



Class – VII

ENTRANCE TEST CUM SCHOLARSHIP (SAMPLE PAPER-3)

[Time: 3 Hours]

[Max Marks: 450]

A.General:

- 1.This booklet is a Question Paper containing 150 questions.*
- 2.Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones and electronic gadgets in any form are not allowed to be carried inside the examination hall.*
- 3.The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.*
- 4.DO NOT TAMPER WITH THE OMR OR THE BOOKLET.*
- 5.Please fill your roll number correctly in the OMR sheet (answer sheet).*
- 6.Both Question Paper and OMR Answer Sheet will be submitted after completion of this examination.*

B.Question Paper Format and marking scheme:

- 1.The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Biology, Part V: Mathematics).*
- 2.Each Question carries +3 marks for correct answer and -1 mark for incorrect answer.*

MAT

Directions : (Q. Nos. 1-2) In the following questions, there is an address which has been reproduced against (a), (b), (c) and (d), three of which have some mistakes or the other. The one without any mistake is your answer.

1. Mr. Ramachandran, 1068/90, A.F.O., Bangalore (Karnataka)
 - (a) Mr. Ramachandren, 1068/90, A.F.O. Bangalore (karnataka)
 - (b) Mr. Ramachandran, 106/8/90, A.F.O. Bangalor (Karnataka)
 - (c) Mr. Ramachandran, 1086/90, A.F.O. Banglore (Karnataka)
 - (d) Mr. Ramachandran, 1068/90, A.F.O. Bangalore (Karnataka)
2. Tarasankar Rastogi, A-22, Indrant Road, Sundargarh 436065
 - (a) Tarasankar Rastogi, A-22, Indranit Road, Sundargarh 436065
 - (b) Tarashankar Rastogi, A-22, Indrant Road, Sundargarh 436065
 - (c) Tarasankar Rastogi, A-22, Indrant Road, Sundarragarh 436065
 - (d) Tarasankar Rastogi, A-22, Indrant Road, Sundargarh 436065

Directions: (Q. Nos. 3-4). From amongst the given alternatives, select the one in which the set of numbers is most like the set of numbers given below:

3. (7, 12, 22, 37)
 - (a) 2, 7, 12, 32
 - (b) 3, 8, 18, 33
 - (c) 4, 8, 19, 34
 - (d) 8, 13, 22, 38
4. (10, 12, 15)
 - (a) (21, 23, 27)
 - (b) (30, 32, 36)
 - (c) (60, 62, 66)
 - (d) (68, 70, 73)

Directions : (Q. Nos. 5-7). Find the odd word/letter/numbers from the given responses.

5. (a) Yearly (b) Quickly (c) Weekly (d) Monthly
6. (a) EPH (b) FQI (c) HSK (d) KWO
7. (a) ECDBA (b) OMNLK (c) WUVTS (d) SQRPO
8. If GECA means 8642, then HFBD means
 - (a) 9735
 - (b) 7953
 - (c) 7935
 - (d) 5379
9. A man said to a lady, "Your mother's husband's sister is my aunt". How is the lady related to man?
 - (a) Sister
 - (b) Mother
 - (c) Daughter
 - (d) Grand daughter

Directions: (Q. Nos. 10-14) Read the following information carefully and answer the questions.

At a party A, B, C, D and E are sitting in a circle. The group comprises a professor, an industrialist and a businessman. The businessman is sitting in between the industrialist and his wife D. A, the professor is married to E, who is the sister of B. The industrialist is seated to the right of C. Both the ladies are unemployed.

10. What is A to B?
 - (a) Brother
 - (b) Uncle
 - (c) Brother-in-law
 - (d) Cannot be determined
11. A is sitting to the right of
 - (a) the industrialist
 - (b) his wife
 - (c) D
 - (d) Cannot be determined
12. Who is the industrialist?
 - (a) D
 - (b) A
 - (c) B
 - (d) Cannot be determined

13. Who is unmarried in the group?
 (a) Professor (b) Industrialist (c) Businessman (d) Cannot be determined

14. Who among them must be graduate ?
 (a) B (b) A (c) C (d) None of these

Directions: (Q. Nos. 15-18) Read the following information carefully and answer the questions.

Asha and Charu are good in Mathematics and Athletics. Deepa and Asha are good in Athletics and Studies, Charu and Beena are good in General Knowledge and Mathematics. Deepa, Beena and Ela are good in Studies and General Knowledge. Ela and Deepa are good in Studies and Art.

15. Who is good in Studies, General Knowledge, Athletics and Art?
 (a) Asha (b) Beena (c) Charu (d) Deepa

16. Who is good in Studies, General Knowledge and Mathematics?
 (a) Asha (b) Beena (c) Charu (d) Ela

17. Who is good in Studies, Mathematics and Athletics?
 (a) Asha (b) Beena (c) Charu (d) Deepa

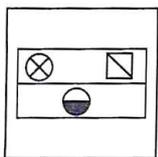
18. Who is good in Athletics, General Knowledge and Mathematics?
 (a) Asha (b) Beena (c) Charu (d) Deepa

19. Dhaka : Bangladesh :: Lira : ?
 (a) South Korea (b) Nepal (c) Italy (d) North Korea

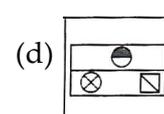
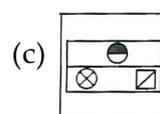
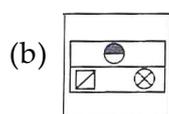
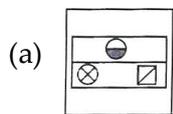
20. Yogeshwar Dutt : Wrestling :: Saina Nehwal : ?
 (a) Badminton (b) Chess (c) Table Tennis (d) Football

Directions (21-23) : In each of the following questions, choose the correct water image for the figure 'X'.

