

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) Nm^2Kg^{-1} d) Cm^2s^{-2}
- 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) 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) $FeO \cdot xH_2O$ b) $FeO_4 \cdot xH_2O$ c) $Fe_2O_3 \cdot xH_2O$ 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?

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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?
