

- NOTE :**
1. There are 5 Sections (1) **Physics** (2) **Chemistry** (3) **Mathematics** (4) **Biology** (5) **Mental Ability**
  2. Each section has 30 questions.
  3. There is negative marking scheme (3R-1W). Which means that for correct answer 3 mark will be awarded & for wrong answer 1 mark will be deducted.
  4. Use black ball point pen only.
  5. Darken only one bubble completely, corresponding to the correct option.
  6. Do not cancel the filled bubble or darken more than one bubble. It will be treated as wrong answer.
  7. You may do rough work on the last blank page.

**PHYSICS****CHOOSE THE CORRECT OPTION :**

01. A paper wrapped tightly around the joint of a brass tube and its wooden handle is put in a flame. The paper will \_\_\_\_\_.
  - (a) Catch fire immediately
  - (b) Not burn at any place
  - (c) Burn around the brass tube
  - (d) Burn around the wooden handle
02. If the surface of water in a lake is just going to freeze, then the temperature of water at the bottom is:
  - (a) 0°C
  - (b) 4°C
  - (c) 3°C
  - (d) None of these
03. A black body emits \_\_\_\_\_.
  - (a) Radiations of all wavelengths
  - (b) No radiations
  - (c) Radiations of only one wavelength
  - (d) Radiations of selected wavelength
04. Size of a nucleus is of the order of \_\_\_\_\_.
  - (a)  $10^{-18}$  m
  - (b)  $10^{-14}$  m
  - (c)  $10^{-10}$  m
  - (d)  $10^{-6}$  m
05. In vacuum what will be common among X-rays, visible light, radio waves and infra-red rays ?
  - (a) Speed
  - (b) Frequency
  - (c) Wavelength
  - (d) Amplitude
06. In radiation the heat energy from hot body to cold body, travels in the form of \_\_\_\_\_.
  - (a) Longitudinal waves
  - (b) Corpuscles
  - (c) Longitudinal as well as transverse waves
  - (d) Transverse waves
07. Two thin blankets piled together are warmer than a single one of the same total thickness as the two because \_\_\_\_\_.
  - (a) Air is enclosed
  - (b) The distance of the heat transmission increases
  - (c) Total surface increases
  - (d) It is a wrong statement
08. Two students ordered tea in a restaurant and waited for a friend who was to join them shortly, one of them poured hot tea in his cup and mixed cold milk in it and the other poured hot tea but mixed the cold milk only after the friend came after five minutes. Now the temperature of the cup of tea of the \_\_\_\_\_.
  - (a) Second student is the higher
  - (b) First student is higher
  - (c) Both student is the same
  - (d) First student is less by 20°C that of the second student
09. The door of a running refrigerator inside a closed room was left open. Then \_\_\_\_\_.
  - (a) The room will be cooled slightly
  - (b) The temperature of the room will be lowered
  - (c) The temperature of the room will not be affected
  - (d) The room will be warmed up gradually
10. The energy produced in the sun due to
  - (a) Fission reaction
  - (b) Fusion reaction
  - (c) Chemical Reaction
  - (d) Motion of electrons and ions
11. A copper disc has a circular hole at its centre. When the copper disc is heated to raise its temperature, the diameter of the hole will \_\_\_\_\_.
  - (a) Decrease
  - (b) Not be affected
  - (c) Increase
  - (d) None of these
12. The following one is not a primary colour
  - (a) Yellow
  - (b) Red
  - (c) Green
  - (d) Blue
13. A well cut diamond appears bright because \_\_\_\_\_.
  - (a) Of reflection of light
  - (b) Of dispersion of light
  - (c) The total internal reflection
  - (d) Of refraction of light
14. A piece of cloth looks red in sun light. If it is held in the blue portion of a solar spectrum, it will appear \_\_\_\_\_.
  - (a) Red
  - (b) Black
  - (c) Blue
  - (d) White

