



**Max.Time: 120 Min**

**Max.Marks: 320 M**

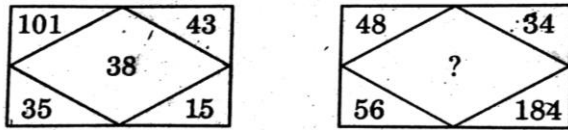
**Instructions:**

- i. The test paper consists of **80** multiple choice questions numbered from **1 to 80**, each question followed by four alternatives 1, 2, 3 and 4.
- ii. Mental Ability 1 to 20, Mathematics 21 to 35, Physics 36 to 50 and Chemistry 51 to 65, Biology 66 to 80.
- iii. Each question has only one correct option.
- iv. Each correct answer carries **4 Marks**.
- v. No negative marking for wrong answer.

**MAT (Q.NO.1 TO 20)**

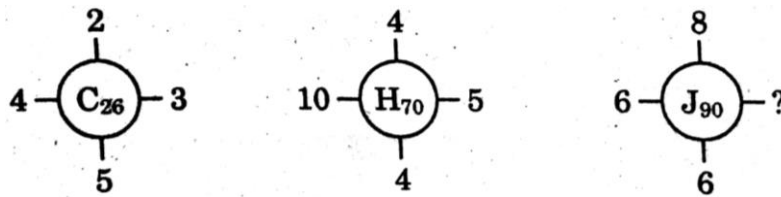
**Directions (Q. No-1 to 4): Find the missing character from among the given alternatives.**

1.



- 1) 127      2) 142      3) 158      4) 198

2.



- 1) 17      2) 19      3) 4      4) 25

3.

5	6	7
3	4	5
9	10	11
345	460	?

- 1) 535      2) 577      3) 755      4) 775

4.

A	D	H
F	I	M
?	N	R

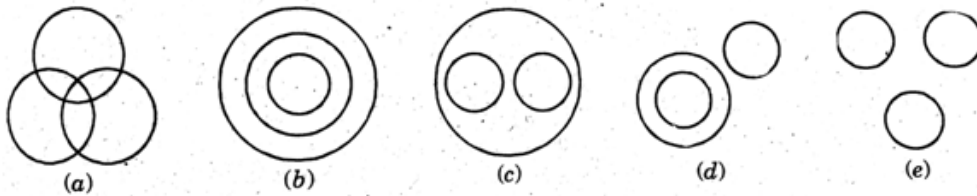
1) K

2) N

3) O

4) P

**Directions (Q.No-5 to 6) :** Each of the following questions below contains three elements. These three elements may or not have some linkage. Each group of the elements may fit into one of the diagrams at (a), (b), (c), (d) and (e). You have to indicate groups of elements in each questions fit into which of the diagram given below. The letter indicating the diagram is the answer.



5. **Cabinet, Home Minister, Minister**

1) a

2) b

3) c

4) e

6. **Men, Rodents, Living beings**

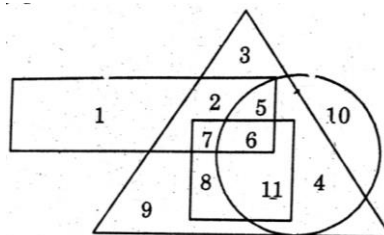
1) a

2) e

3) c

4) d

**Directions (Q.No-7 to 8) :** The following questions are based on the diagram given below.



1) The rectangle represents government employees.

2) The triangle represents urban people.

3) The circle represents graduates.

4) The square represents clerks.

7. **Which of the following statements is true ?**

- 1) All government employees are clerks.
- 2) some government employees are graduate as well as clerks.
- 3) All government employees are graduates.
- 4) All clerks are government employees but not graduates.

**8. Choose the correct statement :**

- 1) Some clerks are government employees.
- 2) No clerks in urban.
- 3) All graduates are urban.
- 4) All graduates are government employees.

**Directions (Q.No-9) :** In each of the following question, the given equation becomes correct due to the interchange of two signs. One of the four alternatives under it specifies the interchange of signs in the equation which made will make the equation correct. Find the correct alternative.