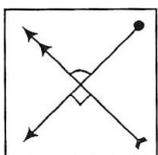
21. Problem Figure



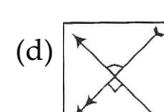
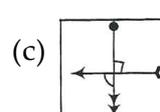
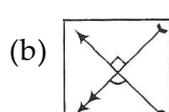
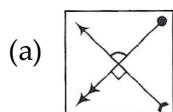
X



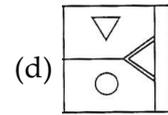
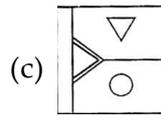
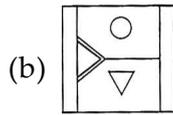
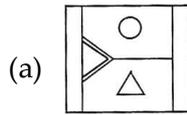
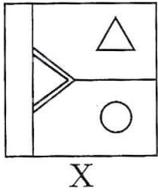
22. Problem Figure



X

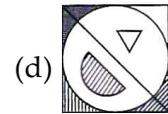
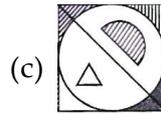
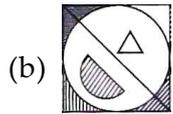
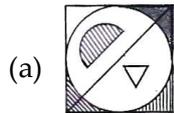
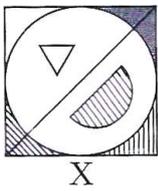


23. Problem Figure

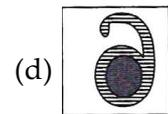
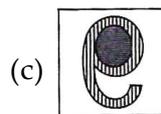
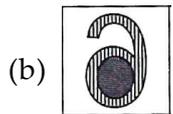
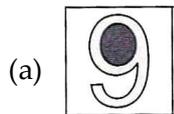
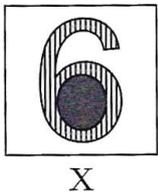


Directions (24-26) : In each of the following questions, choose the correct mirror image for the figure 'X'.

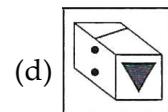
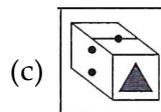
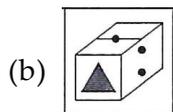
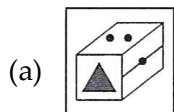
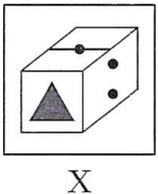
24. Problem Figure



25. Problem Figure

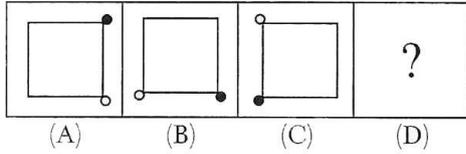


26. Problem Figure

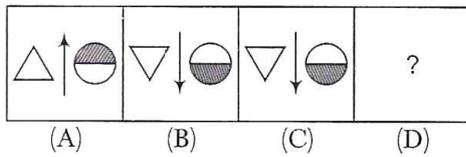


Directions (27-28) : Select the figure from option figures which will continue the same series as given in the problem figures.

27. Problem Figure

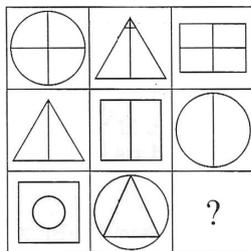


28. Problem Figure

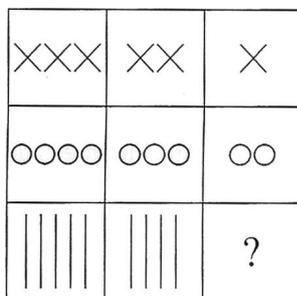


Directions (29-31) : In each of the following questions, find out which of the answer figure is complete is the figure matrix?

29. Problem Figures

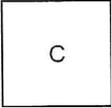
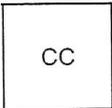
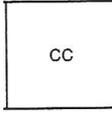
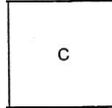


30. Problem Figures



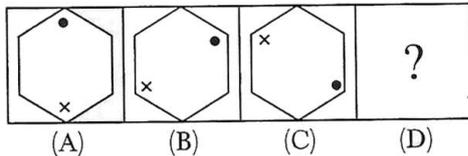
31. Problem Figures

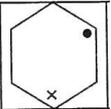
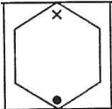
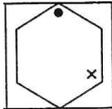
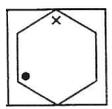
AA	BB	CC
Aa	Bb	Cc
aa	bb	?