15. Which are of the following substances is the magnetic substance ?  
 (a) Mercury (b) Iron (c) Gold (d) Silver
16. The depolariser used in Laclanche cell is \_\_\_\_\_.  
 (a) Solution of ammonium chloride  
 (b) Porous pot  
 (c) Powdered carbon  
 (d) Manganese dioxide
17. The filament of an electric bulb is of tungsten because \_\_\_\_\_.  
 (a) It's resistance is negligible  
 (b) It is cheaper  
 (c) It's melting point is high  
 (d) Filament is easily made
18. When the current passes through the filament it gets heated to incandescence and give light while the connecting wires are not heated because \_\_\_\_\_.  
 (a) The connecting wires are good conductor of heat while the filament is bad conductor  
 (b) The connecting wires are of low resistance while the filament is of high resistance  
 (c) The density of connecting wires is less than that of the filament  
 (d) The connecting wires are bad conductor of heat while the filament is good conductor
19. Cathode rays were studied first of all by \_\_\_\_\_.  
 (a) J. J. Thomson (b) Rutherford  
 (c) W. P. Coolidge (d) William Crooke
20. Gases are good conductors of electricity at \_\_\_\_\_.  
 (a) High pressure (b) Low pressure  
 (c) Low temperature (d) High temperature
21. The resistance of a thin wire in comparison of a thick wire of the same material \_\_\_\_\_.  
 (a) Is low  
 (b) Is equal  
 (c) Depends upon the metal of the wire  
 (d) Is high
22. A sharp knife cuts much better than a blunt one because \_\_\_\_\_.  
 (a) Area of sharp knife is much less than the area of the blunt one  
 (b) Sharp knife is brighter  
 (c) Sharp knife is colder  
 (d) Sharp knife is costly
23. A magnet can be demagnetised by \_\_\_\_\_.  
 (a) Hammering the magnet  
 (b) Putting it in the water  
 (c) Cooling it  
 (d) Putting it in contact with iron
24. A dynamo actually acts as a \_\_\_\_\_.  
 (a) Converter of energy  
 (b) Source of electric charge  
 (c) Source of magnetic charge  
 (d) Source of energy
25. For the same mass, which one of the following has the maximum thermal capacity ?  
 (a) Wood (b) Copper (c) Water (d) Ice
26. Isotopes are nuclei which have \_\_\_\_\_.  
 (a) Same number of protons  
 (b) Same number of neutrons  
 (c) Unequal electric charge  
 (d) Equal mass
27. Two plane mirrors are set at right angles and a flower is placed in any position in between the mirrors. The number of images of the flower which will be seen is  
 (a) One (b) Two (c) Three (d) Four
28. A particle in uniform circular motion has \_\_\_\_\_.  
 (a) No acceleration  
 (b) Constant acceleration  
 (c) Increasing acceleration  
 (d) Decreasing acceleration
29. Sonar is a device for \_\_\_\_\_.  
 (a) Location and ranging of aircraft's  
 (b) Location and ranging submarines  
 (c) Producing a musical note of high quantity  
 (d) Measuring frequency of musical notes
30. The hotter element in an electric iron is made of  
 (a) Copper (b) Tungsten  
 (c) Nichrome (d) Iron

## CHEMISTRY

### CHOOSE THE CORRECT OPTION :

31. Which of the following compound possess electrovalent bond, covalent bond and co-ordinate bond.  
 (a) HCl (b) NaCl (c) NaOH (d)  $\text{NH}_4\text{Cl}$
32. Which of the following is a redox reaction?  
 (a)  $\text{NaCl} + \text{AgNO}_3 \longrightarrow \text{AgCl} + \text{NaNO}_3$   
 (b)  $\text{CuCl}_2 + \text{H}_2\text{S} \longrightarrow \text{CuS} + 2\text{HCl}$   
 (c)  $\text{AlCl}_3 + 3\text{NH}_4\text{OH} \longrightarrow \text{Al}(\text{OH})_3 + 3\text{NH}_4\text{Cl}$   
 (d)  $\text{MnO}_2 + 4\text{HCl} \longrightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$
33. Protons are \_\_\_\_\_.  
 (a) Ionised H atoms  
 (b)  $\alpha$  (alpha) particles  
 (c) All positive (+ve) particles  
 (d) represented by  ${}^0_1e$
34. The pH of water at temperature greater than 298 K. is  
 (a) 7 (b) less than 7  
 (c) greater than 7 (d) all of these
35. Which of the following properties of a solution of NaCl will not vary as the concentration of salt is increased?  
 (a) pH  
 (b) Density  
 (c) Concentration of solution  
 (d) Electrical conductivity

