

CBSE TEST PAPER-05

SCIENCE & TECHNOLOGY (Class-10)

Chapter 4. Carbon and its compounds

1. Name the functional group present in the compound CH_3NH_2 and name it. (1 mark)
2. Write the name and chemical formula of the organic acid present in vinegar. (1 mark)
3. A compound has molecular formula $\text{C}_2\text{H}_6\text{O}$. It is usable as a fuel. Name it. (1 mark)
4. An organic compound A on heating with acetic acid and conc. Sulphuric acid gave a pleasant smelling compound B. What is the nature of compound A? (1 mark)
5. How is ethanol prepared from ethane? Write the chemical equation for the reaction involved. What is meant by denatured alcohol? What is the need to denature alcohol? (2 marks)
6. What is the unique property of carbon atom? How is this property helpful to us? (2 marks)
7. Complete and balance the following equations: (2 marks)
 - (i) $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \xrightarrow{\text{Combustion}}$
 - (ii) $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \xrightarrow{\text{Oxidation}}$
 - (iii) $\text{C}_2\text{H}_4 + \text{H}_2\text{O} \xrightarrow{\text{H}_3\text{PO}_4}$
 - (iv) $\text{CH}_3\text{COOH} + \text{CH}_3\text{OH} \xrightarrow[\text{H}_2\text{SO}_4]{\text{Conc.}}$
8. An organic compound A of molecular formula $\text{C}_2\text{H}_6\text{O}$ on oxidation gives an acid with the same number of carbon atoms as in the molecule A. Compound A is often used for sterilization of skin by doctors. Name the compound A and B. Write the chemical equation involved in the formation of B from A. (2 marks)
9. Give reasons: (2 marks)
 - (i) Common salt (sodium chloride) is added during the preparation of soap.
 - (ii) Soap is not suitable for washing clothes when the water is hard.
10. Explain the nature of the covalent bond using the bond formation in CH_3Cl . (3 marks)
11. (a) Write the chemical equation representing the preparation reaction of ethanol from ethane. (3 marks)
 - (b) Name the product obtained when ethanol is oxidized by either chromic anhydride or alkaline potassium permanganate.
 - (c) Give an example of an esterification reaction.
12. (i) What are the two properties of carbon which lead to the formation of a large number of carbon compounds? (3 marks)
 - (ii) What is a homologous series? Explain with an example. By how many carbon atoms and hydrogen atoms do any two adjacent homologous differ?
 - (iii) Give a test that can be used to differentiate chemically between butter and cooking oil. (5 marks)