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Class 10 - Science

Date: 02-10-2025

Section A - Multiple Choice Questions

Q1. The decomposition of vegetable matter into compost is an example of a/an: (1 marks)

    a. Exothermic reaction

    b. Endothermic reaction

    c. Displacement reaction

    d. Neutralization reaction

Q2. Which component of blood helps in transporting oxygen from the lungs to the tissues? (1 marks)

    a. Platelets

    b. WBCs

    c. Plasma

    d. Haemoglobin

Q3. If the current (I) flowing through a conductor and the potential difference (V) across its ends are kept constant, how does the resistance (R) behave? (1 marks)

    a. R decreases

    b. R increases

    c. R remains constant

    d. R becomes zero

Q4. A solution turns red litmus blue. Its pH is likely to be: (1 marks)

    a. 2

    b. 5

    c. 7

    d. 10

Q5. When a ray of light passes from a denser medium to a rarer medium, it: (1 marks)

    a. Bends towards the normal

b. Bends away from the normal

    c. Goes undeviated

    d. Reflects back into the denser medium

Section C - Short Answer Questions

Q6. Define amphoteric oxides. Write balanced chemical equations to show the reaction of Aluminium oxide (Al_2O_3) with (i) Hydrochloric acid (HCl) and (ii) Sodium hydroxide (NaOH). (3 marks)

Q7. Explain phototropism and hydrotropism. Give one example for each type of movement in plants. (3 marks)

Q8. Draw the structures and write the IUPAC names for the first two members of the homologous series of Ketones. (3 marks)

Q9. Explain the mechanism of sex determination in human beings, clearly stating which parent determines the sex of the offspring. (3 marks)

Q10. What is the function of the ozone layer? Name two human-made compounds that cause its depletion. (3 marks)

Section D - Long Answer Questions

Q11. Describe the three major steps involved in the process of photosynthesis. Where does the light-dependent phase occur in the cell? (5 marks)

Q12. State the principle of an electric motor. Draw a labelled diagram showing the main components of a simple electric motor and explain the function of the split ring. (5 marks)

Q13. A student places an object 20 cm in front of a concave mirror. The mirror produces a real image that is three times the size of the object. Calculate (i) the image distance, and (ii) the focal length of the mirror. Draw a ray diagram showing the formation of this image. (5 marks)

Q14. What is meant by a homologous series of organic compounds? List any four characteristics of a homologous series. Give the chemical formula for the 3rd and 5th members of the Alkene series. (5 marks)

Q15. Explain the 'Three R's' strategy for sustainable management of natural resources. Also, list three advantages of rainwater harvesting. (5 marks)