36. Which one of the following is the acidic salt?  
 (a)  $\text{Na}_2\text{CO}_3$  (b)  $\text{CaCl}_2$   
 (c)  $\text{NH}_4\text{Cl}$  (d)  $\text{NaCl}$
37. Ethylene is \_\_\_\_\_  
 (a) saturated hydrocarbon (b) olefin  
 (c) Paraffin (d) Aromatic compound
38. Which one of the following methods is not used to purify liquid organic compounds?  
 (a) Fractional distillation  
 (b) Distillation under, reduced pressure  
 (c) Steam distillation  
 (d) Fractional crystallisation
39. Artificial radioactivity was discovered by \_\_\_\_  
 (a) Rontegen (b) Becquerel  
 (c) Morie curie (d) Irene Joliot Curie
40. The arrangement of valence electrons in excited state of carbon is \_\_\_\_\_  
 (a)  $2s^2 2p_x^1 2p_y^1$  (b)  $2s^2 2p_x^2$   
 (c)  $2s^1 2p_x^2 2p_y^1$  (d)  $2s^1 2p_x^1 2p_y^1 2p_z^1$
41. Amino acids are found in \_\_\_\_\_  
 (a) Starch (b) Proteins (c) Fats (d) Oils
42. Soaps are \_\_\_\_\_  
 (a) Sodium or potassium salts of higher fatty acid  
 (b) Esters of higher fatty acids  
 (c) Glycerides of fatty acids  
 (d) Hydrides of fatty acids
43. The formation of a chemical bond is associated with \_\_\_\_  
 (a) A decrease in potential energy  
 (b) An increase in potential energy  
 (c) No change in potential energy  
 (d) None of these
44. All the alkaline earth metals have valency \_\_\_\_\_.  
 (a) 1 (b) 3 (c) 2 (d) 4
45. Which one of the following is the properties of carbon monoxide?  
 (a) Reducing agent (b) Oxidising agent  
 (c) Catalytic agent (d) Acidic oxide
46. The hottest part of blue flame is \_\_\_\_\_.  
 (a) In the blue zone  
 (b) Just below the tip of the flame  
 (c) At the top of the outer core  
 (d) Just above the inner core
47. Which of the following is double salt.  
 (a) Alum (b) Bauxite (c) Cinnabar (d) Dextrin
48. Which of the following oxide is acidic as well as basic  
 (a)  $\text{Na}_2\text{O}$  (b)  $\text{MgO}$  (c)  $\text{Al}_2\text{O}_3$  (d)  $\text{Cl}_2\text{O}_7$
49. A compound of ammonia which sublimes on heating is \_\_\_\_  
 (a) Ammonium sulphate (b) Ammonium nitrate  
 (c) Ammonium chloride (d) Ammonium nitrite
50. Glycogen stored in the liver and muscles of a man is a \_\_\_\_  
 (a) Monosaccharide (b) Polysaccharide  
 (c) Protein (d) Fat
51. The gas least soluble in water is  
 (a)  $\text{HCl}$  (b)  $\text{N}_2$   
 (c)  $\text{NH}_3$  (d)  $\text{CO}_2$
52. The nitrogen fertilizer with the highest percentage of nitrogen is \_\_\_\_\_.  
 (a) urea (b) Ammonium sulphate  
 (c) Ammonium nitrate (d) Calcium nitrate
53. Fermentation of glucose into ethanol is brought about in presence of \_\_\_\_  
 (a) Diastase (b) Maltase  
 (c) Invertase (d) Zymase
54. Water exists both as solid and liquid at \_\_\_\_  
 (a)  $100^\circ\text{C}$  (b)  $50^\circ\text{C}$  (c)  $4^\circ\text{C}$  (d)  $0^\circ\text{C}$
55. Cooking oil can be converted into vegetable ghee by the process of \_\_\_\_  
 (a) Hydrogenation (b) Distillation  
 (c) Crystallisation (d) Oxidation
56. How much volume of hydrogen is required to produce 20 litres of steam at STP ?  
 (a) 10 litres (b) 30 litres (c) 40 litres (d) 20 litres
57. The boiling point of a liquid with the increase of pressure \_\_\_\_\_.  
 (a) Decreases  
 (b) Increases  
 (c) Remains constant  
 (d) Changes according to the weather
58. Temporary hardness of water is due to the presence of \_\_\_\_  
 (a) Magnesium sulphate  
 (b) sodium chloride  
 (c) Calcium sulphate  
 (d) Calcium hydrogen carbonate
59. Which one of the following salts is pink in colour?  
 (a) Ferrous sulphate (b) Copper sulphate  
 (c) Cobalt nitrate (d) Alum
60. Which one of the following gases is not collected over water?  
 (a) Hydrogen (b) Oxygen  
 (c) Ammonia (d) Nitrogen



