

COMMON HALF YEARLY EXAMINATION - 2024

* Standard - X

Time : 3.00 hrs

SCIENCE

Marks: 75

Note: This question paper contains four parts.

Part - I

Answer all the questions

12×1=12

- 1) The unit of 'g' is ms^{-2} . It can be also expressed as
 a) Cms^{-1} b) NKg^{-1} c) $\text{Nm}^2\text{Kg}^{-1}$ d) Cm^2s^{-2}
- 2) The value of universal gas constant
 a) $3.81 \text{ J mol}^{-1}\text{K}^{-1}$ b) $8.03 \text{ J mol}^{-1}\text{K}^{-1}$ c) $1.38 \text{ J mol}^{-1}\text{K}^{-1}$ d) $8.31 \text{ J mol}^{-1}\text{K}^{-1}$
- 3) The frequency, which is audible to the human ear is
 a) 50 KHz b) 20 KHz c) 15000 KHz d) 10000 KHz
- 4) Chemical formula of rust is _____
 a) $\text{FeO} \cdot x\text{H}_2\text{O}$ b) $\text{FeO}_4 \cdot x\text{H}_2\text{O}$ c) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ d) FeO
- 5) Photolysis is a decomposition reaction caused by _____
 a) heat b) electricity c) Light d) Mechanical energy
- 6) Kreb's cycle takes place in
 a) Chloroplast b) mitochondrial matrix
 c) Stomata d) inner mitochondrial membrane
- 7) During Transpiration there is loss of
 a) Carbon dioxide b) Oxygen c) Water d) None of the above
- 8) LH is secreted by
 a) Adrenal gland b) Thyroid gland c) Anterior pituitary d) Hypothalamus
- 9) The process of Spermatogenesis takes place in the _____
 a) Sertoli cells b) Seminiferous tubules c) Leydig cells d) Centrioles
- 10) The "use and disuse theory" was proposed by _____
 a) Charles Darwin b) Ernst Haeckle
 c) Jean Baptiste Lamarck d) Gregor Mendel
- 11) World "No Tobacco Day" is observed on _____
 a) May 31 b) June 6 c) April 22 d) October 2
- 12) Soil erosion is more where there is _____
 a) no rainfall b) Low rainfall c) rainfall is high d) none of these

Part - II

Note: Answer any seven questions. Question No. 22 is compulsory:

7×2=14

- 13) Differentiate Convex Lens and Concave Lens.
- 14) Define, the unit of current.
- 15) Match the following:
 a) Co-60 - Mumbai
 b) Fuel - Hydrogen Bomb
 c) BARC - Leukemia
 d) Fusion reaction - Uranium
- 16) What is Molar volume of a gas?

(2)

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- 17) What is aqueous and non-aqueous solution? Give an example.
 18) Name the simplest ketone and give its structural formula.
 19) Write the dental formula of rabbit?
 20) Define reflex arc
 21) Identify the parts A, B, C and D



- 22) Calculate the velocity of a moving body of mass 5Kg whose linear momentum is 2.5 Kgms^{-1} .

Part - III

Note: Answer any seven questions. Question No. 32 is compulsory:

7×4=28

- 23) a) Differentiate the mass and weight.
 b) Why are traffic signals red in colour?
 24) What are the advantages of LED TV over the normal TV?
 25) Derive the ideal gas equation.
 26) Explain smelting process
 27) Difference between reversible and irreversible reaction.
 28) a) Write a short note on mesophyll.
 b) What is respiratory Quotient?
 29) Define Ethnobotany and write its importance.
 30) a) What are the consequences of deforestation?
 b) State the application of DNA finger printing technique.
 31) With a neat labelled diagram describe the parts of the typical angiospermic ovule.
 32) What is the pH of 1.0×10^{-5} molar solution of KOH?

Part - IV

Note: Answer all the questions. Draw diagrams wherever necessary:-

3×7=21

- 33) a) i) List the five properties of Light.
 ii) How does a fuse wire protect electrical appliances? [or]
 b) i) What is a nuclear reactor? Explain its essential parts with their functions.
 ii) Why does sound travel faster on a rainy day than on a dry day?
 34) a) i) How is ethanol manufactured from Sugarcane?
 ii) Define the term: Solution. [or]
 b) i) Application of Avogadro's Law any four
 ii) State two conditions necessary for rusting of iron
 iii) The normal pH of human blood is _____
 35) a) i) What are the factors affecting photosynthesis?
 ii) What are allosomes?
 iii) What do you understand by the term phenotype and genotype? [or]
 b) i) Differentiate between Type - I and Type - II Diabetes mellitus. (any four points)
 ii) Type of Neurons?
 iii) Who is called the Father of Indian Green Revolution?