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

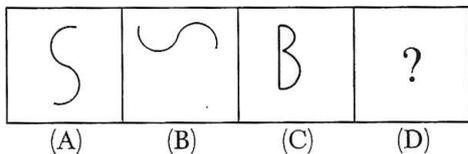
Directions (32-33) : As per given relationship between figure (A) and (B), find the figure which establish a similar relationship between (C) and (D).

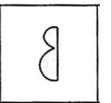
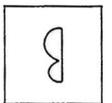
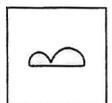
32. Problem Figures



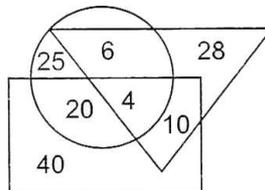
- (a)  (b)  (c)  (d) 

33. Problem Figures



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

Directions (34-35) : On the basis of the following Venn-diagram, answer the questions given below. The rectangle represents artists, the circle represents players and the triangle represents doctors,



34. How many artists are players but not doctors?

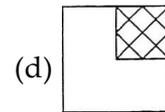
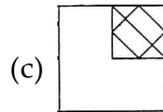
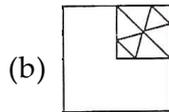
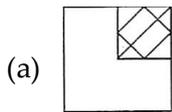
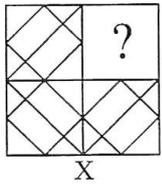
- (a) 25 (b) 20 (c) 10 (d) 30

35. How many artists are neither player nor doctor?

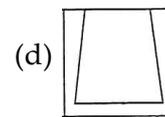
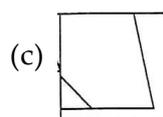
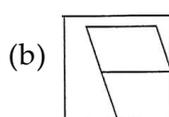
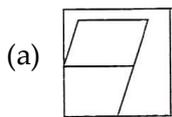
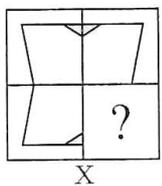
- (a) 40 (b) 10 (c) 30 (d) 25

Directions (36-38) : From the given alternatives, complete the problem figure.

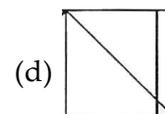
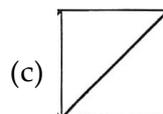
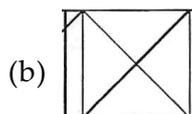
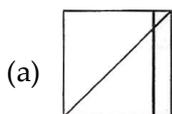
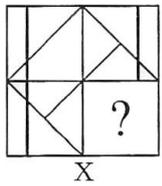
36. Problem Figure



37. Problem Figure

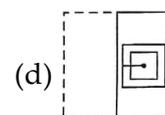
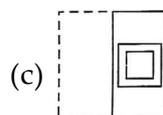
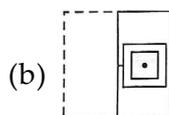
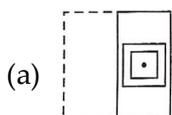
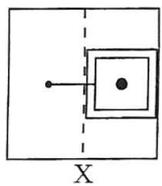


38. Problem Figure

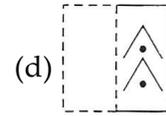
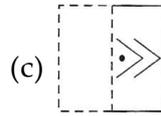
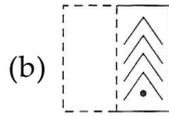
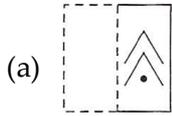
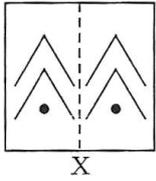


Directions (39-41) : Find which of the alternative from the answer figures will follow, if the problem figure is folded in a certain defined pattern along the dotted line?

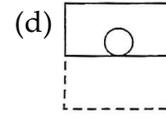
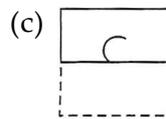
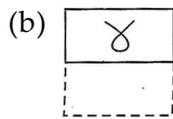
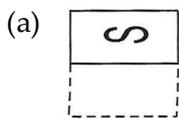
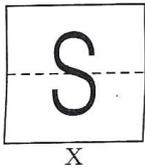
39. Problem Figure



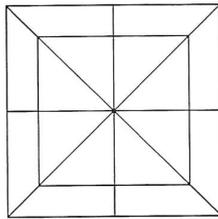
40. Problem Figure



41. Problem Figure



42. How many squares does the following figure contain?



(a) 15

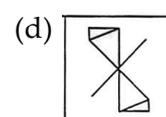
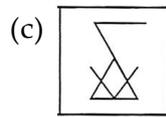
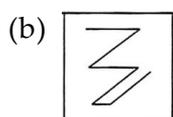
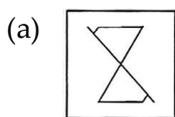
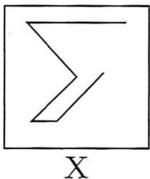
(b) 10

(c) 21

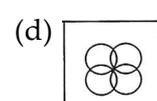
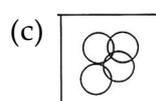
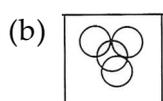
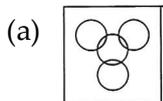
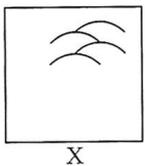
(d) 12

Directions (43-46) : Figure (X) is embedded in which of the following option figures :