# MATHEMATICS

## CHOOSE THE CORRECT OPTION :

61. If volume and surface area of sphere is numerically equal then its radius is  
 (a) 2 units (b) 3 units (c) 4 units (d) 5 units
62. The four triangles formed by the diagonals of a parallelogram are  
 (P) equal in areas  
 (Q) congruent to each other  
 (R) Similar to each other

Then

- (a) Only P is correct (b) P and Q are correct  
 (c) None is correct (d) All are correct
63. In  $\square ABCD$ , if a point on the diagonal AC is equidistant from the adjacent sides AB, AD and CB, CD respectively, then the quadrilateral is  
 (a) parallelogram (b) trapezium  
 (c) rhombus (d) rectangle

64. The greatest altitude of a triangle with sides 40, 70, 90 is  
 (a)  $15\sqrt{5}$  (b)  $60\sqrt{5}$  (c)  $15\sqrt{6}$  (d)  $30\sqrt{5}$

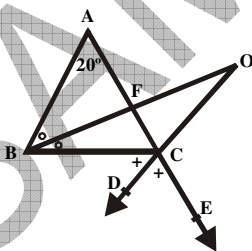
65. The radius of a solid hemisphere is R. A cube of side 'x' is cut out from its plane surface, then its surface area becomes

- (a)  $2\pi r^2 - 6x^2$  (b)  $3\pi r^2 - 5x^2$   
 (c)  $3\pi r^2 + 4x^2$  (d)  $3\pi r^2 - 4x^2$

66. The area of an isosceles triangle whose congruent side are 'a' cm and base is 'b' cm is given by

- (a)  $\frac{\sqrt{3}}{2} \times a \times b$  (b)  $\frac{1}{2} \times a \times b$   
 (c)  $\frac{b}{4} \sqrt{4a^2 - b^2}$  (d)  $\frac{b}{2} \sqrt{a^2 - b^2}$

67. In  $\triangle ABC$ ,  $AB \cong AC$ , Ray BF is bisector of  $\angle ABC$ , Ray CD is bisector of  $\angle BCE$ , B-F-O, D-C-O, A-C-E. If  $\angle BAC = 20^\circ$ , then  $\angle BOC$  is



- (a)  $40^\circ$  (b)  $70^\circ$  (c)  $10^\circ$  (d)  $20^\circ$

68.  $\triangle ABC$  is right angled at B. On AC, a point D is taken so that  $AD = DC$  and  $AB = BD$ , then  $\angle CAB$  is

- (a)  $120^\circ$  (b)  $60^\circ$  (c)  $90^\circ$  (d)  $45^\circ$

69. One side of a right triangle measures 126 m and the difference in lengths of its hypotenuse and other side is 42 m. Then its area is

- (a)  $10584 \text{ m}^2$  (b)  $15084 \text{ m}^2$   
 (c)  $712\sqrt{7} \text{ m}^2$  (d) 15876

70. If  $a + b = 1$ , then the value of  $a^3 + b^3 + 3ab$  is  
 (a) 1 (b) -1 (c) 2 (d) -2
71. The distance of the point (3, 4) from x-axis, y-axis and origin is p, q, r respectively then the value of  
 (a)  $p = 3, q = 4, r = 5$  (b)  $p = 4, q = 3, r = 5$   
 (c)  $p = 5, q = 4, r = 3$  (d)  $p = 3, q = 5, r = 4$

72. One card is drawn from a pack of 52 cards what is the probability that the card is drawn is either red or king.

- (a)  $\frac{15}{26}$  (b)  $\frac{1}{2}$  (c)  $\frac{7}{13}$  (d)  $\frac{17}{32}$

73. If  $a^m a^n = a^{mn}$  then  $m(n-2) + n(m-2)$  is equal to  
 (a) -1 (b) 1 (c) 0 (d) -1/2

74. What must be added to x/y to make is y/x is :

- (a)  $\frac{y^2 - x^2}{yx}$  (b)  $\frac{y-x}{y^2 x^2}$   
 (c)  $\frac{xy}{x+y}$  (d)  $\frac{x^2 - y^2}{x^2 + y^2}$