9.  $16 - 8 \div 4 + 5 \times 2 = 8$

- 1)  $\div$  and  $\times$                       2)  $-$  and  $\div$                       3)  $\div$  and  $+$                       4)  $-$  and  $\times$

**Directions (Q.No-10) :** In the following questions, the symbols

@, &, \$, % and # are used with the following meanings as illustrated below :

‘A \$ B’ means ‘A is not smaller than B’;

‘A # B’ means ‘A is not greater than B’;

‘A @ B’ means ‘A is neither smaller than nor equal to B’;

‘A & B’ means ‘A is neither smaller than nor greater than B’;

‘A % B’ means ‘A is neither greater than nor equal to B’.

Now, in each of the following questions, assuming the given statements to be true, find which of the three conclusions I, II and III given below them is/are definitely true and give your answer accordingly.

10. Statements : M @ J, J \$ T, T & N

Conclusion : I. N # J                      II. T % M                      III. M @ N

- 1) All are true
- 2) Only I and II are true

- 3) Only II and III are true                      4) Only I and III are true

11. If GO=32, SHE=49, then SOME will be equal to

- 1) 56                                      2) 58                                      3) 62                                      4) 64

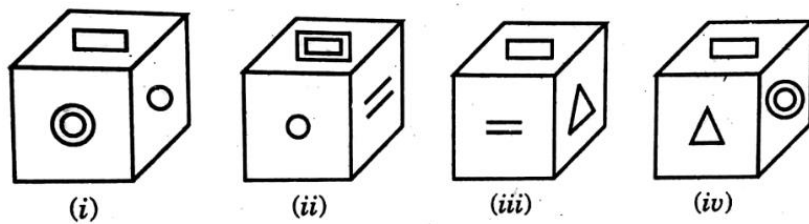
**Directions (Q. No:12):** It being given that :  $\Delta$  denotes 'equal to';  $\square$  denotes 'not equal to';  $+$  denotes 'greater than';  $-$  denotes 'less than';  $\times$  denotes 'not greater than';  $\div$  denotes 'not less than'.

Choose the correct statement in each of the following questions:

12.  $a + b - c$  does not imply

- 1)  $c + b - a$                       2)  $b - a + c$                       3)  $b \square a \square c$                       4) None of these

**Directions (Q. No: 13-14):** Below questions are based on the following illustrations, which are four views of a cube.



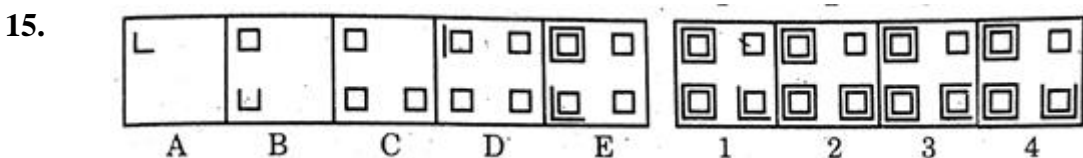
13. The symbol opposite the face having the symbol '=' is

- 1)                      2)                      3)                      4)

14. The symbol opposite the face having the is

- 1)                      2)                      3)                      4)

**Directions(Q.No : 15-16) : Figure series**



- 1) 1                                      2) 2  
3) 3                                      4) 4



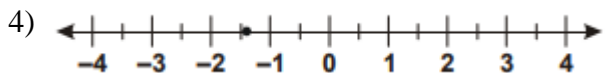
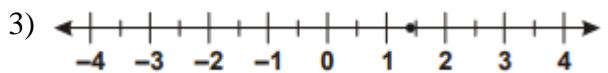
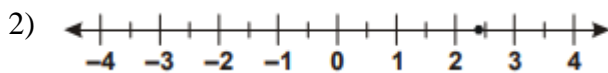
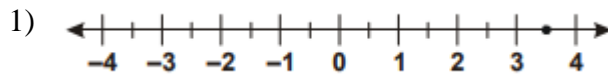
21.  $\triangle ABC$  and  $\triangle PQR$  are congruent under the correspondence  $ABC \leftrightarrow RQP$ . Write the parts of  $\triangle ABC$  that correspond to  $RP$ .

