COMMON QUARTERLY EXAM - 2024
Standard - X

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

Part - I

i) Answer all the questions.

ii) Choose the most appropriate answer from the given 4 alternatives and write the option code and the corresponding answer: 12×1=12

1) Which is formed during anaerobic respiration?
   a) Carbohydrate   b) Ethyl alcohol   c) Acetyl CoA   d) Pyruvate

2) The body of leech has
   a) 23 segments   b) 33 segments   c) 38 segments   d) 30 segments

3) Which one of the following shows correct composition of blood
   a) Plasma - Blood + Lymphocyte   b) Serum - Blood + Fibrinogen
   c) Lymph - Plasma + RBC + WBC   d) Blood - Plasma + RBC +WBC + Platelets

4) Bipolar neurons are found in
   a) retina of eye   b) cerebral cortex   c) embryo   d) respiratory epithelium

5) Which one is referred as "Master Gland"?
   a) Pineal gland   b) Pituitary gland   c) Thyroid gland   d) Adrenal gland

6) If the Earth shrinks to 50% of its real radius its mass remaining the same, the weight of a body on the Earth will
   a) decrease by 50%   b) increase by 50%
   c) decrease by 25%   d) increase by 300%

7) Where should an object be placed so that a real and inverted image of same size is obtained by a convex lens
   a) f   b) 2f   c) infinity   d) between f and 2f

8) 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

9) SI unit of resistance is
   a) mho   b) joule   c) ohm   d) ohm meter

10) The volume occupied by 1 mole of a diatomic gas at S.T.P is
    a) 11.2 litre   b) 5.6 litre   c) 22.4 litre   d) 44.8 litre

11) The process of coating the surface of metal with a thin layer of zinc is called ____
    a) painting   b) thinning   c) glavanization   d) electroplating

12) Which of the following is the universal solvent?
    a) Acetone   b) Benzene   c) Water   d) Alcohol

Part - II

Note: Answer any 7 questions:-   7×2=14

13) Define inertia. Give its classification.
14) Define dispersion of light.
15) State Boyle's law
16) What happens to the resistance, as the conductor is made thicker?
17) What is Molar volume of a gas?
18) What is rust? Give the equation for formation of rust.

19) What is aqueous and non-aqueous solution?

20) Why should the light dependent reaction occur before the light independent reaction?

21) What does CNS stand for?

22) What is the importance of valves in the heart?

Part - III

Note: Answer any 7 questions:- (Q.No.32 is compulsory)   **7×4=28**

23) A pure tall plant (TT) is crossed with pure dwarf plant (tt), what would be the F1 and F2 generations? Explain.

24) A 100 watt electric bulb is used for 5 hours daily and four 60 watt bulbs are used for 5 hours daily. Calculate the energy consumed (in kWh) in the month of January.

25) Susan's father feels very tired and frequently uirnates. After clinical diagnosis he was advised to take an injection daily to maintain his blood glucose level. What would be the possible cause for this? Suggest preventive measures.

26) "Wearing helmet and fastening the seat belt is highly recommended for safe journey". Justify your answer using Newton's laws of motion.

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

28) Write notes on various factors affecting solubility.

29) a) Calculate the number of moles in 27 grams of aluminium.
   b) Calculate the gram molecular mass of CO_2.

30) a) Mention the two cases in which there will be no Doppler effect in sound
   b) What is stellar energy.

31) List any four properties light.

32) 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 gaseous compound. Find A,B,C and D.

Part - IV

Note: Answer all the questions:-   **3×7=21**

33) a) Define Mole and Give the salient features of "Modern atomic theory". **[or]**
   b) i) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.
      ii) Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.

34) a) Differentiate the following
      i) Monocot root and Dicot root ii) Aerobic and Anaerobic respiration **[or]**
   b) i) Explain the male reproductive system of rabbit with a labelled diagram.
      ii) What is bolting? How can it be induced artificially?

35) a) i) State Newton's laws of motion.
      ii) Deduce the equation of a force using Newton's second law of motion. **[or]**
   b) i) Explain the construction and working of a 'Compound Microscope'
      ii) Why does the sky appear in blue colour?

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