75.  $\frac{a^{-1} - b^{-1}}{a^{-2} - b^{-2}}$  is equal to :

- (a)  $\frac{b-a}{ab}$  (b)  $\frac{b+a}{ab}$  (c)  $\frac{ab}{a-b}$  (d)  $\frac{ab}{a+b}$

76. The value of  $\frac{\sqrt[6]{0.001} \sqrt[6]{x^{1296}}}{\sqrt{10}}$  is :

- (a)  $(10x)^{36}$  (b)  $\frac{x^6}{10^3}$   
 (c)  $\frac{x^{36}}{10}$  (d) None of these

77. If the system  $6x - 2y = 3$ ,  $kx - y = 2$  has a unique solution then :

- (a)  $k = 3$  (b)  $k \neq 3$  (c)  $k = 4$  (d)  $k \neq 4$

78. If  $2A = 3B = 4C$ , then  $A : B : C$  is :

- (a) 2:3:4 (b) 4:3:2 (c) 6:4:3 (d) 3:4:2

79. If  $\sqrt{\frac{x}{1-x}} + \sqrt{\frac{1-x}{x}} = 2\frac{1}{6}$  the values of x are :

- (a)  $\frac{5}{13}, \frac{7}{13}$  (b)  $\frac{7}{13}, \frac{9}{13}$   
 (c)  $\frac{9}{13}, \frac{4}{13}$  (d) None of these

80. An orderly distribution of the raw data into certain specified categories is known as :

- (a) frequency distribution  
 (b) frequency  
 (c) cumulative frequency  
 (d) primary data

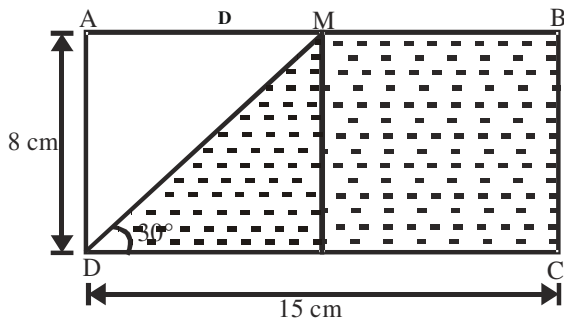
81. If average of n numbers  $x_1, x_2, \dots, x_n$  is A and if  $x_n$  is replaced by  $(n+1)x_n$  then the new average would be:

- (a)  $(A+x)$  (b)  $A+x_n$   
 (c)  $\frac{(x+1)A+x_n}{n+1}$  (d)  $\frac{(x+1)A+x_n}{n}$

82. Each side of an equilateral triangle is increased by 1.5%. The percentage increase in its area is:  
 (a) 1.5% (b) 3% (c) 4.5% (d) None
83. If the perimeter of a rhombus is  $4a$  and lengths of the diagonals are  $x$  and  $y$  then its area is :

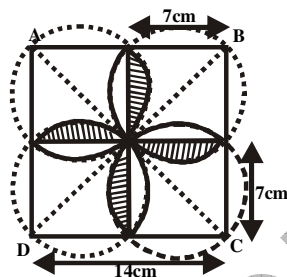
- (a)  $a(x+y)$  (b)  $x^2 + y^2$  (c)  $\frac{1}{2}xy$  (d) None

84. If the figure  $ABCD$  is a rectangle. The area of the shaded region is :



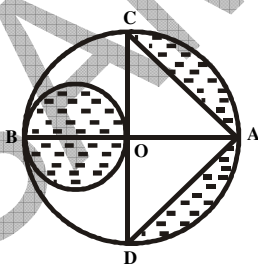
- (a)  $16.2\text{cm}^2$  (b)  $13.8\text{cm}^2$   
 (c)  $64.8\text{cm}^2$  (d)  $11.2\text{cm}^2$

85. The area of unshaded region is :



- (a)  $154\text{m}^2$  (b)  $96\text{m}^2$   
 (c)  $168\text{m}^2$  (d) None of these

86. In the figure  $AB$  is a diameter of the circle with centre  $O$  and  $OA = 7$  cm. Find the area of the shaded region.



