CENTUM TRAINERS SPECIAL TEST – I

STD: X **Max Marks: 75**

SUB: Science **Time : 3 hrs.**

PART – I $12 \times 1 = 12$

Note: Answer all the questions. Each question carries one mark.

1. Where should an object be placed so that a real image can be formed at infinity by a convex lens?
   a) 2F b) O c) F d)>2F
2. The atomicity of $K_2\ Cr_2\ O_7$ is
   a) 9 b) 11 c) 10 d) 12
3. The resistivity of a material is $4 \times 10^{-8} \Omega\ m$ and its conductivity will be
   a) $25 \times 10^{-8}\ mho\ m^{-1}$ b) $0.25 \times 10^{-8}\ mho\ m^{-1}$
   b) $25 \times 10^{8}\ mho\ m^{-1}$ c) $0.25 \times 10^{8}\ mho\ m^{-1}$
4. Solubility of NaI in water is
   a) 184g b) 92g c) 95g d) 36g
5. The organic compound used for coagulating rubber from latex is
   a) Methanoic acid b) Ethanoic acid
   c) Ethanol d) Methanol
6. Arrange α, β, γ in the increasing order of their ionising power.
   a) α, β, γ b) β, γ, α c) γ, β, α d) γ, α, β
7. The first step of both aerobic and anaerobic respiration is
   a) Electron Transport Chain b) Respiratory Quotient
   c) Glycolysis d) Kreb's cycle
8. A patient with blood group O was injured in an accident and had blood loss. Which blood group the doctor should effectively use for transfusion in this condition?
   a) O group b) AB group c) A or B group d) All blood group
9. Which one of the following is an IUCD?
   a) Copper - I b) Oral pills c) Diaphragm d) Tubectomy
10. The centromere is found at the centre of chromosome.
    a) Telocentric b) Metacentric c) Sub-Metacentric d) Acrocentric
11. Palaentology deals with the study of
    a) Analogous organs b) Fossils
    c) Gradual change d) Homologous organ
12. In a hexaploid wheat $(2n = 6X = 42)$ the haploid (n) and the basic (x) number of chromosomes respectively are
    a) $n = 7, X = 21$ b) $n = 21, X = 21$
    c) $n = 7, X = 7$ c) $n = 21, X = 7$

PART – II $7 \times 2 = 14$

Note: Answer any SEVEN questions. Question no. 22 is compulsory.

13. Write short notes on gears.
14. A source producing a sound of frequency $90Hz$ is approaching a stationary listener with a speed equal to $\left(\frac{1}{10}\right)$ of the speed of the sound. What will be the frequency heard by the listener?
15. Define one Calorie
16. Write any two uses of Ethanol
17. Why are the rings of Cartilages found in trachea of rabbit?
18. Name the parts of hindbrain.
19. What is called Evolution?
20. What are transgenic organisms?
21. Give the contributing factors for obesity.
22. Draw a ray diagram to show the image formation by a convex lens when the object is placed between F and 2F.

PART – III $7 \times 4 = 28$

Note: Answer any SEVEN questions. Question no. 32 is compulsory.

23. Describe Rocket Propulsion.
24. List the uses of simple microscope.
25. Explain why the ceilings of concert halls are curved.
26. What are the methods of preventing corrosion?
27. Compound 'A' is a colourless liquid having burning taste. When the vapour of the compound A is passed over heated copper at $573K$, it is dehydrogenated to acetaldehyde. What is compound 'A'? What is the role of copper in this Chemical reaction? Write the balanced chemical equation for this reaction.
28. Draw and label the parts of different types of conjoint vascular bundles.
29. The complete events of cardiac cycle last for $0.8\ Secs.$ What is the timing for each event?
30. Biofortification helps in removing hidden hunger. How?
31. What is the role of fat in the cause of atherosclerosis?
32. a) A solution was prepared by dissolving 25g sugar in 100g water. Calculate the mass % of solute.
    b) Say True or False [If false correct the statement]
    i) In our Daily life, solution of syrups, mouthwash antiseptic solution, household disinfectants, etc., the concentration of ingredients of solution is expressed as w/w.
    ii) Fat is soluble in water.

PART – IV $3 \times 7 = 21$

Note: Answer all questions. Draw diagrams wherever necessary.

33. a) i) Draw the picture of seven segment display for any one alpha numeric number.

ii) Give the merits of LED Bulb.

(Or)

b) Compare the properties of alpha, beta, and gamma radiations.

34. a) i) Give the salient features of Modern Atomic theory.

ii) List any two applications of Avogadro law.

(Or)

b) i) Explain the types of combination reaction.

ii) From the value of ionic product of water at $25°C$, find out the conventration of hydroxyl ions. At $25°C$, Concentration of hydrogen ions in water is $10^{-7}\ mol/dm^3$.

35. a) Explain the mole reproductive system of a rabbit with a neat labelled diagram.

(Or)

b) i) What is the biological significance of DNA?

ii) What precautions can be taken for preventing heat diseases?

iii) Mention any two approaches for protection of abused child.

*****ALL THE BEST*****

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