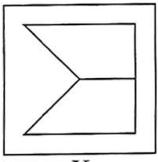
43. Problem Figures



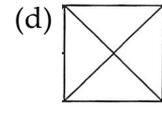
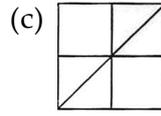
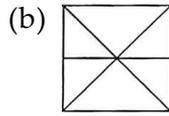
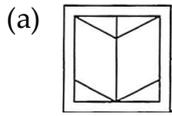
44. Problem Figures



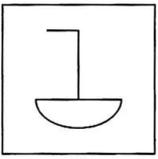
45. Problem Figures



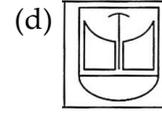
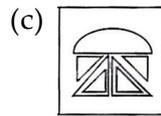
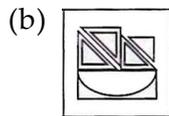
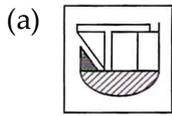
X



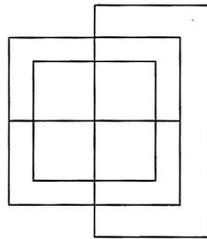
46. Problem Figures



X



47. What is the number of straight lines in the following figure?



(a) 13

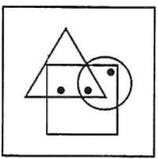
(b) 15

(c) 17

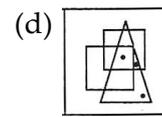
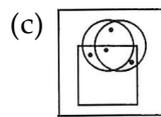
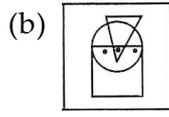
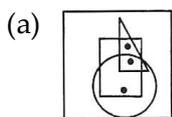
(d) 19

Directions (48-51) : In each of the following questions, there is a diagram(X) in which one or more points have been placed in certain positions. Examine the placement of these points carefully. From the four choices, select the one in which the placement of points is similar to that in the diagram.

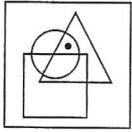
48. Problem Figure



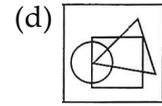
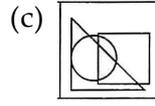
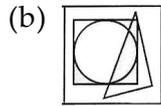
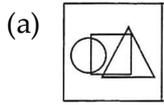
X



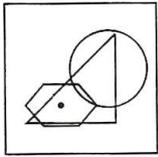
49. Problem Figure



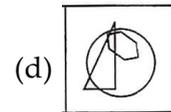
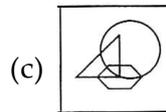
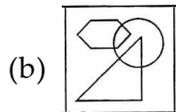
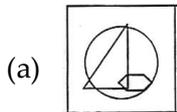
X



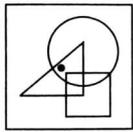
50. Problem Figure



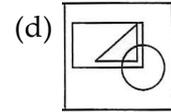
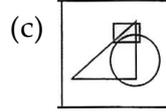
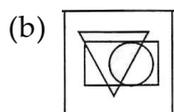
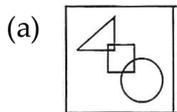
X



51. Problem Figure



X

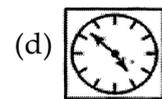
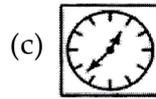
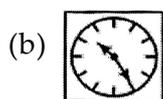
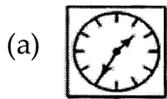


Directions (52-56) : In each of the following questions, choose the correct mirror-image of the figure (X) from amongst four alternatives (a), (b), (c) and (d), given along with it.

52.



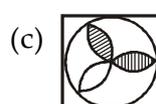
(X)



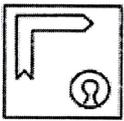
53.



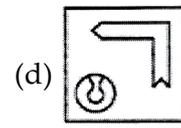
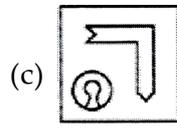
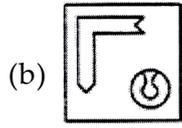
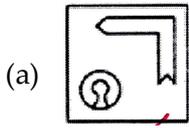
(X)



54.



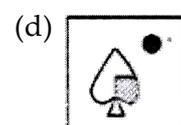
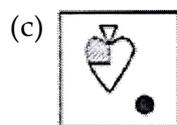
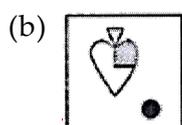
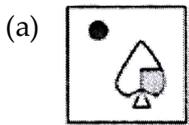
(X)



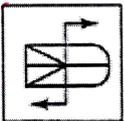
55.



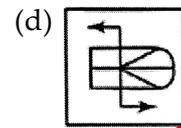
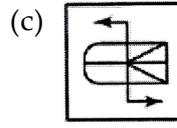
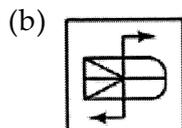
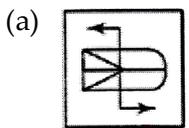
(X)



56.