- 1) AC                      2) BC                      3) AB + BC                      4) AB

22.  $\sqrt[3]{\sqrt{0.000064}} =$

- 1) 0.002                      2) 0.02                      3) 0.2                      4) 0.04

23. Which point on the number line best represents 1.35?



24. Two numbers are in the ratio of 3: 5. If their sum is 64 is

- 1) 24 & 40                      2) 15 & 24                      3) 10 & 24                      4) 20 & 24

25. Which of the following equations can be formed using the expression  $x = 5$ :

- 1)  $2x + 3 = 13$                       2)  $3x + 2 = 13$                       3)  $x - 5 = 1$                       4)  $4x - 9 = 21$

26. Which of the following equations can be formed starting with  $x = 0$  ?

- 1)  $2x + 1 = -1$                       2)  $\frac{x}{2} + 5 = 7$                       3)  $3x - 1 = -1$                       4)  $3x - 1 = 1$

27. The next number in the pattern  $- 62, - 37, - 12$  \_\_\_\_\_ is

- 1) 25                      2) 13                      3) 0                      4) -13

28. Circumference of a circle of diameter 5 cm is

- 1) 3.14 cm                      2) 31.4 cm                      3) 15.7 cm                      4) 1.57 cm

29. All faces of a pyramid are always:

- 1) Triangular                      2) Rectangular                      3) Congruent                      4) None of these

30. If the two diagonals of a rhombus are 8cm & 6cm, its area is?

- 1)  $28\text{cm}^2$                       2)  $48\text{cm}^2$                       3)  $14\text{cm}^2$                       4)  $24\text{cm}^2$

31. The sum of first 'n' odd natural numbers is given by

- 1)  $2n$                       2)  $n^2$                       3)  $(n+1)$                       4)  $n^2+1$

32.  $\sqrt{256} \times 4^2 = x$ , then the value of  $x$  is

- 1) 1224                      2) 64                      3) 196                      4) 256
33. If  $\left(\frac{x}{y}\right) = \left(\frac{3}{2}\right)^{-2} \div \left(\frac{3}{7}\right)^0$ , then the value of  $\left(\frac{x}{y}\right)^{-3}$  is
- 1) 64                      2)  $\frac{729}{64}$                       3)  $\frac{64}{729}$                       4) 729
34. The value of  $11.3 \times 2.7 =$  \_\_\_\_\_.
- 1) 29.31                      2) 29.51                      3) 30.31                      4) 30.51
35. How many number of vertices does a cone has?
- 1) 1                      2) 2                      3) 3                      4) 6

**PHYSICS (Q.NO.36 TO 50)**

36. The device which measures the potential difference in an electric circuit
- 1) Voltmeter                      2)Ammeter                      3)Potentiometer                      4) Galvanometer
37. What is the electric potential at a point in an electric field, When 96 J work is done in moving a charge of 24C from infinity
- 1) 2V                      2)3V                      3)5V                      4)4V
38. The electrolyte used in a dry cell is
- 1)  $H_2SO_4$ (Dilute)                      2)  $NH_4Cl + H_2SO_4$
- 3)  $NH_4Cl$ (Paste)                      4) None of these
39. Mechanical (elastic) waves can travel
- 1) In a medium but not in a vacuum
- 2) In a vacuum but not in medium
- 3) In a vacuum as well as in a medium.
- 4) Neither in vacuum nor in a medium.
40. A force of 30N is applied at the small plunger which moves down 10m then work done by the applied force is
- 1) 300 J                      2) 200 J                      3) 100 J                      4) 500 J
41. A sound wave travelling in air has wavelength of  $1.6 \times 10^{-2}m$ . If the velocity of sound is 320m/s, calculate the frequency of sound.
- 1) 10,000Hz                      2) 20,000 Hz                      3) 15,000 Hz                      4) 25,000 Hz
42. An object 5 cm tall is placed 1 m from a concave spherical mirror which has a radius of curvature of 20 cm. The size of the image is
- 1) 0.11 cm                      2) 0.50 cm                      3) 0.55 cm                      4) 0.60 cm