- (a)  $45\text{cm}^2$  (b)  $16.5\text{cm}^2$  (c)  $66.5\text{cm}^2$  (d)  $77\text{cm}^2$

87. Water flow at 10 km/h through a pipe with cross section a circle of radius 35 cm into a cistern of dimensions

25 cm by 12 cm by 10 m. By how much will the water level rise in the cistern in 24 m?

- (a) 5.13 m (b) 4.25 m (c) 2.25 m (d) 4.75 m

88. A closed vessel inside of which is a circular cone of height 'h' contains some water in it. When the cone is vertical with its vertex downwards the water stands to a height  $h/2$ . To what height will it stand when the vessel is inverted ?

- (a)  $h/2$  (b)  $h/2^{1/3}$   
 (c)  $7^{1/3}h/2$  (d)  $h\left[1 - \frac{7^{1/3}}{2}\right]$

89. 1 litre of water is added to 5 litres of a 20% solution of alcohol in water, the strength of alcohol is :

- (a)  $12\frac{1}{2}\%$  (b)  $16\frac{2}{3}\%$  (c) 24% (d) 16%

90.  $x\%$  of  $y$  is  $y\%$  of :

- (a)  $x$  (b)  $y/100$   
 (c)  $x/100$  (d) None of these

## BIOLOGY

### CHOOSE THE CORRECT OPTION :

91. Which of the following statements are true ?  
 (A) Nitrogen is highly essential for rapid growth of plants  
 (B) Phosphate promote early growth as well as early maturity of plants  
 (C) Potassium develops a healthy root system  
 (a) A and B (b) B and C  
 (c) C and D (d) A, B and C
92. Urea is a better fertilizer because :  
 (A) Urea contains much higher percentage of nitrogen than either ammonium sulphate or ammonium nitrate  
 (B) The ammonia liberated by hydrolysis from urea is assimilated by the soil through the interaction of nitrifying bacteria.  
 (a) Only A is true (b) Only B is true  
 (c) Both A and B are true (d) None of these
93. Bone is used as a fertilizer since it contains the plant nutrient :  
 (a) sodium (b) potassium  
 (c) nitrogen (d) phosphorus
94. **Assertion (A) :** A fertilizers which contains more than one of the major plant nutrients, is called a mixed fertilizer.  
**Reason (R) :** Potassium chloride and potassium sulphate are used as fertilizers.  
 (a) Both A and R are true and R is correct explanation of A.  
 (b) Both A and R are true but R is not the correct explanation of A.  
 (c) A is true but R is false.  
 (d) A is false but R is true.



95. Which of the following combination is/are true ?  
**(A)** Non-living components : Abiotic components.  
**(B)** The producer organisms : Biotic components.  
**(C)** The consumer organisms : Biotic components  
**(D)** The decomposer organisms : Biotic components  
**(a)** Both A and B are true  
**(b)** A, B and C are true  
**(c)** B, C and D are true  
**(d)** A, B, C and D are true
96. Which is regarded as a link between the living and the non-living ?  
**(a)** RNA **(b)** DNA **(c)** Virus **(d)** Amoeba
97. Which of the following does provide the best estimate of world's biological diversity ?  
**(a)** Of about ten million species probably alive today. Some 20 species are lost every day. Most of the unknown because no more than half a million have yet been actually identified by scientists.  
**(b)** of about seventy million living species, some 400 are lost every day, most of them unknown because no more than 3 million have been actually identified.  
**(c)** Of about 60 million living species, some 100 are lost every day, most of them unknown because no more than 1.5 million have been actually identified  
**(d)** Of about 30 million living species, some 50 are lost every day, most of them unknown because no more than 1.5 million have been actually identified.
98. Characteristics features of the living beings are :  
**(a)** respiration and reproduction  
**(b)** growth  
**(c)** crystallisation  
**(d)** increase in mass
99. A permanent loss to a population is due to :  
**(a)** Migration **(b)** Emigration  
**(c)** Adult females **(d)** Nationality
100. Two factors which are important in the formation of new species are :  
**(a)** Isolation and mutation  
**(b)** Isolation and competition  
**(c)** Continuous variation and competition  
**(d)** Competition and mutation
101. The simple food chain operating in a grassland of forest can be represented as  
**(a)** Grass - Deer - Lion **(b)** Lion - Grass - Deer  
**(c)** Deer - Grass - Lion **(d)** Grass - Lion - Deer
102. Plant hormone that induces cell division as :  
**(a)** Dormins **(b)** Auxins  
**(c)** Gibberellins **(d)** Kinnis