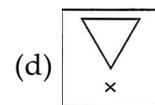
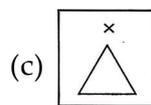
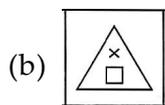
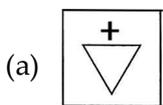
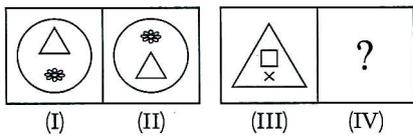


(X)

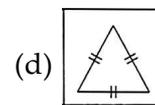
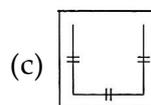
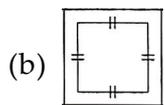
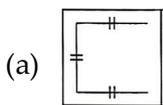
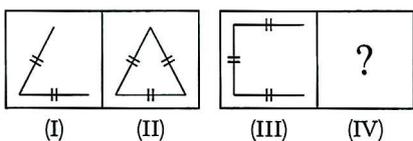


Directions (57-59) : In the following questions, find out the same relationship between (III) and (IV) as given between (I) and (II)

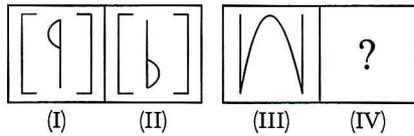
57. Problem Figures

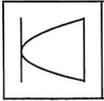
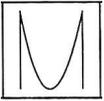
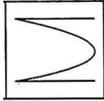
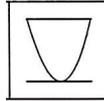


58. Problem Figures

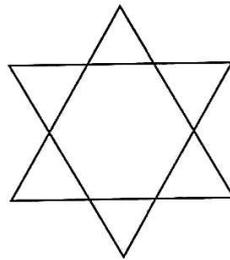


59. Problem Figures



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

60. How many triangles are there in the following figure?

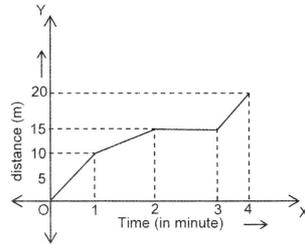


- (a) 7 (b) 8 (c) 9 (d) 10

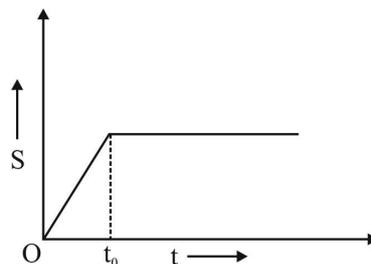
PHYSICS

61. Which of the following is a poor conductor of heat?
 (a) Vacuum (b) Water (c) Air (d) All the above
62. 1 calorie = _____
 (a) 1.8 J (b) 2.4 J (c) 4.2 J (d) 5.1 J
63. -40°C is numerically equal to
 (a) -40°F (b) 233 K (c) -32°F (d) All the above
64. Thermometer works on the principle of:
 (a) Substances expand on heating
 (b) Substances contract on heating
 (c) Substances have no effect on heating
 (d) None of these
65. The image formed by a concave mirror can be _____.
 (a) real (b) virtual (c) magnified (d) All of the above
66. Unit(s) of energy is:
 (a) Joule (b) Calorie (c) Kelvin (d) Both (a) and (b)
67. Long-sightedness is caused due to
 (a) eye ball being too short (b) eye ball being too long
 (c) the blind spot on the retina (d) None of the above

68. When a body covers first one third distance with speed 1 m/s, the second one third distance with speed 2 m/s and the last one third distance with speed 3 m/s, then the average speed is ____.
- (a) 2 m/s (b) 1.79 m/s (c) 2.66 m/s (d) 1.64 m/s
69. Distance versus time graph of an object is as shown in the figure. The average speed of the object in m/s is.

