S COMMON HALFYEARLY EXAM - 2024

Standard - X

Time : 3.00 hrs **SCIENCE** **Marks: 75**

Part - A

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

1) Newton's III law is applicable
   a) for a body is at rest b) for a body is motion
   c) both a & b d) only for bodies with equal masses
2) The value of universal gas constant
   a) 3.81 $Jmol^{-1}K^{-1}$ b) 8.03 $Jmol^{-1}K^{-1}$ c) 1.38 $Jmol^{-1}K^{-1}$ d) 8.31 $Jmol^{-1}K^{-1}$
3) SI unit of resistance is
   a) mho b) joule c) ohm d) ohm meter
4) The gram molecular mass of oxygen molecule is
   a) 16g b) 18g c) 32g d) 17g
5) Which of the following represents precipitation reaction.
   a) $A_{(S)}+B_{(S)} \rightarrow C_{(S)}+D_{(S)}$ b) $A_{(S)}+B_{(aq)} \rightarrow C_{(aq)}+D_{(l)}$
   c) $A_{(aq)}+B_{(aq)} \rightarrow C_{(S)}+D_{(aq)}$ d) $A_{(aq)}+B_{(S)} \rightarrow C_{(aq)}+D_{(l)}$
6) Which of the following are used as anaesthetics?
   a) Caboxylic acids b) Ethers c) Esters d) Aldehyoles
7) The animals which give birth to young ones are
   a) Oviparous b) Viviparous c) Ovoviviparous d) All the above
8) Vomiting centre is located in
   a) Medulla oblongata b) Stomach c) Cerebrum d) hypothalamus
9) Syngamy results on the formation of _____
   a) Zoospores b) Condidia c) Zygote(egg) d) Chlamydospores
10) 9:3:3:1 ratio is due to
   a) Segregation b) crossing over c) Independent assertment d) Recessiveness
11) World "No Tobacco Day" is observed on
   a) May 31 b) June 6 c) April 22 d) October 22
12) The gas released from vehicles exhaust are
   i) Carbon monoxide ii) Sulphur dioixde iii) Oxides of nitrogen
   a) i and ii b) i and iii c) ii and iii d) i, ii and iii

Part - B **7×2=14**

II. Answers any 7 of the following questions. (Q.No. 22 is compulsory)

13) What are the causes of "Myopia"?
14) State Soddy and Fajan's displacement law.
15) What is aqueous and non-aqueous solution? Give an example.
16) How do detergents cause water pollution? Suggest remedial measures to prevent this pollution?
17) What is called Respiratory quotient?
18) What is Neurogenic heart Beat?
19) Assertion: Application of cytokinin to marketed vegetables. Can keep them fresh for several days
    Reasons: Cytokinin delay senescence of leaves and other organs by mobilisaiton of nutrients.
    a) If both A and R are true and R is correct explanation of A
    b) If both A and R are true but R is not the correct explanation of A
    c) A is true but R is false d) Both A and R are false.

20) What is Colostrum? How is milk production hormonally regulated?
21) Differentiate between Type I and Type II diabetes mellitus
22) Three resistors of 1Ω, 2Ω and 4Ω are connected in parallel in a circuit. If a 1Ω resister draw a current of 1A, find the current through the other two resistors.

Part - C **7×4=28**

III. Answers any 7 questions given below. (Q.No. 32 is compulsory)

23) a) State Boyle's law
b) What is Co-efficient of cubical expansion?
24) a) What do you understand by the term "Ultrasonic Vibration"?
b) State two uses of ultrasonic vibrations?
25) The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with Con.H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A,B,C and D.
26) Match columns I, II and III correctly.

Organs	Membranous covering	Location
Brain	Pleura	abdominal cavity
Kidney	Capsule	Mediastinum
Heart	mehings	enclosed in thoracic cavity
Lungs	pericardium	cranial cavity

27) Describe the structure and working of the human heart. (Draw the picture)
28) a) What are the three basic parts of Neuron.
b) Bring out any two physiological activities of abscisic acid.
29) How is the structure of DNA organised? What is the biological significance of DNA
30) Natural selection is a driving force for evolution. How?
31) Discuss the importance of bio technology in the field of medicine.
32) Calculate the P^H of 1×10^{-4} molar solution of NaOH.

Part - D

IV. Answer all questions. (Draw picture if needed) **3×7=21**

33) a) Deduce the equation of a force using Newton's second law of motion.
b) Write the applications convex lenses.
c) Momentum measures the magnitude of a force. What are the units of mementum in SI system of C.G.S system.
[or]
a) What is a nuclear reactor? Explain its essential parts with their functions?
b) Explain why the ceilings of concert halls are curved
c) What is the minimum distance required to hear an echo?
34) a) Derive the relationship between relative molecular mass and vapour density
b) Differentiate reversible and irreversible reactions.
c) What is the pH value for Antacids.
[or]
a) What is called homologous series? Give any three of its characteristics?
b) Give an example each (i) gas in liquid (ii) solid in liquid (iii) solid in solid
35) a) What are the structures envolved in the protection of brain?
b) Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.
[or]
a) What are the sources of solid wastes? How are solid wastes managed?
b) Write a short note on editor and its main parts?
c) In which year pocso Act as produced?

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