TVL10S

Tirunelveli District

Common Quarterly Examination - September 2025

Standard 10

Time: 3.00 Hrs. **SCIENCE** Marks: 75

PART - I

I. Choose the correct answer: **12×1=12**

1) 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
2) The value of Universal gas constant
   a) 3.81 J mol^{-1} K^{-1} b) 8.03 J mol^{-1} K^{-1}
   c) 1.38 J mol^{-1} K^{-1} d) 8.31 J mol^{-1} K^{-1}
3) SI unit of resistance is
   a) mho b) Joule c) ohm d) ohm meter
4) Which of the following is a triatomic molecule?
   a) Glucose b) Helium c) Carbon di oxide d) Hydrogen
5) The basis of modern periodic law is _____.
   a) atomic number b) atomic mass
   c) isotopic mass d) number of neutrons
6) A solution is a _____ mixture.
   a) homogeneous b) heterogeneous
   c) homogeneous and heterogeneous d) non homogeneous
7) Which is formed during anaerobic respiration?
   a) Carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
8) 'Heart of Heart' is called _____.
   a) SA node b) AV node c) Purkinje fibres d) Bundle of His
9) Node of Ranvier is found in
   a) Muscles b) Axons c) Dendrites d) Cyton
10) LH is secreted by
   a) Adrenal gland b) Thyroid gland
   c) Anterior pituitary d) Hypothalamus
11) Asexual reproduction takes place through budding in _____.
   a) Amoeba b) Yeast c) Plasmodium d) Bryophyllum
12) Okasaki fragments are joined together by _____.
   a) Helicase b) DNA polymerase c) RNA primer d) DNA ligase

PART - II

II. Answer any seven questions. Q.No. 22 compulsory: **7×2=14**

13) State Newton's second law.
14) Distinguish between ideal gas and real gas.
15) Define the unit of current.
16) What is molar volume of a gas?
17) Give an example:
   (i) gas in liquid (ii) solid in liquid (iii) solid in solid (iv) gas in gas
18) What is photosynthesis and where in a cell does it occur?
19) Define reflex arc.
20) Why are thyroid hormones referred as personality hormone?

21) What do you understand by the term phenotype and genotype?

22) An object is placed at a distance 20 cm from a convex lens of focal length 10 cm. Find the image distance and nature of the image.

PART - III

III. Answer any seven. Q.No. 32 compulsory: **7×4=28**

23) What are the types of inertia? Give an example for each type.

24) Differentiate the eye defects. Myopia and Hypermetropia.

25) i) Why is tungsten metal used in bulbs, but not in fuse wires?
ii) State ohm's law.

26) Derive the relationship between Relative molecular mass and vapour density.

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

28) i) Write the dental formula of rabbit.
ii) How does locomotion take place in leech?

29) i) What is cohesion?
ii) **Match the following:**

a) Leukemia	-	Phagocyte
b) Monocytes	-	Pressure gradient
c) AB blood group.	-	Blood cancer
d) Osmosis	-	Absence of antibody

30) Write the physiological effects of gibberellins.

31) Classify neurons based on its structure.

32) Calculate the volume of ethanol in 200 ml solution of 20% v/v aqueous solution of ethanol.

PART - IV

IV. Answer all the questions: **3×7=21**

33) a) State and prove the law of conservation of linear momentum.

(OR)

b) With the help of a circuit diagram derive the formula for the resultant resistance of three resistances connected.
(a) in series and (b) in parallel

34) i) Give the salient features of "Modern atomic theory".
ii) What is rust? Give the equation for formation of rust.
iii) State two conditions necessary for rusting of iron.

(OR)

i) Write notes on various factors affecting solubility.
ii) What happens when $MgSO_4.7H_2O$ is heated? Write the appropriate equation.

35) a) What are the phases of menstrual cycle? Indicate the changes in the ovary and uterus. **(OR)**

b) Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross.
