QL

QUARTERLY COMMON EXAMINATION - 2024

10 - Std

SCIENCE

Time : 3.00 Hrs.

Kanur Dt

MARKS : 75

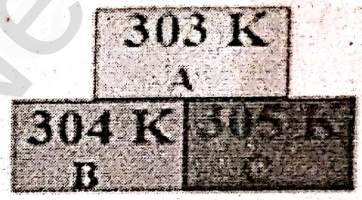
PART – I

I **Note: (i) Answer All the questions.** 12 X 1 = 12
(ii) Choose the most appropriate answer from the given four alternatives and write option code and the corresponding answer.

1) Impulse is equals to _____ .
(a) rate of change of momentum (b) rate of force and time
(c) change of momentum (d) rate of change of mass.

2) Power of a lens is -4D, then its focal length is:
(a) 4 m (b) -40 m (c) -0.25 m (d) -2.5 m

3) In the Given diagram, the possible direction of heat energy transformation is:



(a) A ← B, A ← C, B ← C (b) A → B, A → C, B → C
(c) A → B, A ← C, B → C (d) A ← B, A → C, B ← C

4) Kilowatt hour is the unit of:
(a) resistivity (b) conductivity (c) electrical energy (d) electrical power

5) Identify the non-aqueous solution.
(a) sodium chloride in water (b) glucose in water
(c) copper sulphate in water (d) sulphur in carbon-di-sulphide

6) The gram molecular mass of oxygen molecule is_____.
(a) 16 g (b) 18 g (c) 32 g (d) 17 g.

7) The process of coating the surface of the metal with a thin layer of zinc is called _____.
(a) painting (b) thinning (c) galvanization (d) electroplating.

8) The essential parts of a flower are _____.
(a) Calyx and Corolla (b) Calyx and Androecium
(c) Corolla and Gynoecium (d) Androecium and Gynoecium.

9) Which organ acts as both exocrine gland as well as endocrine gland?
(a) Pancreas (b) Kidney (c) Liver (d) Lungs.

10) Node of Ranvier is found in:
(a) muscles (b) axons (c) dendrites (d) cyton

11) Root hairs are _____.
(a) cortical cell (b) projection of the epidermal cell
(c) unicellular (d) both b and c.

12) Kreb's cycle takes place in _____.
(a) chloroplast (b) mitochondrial matrix
(c) stomata (d) inner mitochondrial membrane.

PART – II

II **Note: Answer any seven questions. Question No.22 is compulsory.** 7 X 2 = 14

13) State the principle of moments.
14) State Boyle's law
15) Define Atomicity.
16) State two conditions necessary for rusting of iron.

17) Give an example each i) gas in liquid ii) solid in liquid iii) solid in solid iv) gas in gas

18) Write the dental formula of rabbit.

19) What is bolting? How can it be induced artificially?

20) Identify the parts A, B, C and D

21) Who discovered Rh factor? Why was it named so?

22) An electric heater of resistance 5 Ω is connected to an electric source. If a current of 6 A flows through the heater, then find the amount of heat produced in 5 minutes.

PART – III

III **Note: Answer any seven questions. Question No.32 is compulsory.** 7 X 4 = 28

23) Differentiate the eye defects: Myopia and Hypermetropia.

24) Derive the ideal gas equation.

25) Give the applications of universal law gravitation.

26) Write notes on i) saturated solution ii) unsaturated solution

27) In what way hygroscopic substances differ from deliquescent substances.

28) Where are estrogens produced? What is the role of estrogens in the human body?

29) Write the physiological effects of gibberellins.

30) Enumerate the functions of blood.

31) **(i) Match the following**

Column I		Column II
A. Nissil's granules	-	Forebrain
B. Hypothalamus	-	Peripheral Nervous system
C. Cerebellum	-	Cyton
D. Schwann cell	-	Hindbrain

(ii) (a) The source of O2 liberated in photosynthesis is _____.

(b) _____ is ATP factory of the cells

32) Calculate the % of each element in calcium carbonate.
(Atomic mass: C-12, O-16, Ca -40)

PART - IV

IV **Note: Answer all the questions.**
Draw diagrams wherever necessary. 3 X 7 = 21

33) (a) (i) What is meant by electric current? (ii) Name and define its unit.
(iii) Which instrument is used to measure the electric current? How should it be connected in a circuit? ***(OR)***

(b) (i) State and prove the law of conservation of linear momentum.
(ii) Why does the sky appear in blue colour?

34) (a) (i) Derive the relationship between Relative molecular mass and Vapour density. (ii) What is meant by Amalgam? Give an example for it. ***(OR)***

(b) (i) What happens when $MgSO_4.7H_2O$ is heated? Write the appropriate equation. (ii) Define solubility. (iii) Define Hydrated salt.

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

(b) (i) With a neat labelled diagram explain the structure of a neuron.
(ii) Define reflex arc.