43. At what distance from a convex mirror of focal length 2.5m should a boy stand so that his image has a height equal to half of the original height? The principal axis is perpendicular to the height  
1) 5 m                      2) 7.5 m                      3) 10 m                      4) 2.5 m
44. Which of the following capital English letter shows lateral inversion  
1) W                      2) X                      3) Y                      4) Z
45. Piston of cross -section area  $100 \text{ cm}^2$  is used in a hydraulic press to exert a force of  $10^7$  dynes on the water. The cross-sectional area of the piston which support an object having a mass 2000kg is ( $g=10\text{m/s}^2$ )  
1)  $100\text{cm}^2$               2)  $10^9 \text{ cm}^2$               3)  $2 \times 10^4 \text{ cm}^2$               4)  $2 \times 10^{10}\text{cm}^2$
46. One gram of ice at  $0^\circ\text{C}$  is added to 5 grams of water at  $10^\circ\text{C}$ . If the latent heat of ice be  $80 \text{ cal/g}$ , then the final temperature of the mixture is :  
1)  $5^\circ\text{C}$                       2)  $0^\circ\text{C}$                       3)  $-5^\circ\text{C}$                       4)  $20^\circ\text{C}$
47. The boiling point of water, on Fahrenheit scale is  
1)  $32^\circ\text{F}$                       2)  $98^\circ\text{F}$                       3)  $100^\circ\text{F}$                       4)  $212^\circ\text{F}$
48. 1gm of ice at  $0^\circ\text{C}$  is converted to steam at  $100^\circ\text{C}$  the amount of heat required will be ( $L_{\text{Steam}} = 536 \text{ cal/g}$ )  
1) 756 cal              2) 12000 cal              3) 716 cal              4) 450 cal
49. The scale on which ice point is taken as  $0^\circ\text{C}$  and steam point is taken as  $100^\circ\text{C}$  is  
1) Celsius scale                      2) Fahrenheit scale  
3) Kelvin scale                      4) Reaumur scale
50. When a boat in a river enters the sea water, then it  
1) sinks a little              2) rises a little              3) remains same              4) will drown

**CHEMISTRY (Q.NO.51 TO 65)**

51. The acids in which more than 30% of the molecules of it ionise in water to furnish  $\text{H}^+$  ions, are called ;  
1) Weak acids              2) Stearic acid              3) Weak base              4) Strong acids
52. 10 g of solid wax on melting will form \_\_\_\_\_g of molten wax  
1) 08 g                      2) 10 g                      3) 12 g                      4) 13 g
53. Water gas is the combination of  
1)  $\text{CO} + \text{N}_2$               2)  $\text{CO} + \text{CO}_2$               3)  $\text{CO} + \text{H}_2$               4)  $\text{CO}_2 + \text{H}_2$
54. Which of the following is strongest fibre \_\_\_\_\_  
1) cotton                      2) Nylon                      3) Rayon                      4) terelyne
55. White phosphorus reacts with caustic alkali solution in an inert atmosphere to produce \_\_\_\_\_  
1) Phosphine              2) Phosphate              3) Phosphite              4) Phosphorus
56. All properties of alkalis are due to the presence of the \_\_\_\_\_ formed on dissociation of



**the alkali in water**

- 1)  $H^+$  ions                      2)  $H_2O^+$  ions                      3)  $O_2^-$                       4)  $OH^-$  ions

**57. Sugar on heating forms new Substance**

Sugar  $\xrightarrow{\text{heating}}$  X + Y find X, Y

- 1) Carbon, Oxygen                      2) Carbon, Nitrogen  
3) Carbon, Carbon monoxide                      4) Carbon, Steam

**58. The ratio by Volume of hydrogen and oxygen in water is**

- 1) 1 : 2                      2) 2 : 1                      3) 1 : 8                      4) 1 : 3

**59. Which country is the pioneer in the production of silk**

- 1) India                      2) China                      3) Africa                      4) Japan

**60. Which of the following metals does not react with sodium hydroxide (Alkalies) :**

- 1) Beryllium                      2) Nickel                      3) Aluminium                      4) Chlorine

**61. Which of the following salt is used to preserve raw hides?**

- 1) NaCl                      2)  $NaHCO_3$                       3)  $K_2CO_3$                       4)  $NaNO_3$

**62. Which of the following is an example of Chemical change?**

- 1) Melting of ice                      2) Cutting of wood  
3) Burning of wood                      4) Freezing of water to ice

**63.  $X + 3H_2O \longrightarrow 2H_3PO_4$ . What is X?**

- 1)  $P_2O_3$                       2)  $P_2O_5$                       3)  $P_2O_2$                       4)  $P_2O_4$

**64. The \_\_\_\_\_ is an instrument used for weaving cloth.**

- 1) Charka                      2) Yarn                      3) Threads                      4) Warp

**65.  $MgCO_3$  is**

- 1) Carnalite                      2) Calamine                      3) Magnesite                      4) Malachite