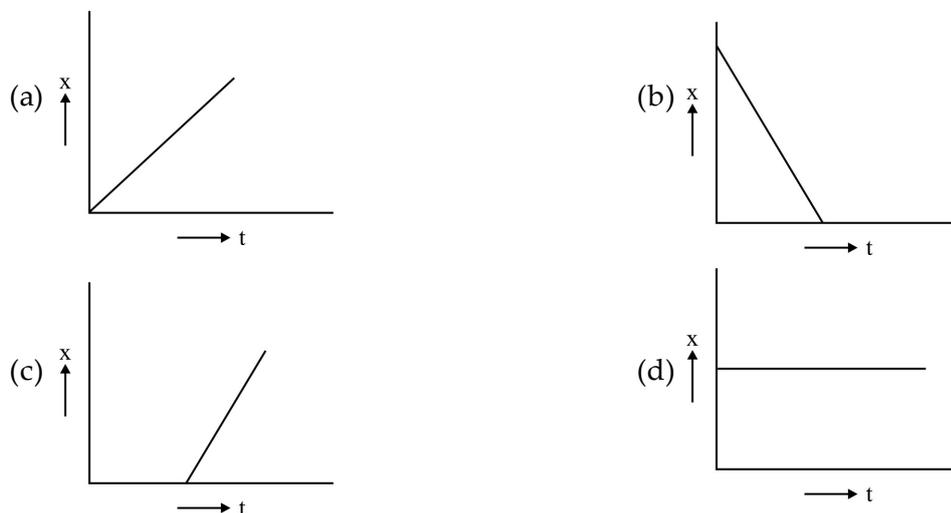


- (a) 1/8 (b) 1/12 (c) 1/2 (d) 2
70. A ray of light incident on a shining surface bend back into the same medium. The phenomenon is called:
- (a) Refraction (b) Reflection (c) Dispersion (d) Diffraction
71. A man is standing at a distance of 1 m from a plane mirror. He moves 1 m away from the mirror. The separation between him and his image is:
- (a) 1 m (b) 2 m (c) 3 m (d) 4 m
72. Displacement is:
- (a) Vector quantity (b) Scalar quantity
- (c) Either vector quantity or scalar quantity (d) Neither vector quantity nor scalar quantity
73. The train 'A' travelled a distance of 120 km in 3 h whereas another train 'B' travelled a distance of 180 km in 4 h. Which train travelled faster?
- (a) Train A (b) Train B
- (c) Both are equally faster (d) None of these
74. A cyclist moves from a certain point X and completes one revolution around a circular path of radius 'r'. The distance travelled and magnitude of displacement of the cyclist are respectively:
- (a) $2r, \pi r$ (b) $\frac{\pi r}{2}, 2\pi r$ (c) $2\pi r, \text{zero}$ (d) $r, 2r$
75. Figure shows the displacement (s) - time (t) graph of a particle moving on the X-axis. Which of the following options is correct?



- (a) The particle is at rest.
- (b) The velocity of particle increases up to time t_0 and then becomes constant.
- (c) The speed of particle increases up to time t_0 and then becomes constant.
- (d) The particle moves at a constant velocity up to a time t_0 and then stops.

76. Which of the following cannot be the distance time graph?



77. A car covers 30 km at a uniform speed of 60 km/h and the next 30 km at a uniform speed of 40 km/h. The total time taken is:

- (a) 30 min
- (b) 45 min
- (c) 75 min
- (d) 120 min

78. When the bob is in the central position the force is :

- (a) Balanced
- (b) Unbalanced
- (c) Sometimes balanced and sometimes unbalanced
- (d) None of the above

79. The time period of a simple pendulum is 0.2 sec. What is its frequency of oscillation?

- (a) 0.2 Hz
- (b) 0.02 Hz
- (c) 5 Hz
- (d) 50 Hz

80. Mirror used for focusing light is :

- (a) Concave
- (b) Convex
- (c) Plane
- (d) None

CHEMISTRY

81. Which among the following is considered as strong acid?

- (a) Acetic acid
- (b) Sulphurous acid
- (c) Carbonic acid
- (d) Nitric acid

82. The smallest unit present in cotton is :

- (a) cellulose
- (b) protein
- (c) amino acids
- (d) dacron

83. Which of the following statements is NOT true?

- (a) Workers in wool industry generally suffer from sorter's disease.
- (b) Bakharwal is an Indian breed of sheep.
- (c) Rayon is a natural fibre.

- (d) Shearing is usually done in summer season.
84. A salt formed by the partial neutralization of hydroxyl ions of a base by an acid is called ____ .
 (a) normal (b) acidic (c) basic (d) None of these
85. X is present in the stomach. However, presence of excess of it causes indigestion, which requires the intake of milk of magnesia to undo the effect of X. What is X?
 (a) HCl (b) H_2SO_4 (c) NaOH (d) KOH
86. Match the entries given in column A with the appropriate ones in column B.
- | Column A | Column B |
|----------------------|------------------------------|
| (p) Carbonic acid | (i) Baking Powder |
| (q) Tartaric acid | (ii) Antacid |
| (r) Caustic soda | (iii) Soft drink |
| (s) Milk of magnesia | (iv) Additive in food stuffs |
| | (v) Soap industry |
- (a) p-iii, q-i, r-v, s-ii (b) p-iii, q-i,iv, r-v, s-ii
 (c) p-iii, q-i, r-v,iv, s-ii (d) p-iii, q-ii, r-iv, s-ii
87. Which of the following colours is given by phenolphthalein in a basic salt solution?
 (a) Yellow (b) Pink (c) Orange red (d) Colourless
88. Chemical name of Oil of Vitriol is _____.
 (a) Nitric acid (b) Acetic acid (c) Sulphuric acid (d) Sodium hydroxide
89. The most commonly used natural indicator 'Litmus' is extracted from :
 (a) Lichens (b) Turmeric (c) Beet Root (d) China rose
90. Substances which are bitter in taste, feel soapy on touching are known as:
 (a) Acids (b) Bases (c) Indicators (d) Neutral solution
91. Which of the following substances used in agriculture does not cause water pollution to large extent?
 (a) Manures (b) Pesticides (c) Fertilizers (d) Insecticides
92. The correct way of making a dilute solution of an acid is to :
 (a) add water to acid. (b) add acid to water.
 (c) mix acid and water simultaneously. (d) add water to acid in a shallow container.
93. Which of the following set of substances contain acids?
 (a) grapes, lime water (b) vinegar, soap
 (c) curd, milk of magnesia (d) curd, vinegar
94. On which of the following day is world water day observed?
 (a) 22 March (b) 14 November (c) 2 October (d) 21 December
95. Salt used in purification of water is :
 (a) potash alum (b) epsom salt (c) green vitriol (d) blue vitriol

96. Match the entries given in column A with the appropriate ones in column B.

Column A	Column B
(p) Sodium dihydrogenphosphate	(i) Basic salt
(q) Calcium hydroxychloride	(ii) Gun powder
(r) Nitre	(iii) Manufacture of glass
(s) Ammonium carbonate	(iv) Acidic salt

(v) Smelling salt

(a) p-iv, q-i, r-ii,iii, s-v

(b) p-iv, q-i,v, r-ii,iii, s-v

(c) p-iv, q-v, r-ii,iii, s-i

(d) p-i, q-iv, r-ii,iii, s-v

97. Generally, pickles are stored in :

(a) tin vessels or glass vessels.