103. Mitosis actually means :  
**(a)** Division of cytoplasm only  
**(b)** Division of nucleus only  
**(c)** Reduction in number of chromosomes  
**(d)** Both nuclear and cytoplasmic division
104. Mutation is :  
**(a)** A change that is inherited  
**(b)** A change which affects that parents only but never inherited  
**(c)** A change which affects that offsprings of generation only  
**(d)** A factor responsible for plant growth
105. In Dicot root :  
**(a)** Vascular bundles are arranged in a ring and have cambium  
**(b)** Xylem and phloem are radially arranged  
**(c)** Xylem is always arranged  
**(d)** Vascular bundles are scattered and are with cambium
106. The nucleus is absent in :  
**(a)** algae **(b)** fungi  
**(c)** escherichia coli **(d)** angiosperm
107. The basic structural and functional unit of living beings is  
**(a)** Tissue **(b)** Organ **(c)** Molecule **(d)** Cell
108. The smallest cell is :  
**(a)** Nerve cell **(b)** Egg of ostrich  
**(c)** Egg of Hen **(d)** PPLO
109. Protoplasm is physical basis of life was said by :  
**(a)** Hooke **(b)** Purkinje **(c)** Lamarck **(d)** Huxley
110. Tissues are :  
**(a)** A group of cells which are similar in origin and function  
**(b)** Cells which are not similar in origin  
**(c)** Group of cells which are not similar in function  
**(d)** A group of cell which are similar in function only
111. Increase in length of a stem is caused by :  
**(a)** Cork cambium  
**(b)** Vascular cambium  
**(c)** Apical meristem  
**(d)** Mitotic division in pith and cortex
112. Match the following :
- | List I                        | List II                                 |
|-------------------------------|---|
| (A) Golgi Body                | (1) Controls the movement of substances |
| (B) Ribosome                  | (2) Provide shape                       |
| (C) Cell wall                 | (3) protein synthesis                   |
| (D) Plasma membrane           | (4) Secretion                           |
| <b>(a)</b> A-4, B-1, C-2, D-3 | <b>(b)</b> A-2, B-1, C-3, D-4           |
| <b>(c)</b> A-4, B-3, C-2, D-1 | <b>(d)</b> A-2, B-4, C-1, D-3           |

113. Animals which give birth to young are called :  
 (a) Oviparous (b) Amphibious  
 (c) Coelomates (d) Viviparous
114. Mammalian eggs have :  
 (a) No yolk  
 (b) Little yolk  
 (c) Large amount of yolk  
 (d) Large amount of yolk concentrated at one pole
115. Memory weakness if one of the following parts is injured :  
 (a) Medulla (b) cerebellum  
 (c) cerebrum (d) Hypothalamus
116. Which part of the brain controls emotions like love, anger and pleasure ?  
 (a) Medulla oblongata (b) Hypothalamus  
 (c) Cerebrum (d) Cerebellum
117. Which part of the lens in human is helpful in adjustment of focal length ?  
 (a) Cornea (b) Mucus  
 (c) Ciliary body (d) Conjunctiva
118. The smallest blood vessel in the body ?  
 (a) Capillary (b) Artery (c) Vein (d) Vena cava
119. All the following diseases one caused by virus, except :  
 (a) Jaundice (b) Typhoid  
 (c) Mumps (d) Influenza
120. What would be given to an athlete for instant energy ?  
 (a) Fat (b) Vitamin  
 (c) Proteins (d) Carbohydrates



## MENTAL ABILITY

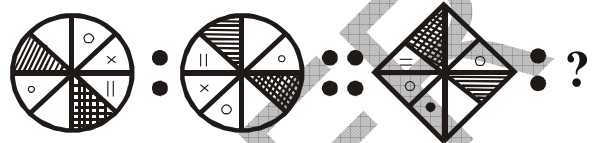
### CHOOSE THE CORRECT OPTION :

- Q.121 to 122 : Find the odd one out.  
 121. (a) JQPM (b) HROK (c) FTSI (d) AYXD  
 122. (a) GNP (b) MTD (c) LSE (d) YCI
- Q.123 to 124 : What will come the place of question mark?  
 123. WAMAN : CENEM :: GOD : ?  
 (a) FNE (b) EUH (c) ENG (d) HUE
124. A : A :: B : ?  
 (a) F (b) P (c) J (d) None
125. In which of the following alternative figures, the question figure is embedded ?



