

V10S

Virudhunagar District
Common Quarterly Examination - 2023Standard 10
SCIENCE
PART - I

Marks: 75

Time: 2.30 Hours

12x1=12

Note : i) Answer all the questions:

ii) Choose the correct answers

- 1) One Kilogram force equals to
a) 9.8 dyne b) $9.8 \times 10^4 \text{N}$ c) $98 \times 10^4 \text{ dyne}$ d) 980 dyne
- 2) The eye defect 'presbyopia' can be corrected by
a) convex lens b) concave lens c) convex mirror d) Bifocal lenses
- 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) SI unit of resistance is
a) mho b) joule c) ohm d) ohm meter
- 5) Which one is making Electromagnet?
a) Pig Iron b) Wrought iron c) None of the above d) Steel
- 6) Which of the following is the universal solvent?
a) Acetone b) Benzene c) Water d) Alcohol
- 7) Which is formed during anaerobic respiration
a) Carbohydrate b) Ethyl alcohol c) Acetyl Co A d) Pyruvate
- 8) Which device is used to measure blood pressure
a) stethoscope b) sphygmomanometer c) Animometer d) Hydrometer
- 9) Bipolar neurons are found in
a) retina of eye b) cerebral cortex c) embryo d) respiratory epithelium
- 10) Which one is referred as "Master Gland"?
a) Pineal gland b) pituitary gland c) Thyroid gland d) Adrenal gland
- 11) Syngamy results in the formation of
a) zoospores b) conidia c) Zygote d) chlamydo spores
- 12) The father of Genetics is
a) Landsteiner b) Gregor Johann Mendel c) William Harvey d) Charles Darwin

PART - II

Note : Answer any 7 questions: (Q.No. 22 is compulsory)

7x2=14

- 13) Differentiate mass and weight.
- 14) What is power of accommodation of eye?
- 15) **Match:**

i) Linear expansion	-	a) hot body to cold body
ii) Cubical expansion	-	b) $1.381 \times 10^{-23} \text{ JK}^{-1}$
iii) Heat transformation	-	c) Change in length
iv) Boltzmann constant	-	d) Change in volume
- 16) State Ohm's law.
- 17) What is rust? Give the equation for formation of rust.

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- 18) What is respiratory quotient?
- 19) Why is the Sinoatrial node called the pacemaker of heart?
- 20) Differentiate between voluntary and involuntary actions.
- 21) Why did Mendel select pea plant for his experiments?
- 22) Calculate the current and the resistance of a 100W, 200V electric bulb in an electric circuit.

PART - III**Note : Answer any 7 questions: (Q.No. 32 is compulsory)****7x4=28**

- 23) Describe rocket propulsion.
- 24) Differentiate the eye defects : Myopia and Hypermetropia
- 25) i) Distinguish between the resistivity and conductivity of a conductor.
ii) Name any two devices, which are working on the heating effect of the electric current.
- 26) Explain the methods of preventing corrosion.
- 27) Write notes on i) Saturated solution
ii) Unsaturated solution
- 28) Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.
- 29) i) Enumerate the functions of blood. (Any two)
ii) What are the structures involved in the protection of brain?
- 30) Write the physiological effects of gibberellins.
- 31) i) What is colosturm?
ii) What are Okazaki fragment?
- 32) A solution is prepared by dissolving 45g of sugar in 180g of water. Calculate the mass percentage of solute.

PART - IV**Note : Answer all questions: Each questions carries seven marks. 3x7=21 (Draw diagram wherever necessary)**

- 33) i) State and prove the law of conservation of linear momentum.
ii) Define dispersion of light.

(OR)

- 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) i) Give the salient features of "Modern atomic theory".
ii) State Avogadro's law

(OR)

- i) In what way hygroscopic substances differ from deliquescent substances.
- ii) Uses of copper.
- 35) i) Differentiate between systole and diastole.
ii) Write a neat labelled diagram, explain the structure of a neuron.

(OR)

How is the structure of DNA organised? What is the biological significance of DNA?