(b) tin vessels or plastic vessels.

(c) glass vessels or plastic vessels.

(d) aluminium vessels or tin vessels.

98. The pair of ions which does not cause hardness of water is :

(a) sulphate, chloride

(b) bicarbonate, chloride

(c) bicarbonate, sulphate

(d) nitrate, phosphate

99. On passing electricity through acidulated water, the gaseous products obtained are collected in two separate test tubes A and B. The volume of the gas collected in test tube A is double the volume of gas collected in test tube B. Identify the two gases in test tube A and B respectively.

(a) Hydrogen and oxygen

(b) Oxygen and hydrogen

(c) Hydrogen peroxide and oxygen

(d) Oxygen and water vapour

100. Silk moth feeds on which plant leaves?

(a) Eucalyptus leaves (b) Grape leaves

(c) Mulberry leaves (d) Neem leaves

BIOLOGY

101. Which of the following organisms feed on dead and decaying matter?

(a) *Cuscuta*

(b) Fungi

(c) Green plants

(d) Both (a) and (b)

102. Which part of the leaf controls the rate of loss of water to the air?

(a) Midrib

(b) Stomata

(c) Vascular bundles

(d) Veins

103. The assimilatory power which is formed during light reaction of photosynthesis includes:

(a) ATP

(b) Food

(c) O₂ & CO₂

(d) AMP

104. A place receives very little rainfall and the temperature is high throughout the year. The climate of that place will be _____ and _____.

(a) hot, dry

(b) hot, humid

(c) cold, dry

(d) cold, humid

105. The milk protein splitting enzyme found in the stomach of infants is:

(a) Pepsin

(b) Rennin

(c) Lipase

(d) Protease

106. Emulsification of fats is the function of:

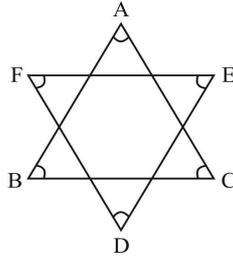
- (a) bile salts (b) pancreatic juice (c) intestinal juice (d) None of these
107. The process of conversion of glucose to pyruvate during cellular respiration occurs in :
 (a) Mitochondria (b) Cytoplasm (c) Golgi body (d) Lysosome
108. Carbon dioxide combines with haemoglobin to form a product called as :
 (a) Carbamino haemoglobin (b) Oxyhaemoglobin
 (c) Carboxyhaemoglobin (d) None of these
109. Role of chlorophyll during photosynthesis is:
 (a) absorption of solar energy (b) synthesis of glucose
 (c) synthesis of oxygen (d) Both (a) and (c)
110. What is the adaptation of red-eyed frogs to climb trees?
 (a) Have long tails for grasping branches of trees.
 (b) Have long claws to grasp branches.
 (c) Their hands and feet are modified to hold on to the branches.
 (d) Developed sticky pads on feet to climb trees.
111. The green pigment in the leaves is
 (a) Chlorophyll (b) Hemoglobin (c) Protoplast (d) Haemocyanin
112. Tiny pores on the surface of leaves are
 (a) Lamina (b) Stomata (c) Chlorophyll (d) leaf stalk
113. Life processes the living organisms perform are
 (a) Nutrition and excretion (b) Respiration and reproduction
 (c) Growth and response to stimuli (d) All of these
114. The substance from which an organism derives energy and materials for growth and maintenance is called
 (a) nutrition (b) consumption (c) food (d) all of these
115. Algal component of lichen is autotrophic. It provides food material to the fungal component but in return
 (a) The fungus provides shelter, water and minerals.
 (b) The lichen provides shelter, water and minerals to the algae.
 (c) Both (1) and (2)
 (d) None of the above
116. In the process of respiration
 (a) oxygen is required and carbon dioxide is formed as a waste
 (b) carbon dioxide is required and oxygen is formed as a waste
 (c) both (1) and (2)
 (d) none of these
117. Normal range of breathing rate per minute in an adult person at rest is
 (a) 9-12 (b) 15-18 (c) 12-15 (d) 18-24

118. Alcohol is formed during
 (a) aerobic respiration (b) heavy exercise (c) anaerobic respiration (d) both (2) and (3)
119. In anaerobic respiration in yeast
 (a) O₂ is given out (b) CO₂ is given out (c) CO₂ is taken in (d) O₂ is taken in
120. During heavy exercise, we get cramps in the legs due to the accumulation of
 (a) carbon dioxide (b) lactic acid (c) alcohol (d) water