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

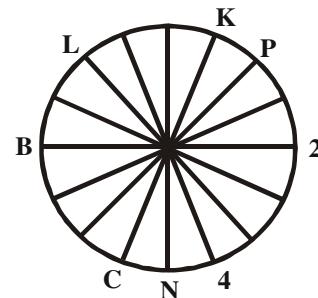
- Q.126 To 129 : What will come serially in place of question mark?  
 126. 97, 61, 36, 20, 11, 7, ?  
 (a) 3 (b) 4 (c) 5 (d) 6
127. Z, Y, W, T, ?, K, E  
 (a) M (b) P (c) R (d) N
128. AZYBXWCVUDTSE??  
 (a) QR (b) RS (c) ST (d) RQ
129. NP, RU, XB, FK, ?  
 (a) OS (b) OT (c) PV (d) QV
130. Which figure will fit in place of question mark?



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

131. Rearrange the letters 'TESDTNUS' to form a meaningful word and write the fourth letter, from the beginning of that word.  
 (a) N (b) E (c) T (d) D

- Q.132 to 135 : In the fig. given below alphabet from A to P are arranged on the circumference of a circle, by following a certain rule, some letters are shown in the fig. Some numbers are written instead of letters and some points are left blank. Study the arrangement of letters and answer the questions.



132. Which letter will come between L and B?  
 (a) M (b) J (c) H (d) None
133. Which letter will come between 2 and P?  
 (a) O (b) E (c) D (d) None
134. Which letter will come exactly opposite to 'N'?  
 (a) F (b) I (c) J (d) None
135. Find out the letters between B and C?  
 (a) TM (b) MU (c) HC (d) None

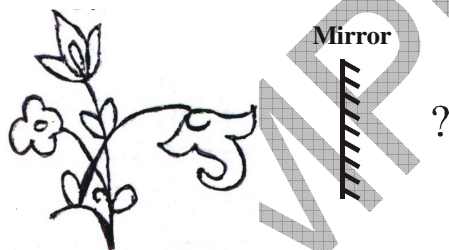
Q.136 to 140: In each question some letter series are given. Some letters are missing. The missing letters are given in proper sequences as one of the four alternatives. Find the correct alternative.

136. a — baa — aaba — ca — b  
 (a) bcca (b) ccaa (c) acaa (d) abac
137. mn — o — op — q — op — onm  
 (a) ompnn (b) pqqop (c) mpqpo (d) opqpo
138. d — p j m — d j — d m — d m p —  
 (a) m j d p j (b) p m m j j  
 (c) m p p j j (d) d d m j j
139. g g — g g g g — g g h — g h h — h h h h  
 (a) g h h h (b) h h h h  
 (c) g g g g (d) None
140. m — — dy — tx — ymt — dy — t  
 (a) m d d m x t (b) t x d m x m  
 (c) m t x d m t (d) t x m d x m

Q.141 to 143 : What will come the place of question mark?

141. BEST : GHVY :: ? : XZIE  
 (a) CAVR (b) VRAC (c) CARV (d) VARC
142. DWPKX : FZTPD :: ? : UEODS  
 (a) TBSIM (b) TDNCR (c) SBKYM (d) VRSIY
143. C52KPQ : EBP  
 G41LNR : DAR  
 P36TUV : ?  
 (a) CFU (b) DCU (c) CFT (d) FCV

144. If mirror is kept in front of the question figure, What will be its image?



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

Q.145 to 147 : Find the odd one.

145. (a) 11-19 (b) 23-31 (c) 61-53 (d) 79-71
146. (a) 492 (b) 273 (c) 143 (d) 112
147. (a) 24 (b) 56 (c) 105 (d) 119
148. I travelled 5 km Eastwards, then turned left and went 3 km. Again I turned left and went 3 km and finally I turned left and travelled 3 km. How far was I from the starting point?  
 (a) 8 km (b) 14 km (c) 9 km (d) None

Q.149 to 150 : Find the odd figure.

149. (a) (b)
- (c) (d)
150. (a) (b)
- (c) (d)

□□□