1 + 5^2 + 5^3 + 5^4$ is equal to
- (1) 690 (2) 680 (3) 780 (4) 750
119. The sum of additive inverse of $\left(\frac{2}{3} - \frac{1}{3} + \frac{5}{6} \text{ of } 2\right)$ and product of $-12, \frac{2}{3}$ and $\frac{5}{8}$ is
- (1) $-\frac{20}{3}$ (2) $-\frac{10}{3}$
(3) $\frac{10}{3}$ (4) $\frac{20}{3}$
120. If $a = b + 4$ what is value of $3a - 3b + 3$
- (1) 15 (2) 12 (3) 9 (4) 8

SAMPLE PAPER ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A.	4	1	1	3	4	4	4	2	4	3	3	2	3	2	3	3	4	1	4	2
Q.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A.	4	2	4	2	3	4	3	4	4	3	2	3	3	3	3	2	2	2	4	1
Q.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A.	2	3	2	2	3	2	1	3	2	1	4	4	1	4	3	1	2	2	1	1
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
A.	2	1	2	3	3	1	2	3	1	1	3	3	1	3	2	3	2	3	1	4
Q.	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
A.	3	3	1	3	1	1	2	4	1	1	2	2	4	3	4	3	2	4	2	1
Q.	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A.	3	4	3	2	4	4	3	2	3	3	1	1	4	3	4	3	1	3	2	1