10 திருப்பூர் Register No. 10010

QUARTERLY EXAMINATION - 2024

Time : 3.00 Hours SCIENCE Marks : 75

PART I

NOTE: (i) Answer all the questions. (ii) choose the most appropriate answer from the given four alternatives and write the option code and the corresponding Answer 12×1=12

1. Newton's III law is applicable .....
   (a) for a body is at rest (b) for a body is in motion
   (c) both a & b (d) only for the bodies with equal masses
2. In a myopic eye, the image of the object is formed .....
   (a) behind the retina (b) On the retina (c) infront of the retina (d) On the blind spot
3. If a Substance is heated or cooled, the change in mass of that substance is .....
   (a) Positive (b) Negative (c) zero (d) none of the above
4. Which of the following is a triatomic molecule?
   (a) Glucose (b) Helium (c) Carbondioxide (d) Hydrogen
5. The process of coating the surface of Metal with a thin layer of zinc is called .....
   (a) Painting (b) thinning (c) galvanization (d) electroplating.
6. Which of the following is the universal solvent
   (a) Acetone (b) Benzene (c) water (d) Alcohol
7. Oxygen is produced at what point during photosynthesis?.
   (a) When ATP is converted to ADP (b) when CO_2 is fixed
   (c) when H_20 is splitted (d) all of these
8. During transpiration there is loss of
   (a) Carbon dioxide (b) Oxygen (c) water (d) none of the above
9. Identinfy the exocrine gland
   (a) Pituitary gland (b) Adrenal gland (c) Salivary gland (d) Thyroid gland
10. Syngamy results in the formation of
    (a) zoospores (b) Conidia (c) Zygote (d) chlamydospores
11. The loss of one or more chromosome in a ploidy is called
    (a) Tetraploidy (b) Aneuploidy (c) Euploidy (d) Polyploidy
12. Vomiting centre is located in
    (a) medulla oblongata (b) stomach (c) Cerebrum (d) the hypothalamus

PART II

NOTE: (i) Answer any Seven questions. (ii) Question No: 22 is compulsory 7×2=14

13. Differentiate mass and weight
14. State the law of volume
15. Define the unit of current ?
16. What is molar volume of gas ?.
17. Define the term solutions.

18. What is photosynthesis ? where in a cell does it occur ?
19. What is bolting? How can it be induced artificially?
20. What are the structures involved in the protection of brain?
21. Draw the structure of Adrenal gland and label its parts?
22. An object is placed at a distance 20cm from a convex lens of focal length 10cm. Find the image distance and nature of the image.

PART III

NOTE: (i) Answer any Seven question. (ii) Question No; 32 is compulsory. **7×4=28**

23. (i) Differentiate convex lens and concave lens
    (ii) Why does the sky appear in blue colour,
24. Derive ideal gas equation..
25. Give the salient features of "Modern atomic Theory"
26. In what way hygroscopic substances differ from deliquescent substance.
27. Differentiate Aerobic and Anaerobic respiration.
28. (i) Define triple fusion? (ii) what are the characteristics of insect pollinated flowers.
29. List out the parasitic adaptation in Leech.
30. (i) Why are thyroid harmones referred as personality hormone?. (ii) What are allosomes?
31. Enumerate the functions of blood?
32. (i) What happens when $MgSO_4$. $7H_20$ is heated?. Write the appropriate equations.
    (ii) A solution was prepared by dissolving 25g of sugar in 100 g of water. Calculate the mass percentage of solute?

PART IV

NOTE: (i) Answer all the questions. (ii) Draw diagram wherever necessary **3x7=21**

33. (a) Deduce the equation of a force using Newtons second law of motion.

OR

(b) (i) State Joule's law of heating
(ii) An alloy of nickel and chromium is used as the heating element - why?
(iii) How does a fuse wire protect electrical appliances?

34. (a) Derive the relationship between Relative molecular, mass and vapour density

OR

(b) (i) Write notes on Saturated solution and unsaturated solution
(ii) Classify the following substances into deliquescent, hygroscopic, Conc. Sulphuric acid, Copper Sulphate pentahydrate, Silica gel, Calcium chloride and Gypsum salt.

35. (a) (i) What is transpiration?. Give the importance of transpiration
(ii) What are synthetic auxins? Give examples.
(iii) Which hormone induces parthenocarpy in tomatoes?

OR

(b) How is the structure of DNA organised? What is the biological significance of DNA?.