**BIOLOGY (Q.NO.66 TO 80)****66. MATCH THE FOLLOWING**

- |   |  |
|---|--|
| <p><b>A) Frog</b></p> <p><b>B) Yeast</b></p> <p><b>C) Diaphragm</b></p> <p><b>D) Old stem</b></p> <p><b>E) Opening of trachea</b></p> | <p><b>a) Lenticels</b></p> <p><b>b) Floor of chest cavity</b></p> <p><b>c) Anaerobe</b></p> <p><b>d) Spiracles</b></p> <p><b>e) Skin and lungs</b></p> |
|---|--|

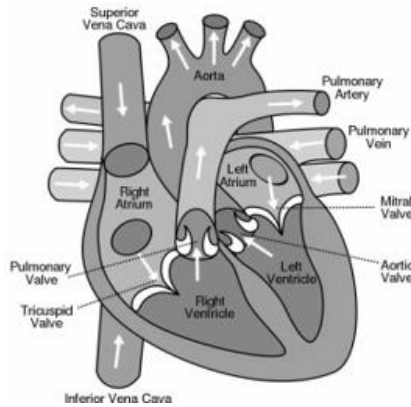
- 1) A-e, B-c, C-d, D-a, E-b                      2) A-e, B-c, C-a, D-b, E-d  
3) A-d, B-c, C-b, D-a, E-e                      4) A-e, B-c, C-b, D-a, E-d

**67. Food  $\rightarrow$  Energy + Alcohol +  $CO_2$** 

**Observe the equation given above and identify the type of reaction**

- 1) Fermentation                      2) Aerobic respiration  
3) Tracheal Respiration                      4) Respiration in Muscles

68. Observe the diagram of heart and answer the questions



a) Which is the largest artery that supplies oxygenated blood to all the parts

b) Artery which carries deoxygenated blood

c) Valve with two cusps

d) Chamber that receive blood from lungs

- 1) Aorta, Systemic vein, Bicuspid valve, left Atrium
- 2) Aorta, Pulmonary artery, Tricuspid valve, Right Atrium
- 3) Aorta, Pulmonary artery, Mitral valve, left Atrium
- 4) Aorta, Systemic Vein, Mitral valve, right Atrium

69. Which of the following types of manure is obtained by the decomposition of dead plants and animals?

- 1) Compost
- 2) Green manure
- 3) Farmyard manure
- 4) All of them

70. In plants, water is transported through

- 1) Xylem
- 2) Phloem
- 3) Stomata
- 4) Root hair

71. Match the following

Column A	Column B
i) Vein	A .Fight against germs
ii) Root	B .Birds, snakes, lizards
iii) WBCs	C .Human
iv) Uric acid	D .Carbon dioxide rich blood
v) Urea	E .Absorb water

- 1) i-b ii-e iii-a iv-d v-c
- 2) i-d ii-e iii-a iv-b v-c

3) i-d ii-e iii-a iv-c v-b      4) i-e ii-d iii-a iv-b v-c

**72. A food chain always starts with**

1. Producer                      2. Herbivore                      3. Carnivore                      4. All of them

**73. Inter linked food chain form a**

1. Food hub                      **2. Food web**                      3. Food series                      4. Food

**74. Which of the following statements is not correct?**

1. Forests protect the soil from erosion.
2. Plants and animals in a forest are not dependent on one another.
3. Forests influence the climate and water cycle.
4. Soil helps forests to grow and regenerate.

**75. The micro-organisms which convert the dead plants and animals to humus are known as**

1) Carnivores                      2) producers                      3)Decomposers                      4)Herbivores

**76. What are the advantages of transplanting ?**

- 1)It helps the farmer to select only the healthy seeding
- 2)Seedling can be planted at proper distance
- 3)It increases crop production
- 4)All of them

**77. Amoeba, Paramecium and Plasmodium are**

1) Algae                              2) Fungi                              3) Protozoans                      4) Bacterium

**78. Which of the following statements is true about viruses ?**

- 1) They cannot multiply by their own.
- 2) They do not show any characteristic of living things outside a host cell.
- 3) They do not feed respire, grow or multiply.
- 4) All of them are correct.

**79. Number of cells in a human body**

1)1000                              2)1,00,000  
3)10,000                              4)100 trillion

**80. Hollow (or) liquid filled cytoplasmic structures in plant cells are called**

1)Organelle                      2)Vacuole                      3)Nucleus                      4)Chromosomes