

PART – III**MODEL QUARTERLY EXAM 2024-2025****SCIENCE**

Time Allowed: 3:00 Hours]

[Maximum Marks : 75

- Instructions :** (1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
 (2) Use **Blue** or **Black** ink to write and underline and pencil to draw diagrams.

PART – I**Note :** (i) Answer **all** the questions. **12x1=12**

- (ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

- To project the rockets which of the following principle(s) is / (are) required?
 a) Newton's third law of motion b) Newton's law of gravitation
 c) law of conservation of linear momentum d) Both a and c
- The value of universal gas constant
 a) $3.81 \text{ mol}^{-1} \text{ K}^{-1}$ b) $8.03 \text{ mol}^{-1} \text{ K}^{-1}$ c) $1.38 \text{ mol}^{-1} \text{ K}^{-1}$ d) $8.31 \text{ mol}^{-1} \text{ K}^{-1}$
- SI unit of resistance is
 a) mho b) joule c) ohm d) ohm meter
- The gram molecular mass of oxygen molecule is
 a) 16g b) 18 g c) 32g d) 17g
- Chemical formula of rust is _____.
 a) $\text{FeO} \cdot x\text{H}_2\text{O}$ b) $\text{FeO}_4 \cdot x\text{H}_2\text{O}$ c) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ d) FeO
- Which of the following is the universal solvent?
 a) Acetone b) Benzene c) Water d) Alcohol
- Which is formed during anaerobic respiration
 a) Carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
- The brain of leech lies above the
 a) Mouth b) Buccal Cavity c) Pharynx d) Crop
- Which one of the following regarding blood composition is correct
 a) Plasma - Blood + Lymphocyte b) Serum - Blood + Fibrinogen
 c) Lymph - Plasma + RBC + WBC d) Blood - Plasma + RBC + WBC + Platelets
- Node of Ranvier is found in
 a) muscles b) axons c) dendrites d) cyton
- Which organ acts as both exocrine gland as well as endocrine gland
 a) Pancreas b) Kidney c) Liver d) Lungs
- Which one of the following is an IUCD?
 a) Copper – T b) Oral pills c) Diaphragm d) Tubectomy

PART - II

Note : Answer any **seven** questions. **Question No. 22** is compulsorily.

7X2=14

13. Differentiate mass and weight.
14. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.
15. State the law of volume.
16. Define : Atomicity
17. What is an amalgam?
18. Write the reaction for photosynthesis?
19. What is the importance of valves in the heart?
20. What are the structures involved in the protection of brain?
21. Name the secondary sex organs in male
22. Calculate the number of water molecule present in one drop of water which weighs 0.18g.

PART - III

Note : Answer any **seven** questions. **Question No. 32** is compulsorily.

7X4=28

23. What are the types of inertia? Give an example for each type.
24. Deduce the equation of a force using Newton's second law of motion.
25. a) Differentiate convex lens and concave lens.
b) State Snell's law.
26. Write the applications of Avogadro's law.
27. a) What happens when $MgSO_4 \cdot 7H_2O$ is heated? Write the appropriate equation.
b) Define solubility
28. Differentiate Monocot root and Dicot root
29. What is Transpiration? Give the importance of transpiration.
30. Classify neurons based on its structure.
31. Write the physiological effects of gibberellins.
32. The resistance of wire of length 10 m is 2 Ohm. If the area of cross section of the wire is $2 \times 10^{-7} \text{ m}^2$, determine its (i) resistivity (ii) conductance (iii) conductivity.

PART - IV

Note : Answer **all** the questions. Draw diagrams wherever necessary

7X3=21

33. a) (i) Differentiate the eye defects: Myopia and Hypermetropia. (5)
(ii) What is refractive index? (2)
- (OR)
- b) (i) What is meant by electric current? (2)
(ii) Name and define its unit. (3)
(iii) Which instrument is used to measure the electric current? How should it be connected in a circuit? (2)

34. a) (i) Give the salient features of “Modern atomic theory”. (7)
(OR)
b) Write notes on various factors affecting solubility. (7)
35. a) (i) Write the physiological effects of gibberellins. (5)
(ii) Why is the colour of the blood red? (2)
(OR)
b) (i) With a neat labelled diagram describe the parts of a typical angiospermic ovule. (5)
(ii) Draw and label the structure of human sperm. (2)

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