Class : 10

Register Number | | | | | | | |

COMMON QUARTERLY EXAMINATION - 2023-24

SCIENCE

Time Allowed : 3.00 Hours] [Max. Marks : 75

PART – 1

Choose the correct answer. 12x1=12

1. The unit of g is ms^{-2}. It can be expressed as
   a) cms^{-1} b) $N kg^{-1}$ c) Nm^2kg-1 d) cm^2s^{-2}
2. The focal length of a lens is -0.25m, then its power is
   a) -4D b) 2.5D c) -40D d) -2D
3. Temperature is the average ---------- of the molecules of a substance.
   a) Difference in K.E and P.E b) Sum of P.E and K.E
   c) Difference in the T.E and P.E d) Difference in K.E and T.E
4. The unit of conductance is
   a) mho b) joule c) ohm d) ohm metre
5. 1 mole of any substance contains ---------- molecules.
   a) $6.023x10^{23}$ b) $6.023x10^{-23}$ c) $3.0115x10^{23}$ d) $12.046x10^{23}$
6. Neon shows Zero electron affinity due to
   a) Stable arrangement of neutrons b) Stable configuration of electrons
   c) Reduced size d) Increased density
7. Which of the following is the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
8. Oxygen is produced at what point during photosynthesis?
   a) When ATP is converted to ADP b) When CO_2 is fixed
   c) When H_2O is split d) All of these
9. Rabbits do not have
   a) Canines b) Incisors c) Premolars d) Molars
10. 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
11. Identify the exocrine gland
    a) Pituitary gland b) Adrenal gland c) Salivary gland d) Thyroid gland
12. The large elongated cells that provide nutrition to developing sperms are
    a) Primary germ cells b) Sertoli cells c) Leydig cells d) Spermatogonia

Part - II

Answer any seven questions. Q.No. 22 is compulsory. 7x2=14

13. State the principle of moments.
14. State Boyle's law.
15. Give any two examples for heterodi atomic molecules.
16. **Say true or false, If false give the correct statement.**
    i) Moseley's periodic table is based on atomic mass.
    ii) An alloy is a heterogenous mixture of metals.
17. What is respiratory quotient?
18. What are heart sounds? How are they produced?

19. **Match the following.**

A.	Nissil's granules	-	1) Forebrain
B.	Hypothalamus	-	2) Peripheral Nervous system
C.	Cerebellum	-	3) Cyton
D.	Schwann cell	-	4) Hind brain

20. Why are thyroid Hormones refered as personality hormone?
21. **Fill in:**
    a) The pairs of contrasting character of Mendel are called ----------
    b) Down's syndrome is the genetic condition with --------- chromosomes.
22. 3.5 litres of ethanol is present in 15 litres of aqueous solution of ethanol. Calculate the volume percent of ethanol solution.

PART – III

Answer any seven questions .Q.No: 32 is compulsory. **7x4 = 28**

23. Differentiate the eye defects Myopia and Hypermetropia.
24. Derive the ideal gas equation.
25. a) Name the acid that renders aluminium passive. Why?
    b) Identify the bond between Hand F in HF molecule.
    c) What property forms the basis of identification?
26. In what way hygroscopic substances differ from deliquescent substances. Give examples.
27. a) Write the dental formula of rabbit.
    b) How does leech suck blood from the host?
28. Enumerate the functions of blood.
29. a) Draw a neat labelled diagram of a neuron.
    b) Differentiate between voluntary and involuntary actions.
30. Write the physiological effects of gibberellins.
31. a) Name the secondary sex organs in male.
    b) Draw the structure of human sperm and mark the parts.
32. A piece of wire of resistance 10 Ω is drawn out so that its length is increased to three times its original length. Calculate the new resistance.

PART- IV

Answer all the questions in detail. **3x7=21**

33. a) State Newton's laws of motion.

(OR)

    b) With the help of a circuit diagram derive the formula for the resultant resistance of three resistance connected in (i) series and (ii) parallel.
34. a) Give the salient features of modern atomic theory.

(OR)

    b) Write notes on various factors affecting solubility.
35. a) The sex of the new born child is a matter of chance and neither of parents may be considered responsible for it. What would be the possible fusion of gametes to determine the sex of the child? Explain.

(OR)

    b) Write the events involved in the sexual reproduction of a flowering plant.
    i) Discuss the first event and write the types.
    ii) Mention the advantages and the disadvantages of that plant.