MATHEMATICS

121. Find the value of $\sqrt[3]{27} \times \sqrt[3]{216} \times \sqrt[3]{64}$
 (a) 24 (b) 45 (c) 72 (d) 96
122. The LCM of two numbers is 420. Which of the following cannot be the HCF of the two numbers?
 (a) 70 (b) 60 (c) 210 (d) 80
123. If $m = (-1)^{2000}$ and $n = (-1)^{2002}$, then find the value of $\frac{m}{n}$.
 (a) -1 (b) 1 (c) 2000 (d) 2002
124. The number 444 444 444 444 is divisible by:
 (a) 3, 11 (b) 7 (c) 5, 11 (d) 9, 11
125. If $\frac{x}{y} = \frac{3}{5}$, then the value of $\frac{x-y}{x+y}$ is
 (a) $-\frac{1}{4}$ (b) $\frac{1}{4}$ (c) $\frac{1}{2}$ (d) -6
126. The unit digit in the product $(7^{71} \times 6^{59} \times 3^{65})$ as:
 (a) 6 (b) 2 (c) 4 (d) 1
127. The greatest number of 4 digits divisible by 12, 15, 20 and 35 is
 (a) 9999 (b) 9900 (c) 9804 (d) 9660
128. Every composite number has:
 (a) no prime divisor (b) at least one prime divisor
 (c) at least two prime divisor (d) one and only one prime divisor
129. The mean of 15 observations is 30. Two observations 28 and 38 are deleted and three observations 33, 39 and 48 are included. Find the mean of new set of observation.
 (a) 31 (b) 31.5 (c) 32 (d) 33.4
130. If mode - mean = mean - mode, then which of the following is necessarily true?
 (a) Mean = Median (b) Median = Mode (c) Mean = Mode (d) All of these

131. In a school, only 2 out of 5 students can participate in a quiz. What is the chance that a student picked at random makes it to the competition?
 (a) 20% (b) 40% (c) 50% (d) 30%
132. What should be added to $\left(\frac{1}{2} + \frac{1}{3} + \frac{1}{5}\right)$ to get 3?
 (a) $\frac{58}{30}$ (b) $\frac{59}{32}$ (c) $\frac{59}{30}$ (d) $\frac{59}{95}$
133. Let x, y, z be three observations. The mean of these observations is :
 (a) $\frac{x \times y \times z}{3}$ (b) $\frac{x + y + z}{3}$ (c) $\frac{x - y - z}{3}$ (d) $\frac{x \times y + z}{3}$
134. In $\triangle ABC$, $\angle C = \angle A$ and $BC = 6$ cm and $AC = 5$ cm then the length of AB is :
 (a) 6 cm (b) 5 cm (c) 3 cm (d) 2.5 cm
135. If one angle of a triangle is equal to the sum of other two angles, then the triangle is:
 (a) an isosceles triangle (b) an obtuse triangle
 (c) an equilateral triangle (d) a right angled triangle.
136. Two altitudes intersect at a vertex in
 (a) Obtuse triangle (b) Acute triangle (c) Right triangle (d) None of these
137. The sum of two consecutive multiples of 6 is 66. Find the multiple.
 (a) 32, 34 (b) 34, 42 (c) 30, 30 (d) none of these
138. If I add $\frac{3}{8}$ th of number to $\frac{1}{8}$ th of that number I get zero, then the number is :
 (a) 0 (b) 3 (c) -3 (d) none of these
139. A number increased by 20 and then reduced by 15 becomes 10, then the number is :
 (a) 2 (b) 5 (c) 6 (d) 7
140. The result of adding the difference of 3.003 and 2.05 to their sum will be :
 (a) 6.006 (b) 60.06 (c) 600.6 (d) 0.6060
141. The number 'x' equals one fourth of its own reciprocal, then the value of 'x' is equal to :
 (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) 2 (d) 4
142. What is the median of the following data 37, 31, 42, 43, 46, 25, 39, 45, 32?
 (a) 35 (b) 39 (c) 5 (d) 8
143. A man goes 24 m due East and then 10 m due North. How far is he from his initial position?
 (a) 25 m (b) 25.5 m (c) 26 m (d) 27 m
144. Which of the following values are equal?
 (P) 1^4 (Q) 4^0 (R) 0^4 (S) 4^1
 (a) P and Q (b) Q and R (c) P and R (d) P and S
145. The value of $\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$ is :



- (a) 190° (b) 540° (c) 360° (d) 180°

146. If the distance travelled by a car in one hour is 210 km, then find the distance (in metres) travelled by the same car with the same speed in 60 seconds.

- (a) 4500 m (b) 3160 m (c) 3500 m (d) 4230 m

147. In ΔPQR if $\angle P = 60^\circ$ and $\angle Q = 40^\circ$, then the exterior angle formed by producing QR is equal to:

- (a) 60° (b) 120° (c) 100° (d) 80°

148. Which of the following does not have an integer solution?

- (a) $5y - 3 = -18$ (b) $3x - 9 = 0$ (c) $3z + 8 = 3 + z$ (d) $9y + 8 = 4y - 7$

149. Which of the following rational number is equal to its reciprocal?

- (a) 0 (b) 2 (c) 1 (d) $\frac{1}{2}$

150. The range of the data 21, 6, 17, 18, 12, 8, 4, 13 is:

- (a) 17 (b) 12 (c) 8 (d) 15

ROUGH WORK
