

## Exercise-I

### A. Very Short Answer Type Questions

- Q.1** Write the formula of two homologous of propane ( $C_3H_8$ )
- Q.2** Give the general name of the class of compounds having the general formula  $C_nH_{2n-2}$
- Q.3** Give the general formula of alkane
- Q.4** Give the IUPAC name  
$$\begin{array}{c} CH_3 \\ | \\ CH_3-CH-CH_2-CH_3 \end{array}$$
- Q.5** Write the structural formulae for 2-methyl-2 butene
- Q.6** Write the formulae of Butanoic acid.
- Q.7** Write the chemical formula of the simplest hydrocarbon
- Q.8** Give two examples of unsaturated hydrocarbons
- Q.9** Give IUPAC name of following compounds  
 $CH_3 - C \equiv C - CH_3$
- Q.10** Write the structural formulae of neo-pentane
- Q.11** Write the IUPAC name of the compound  $CH_3COOH$
- Q.12** What is Vinegar ?
- Q.13** Will  $CH_3COOH$  be acidic, neutral or basic.
- Q.14** Complete the reaction  
 $CH_3COOH + NaHCO_3 \rightarrow$
- Q.15** Write the molecular formulae of an alkane and an alkene with twenty carbon atoms.
- Q.16** Give the names of the following functional group.  
– CHO, > CO
- Q.17** Name the functional groups present in the following compounds  
(i)  $CH_3CH_2CH_2COOH$   
(ii)  $CH_3CH_2CH_2OH$
- Q.18** To which group of the periodic table does carbon belong.

## Exercise-II

### A. Very Short Answer Type Questions

- Q.1** Name the main constituent of alcoholic drinks.
- Q.2** What are hydrocarbons?
- Q.3** Write the electronic configuration of carbon.
- Q.4** Name two allotropes of carbon
- Q.5** Write the name of  $C_{60}$
- Q.6** What type of bonds are formed by carbon?

### B. Short Answer Type Questions

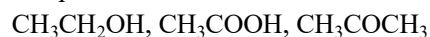
- Q.7** Write the general formulae of alkanes, alkenes and alkynes.
- Q.8** An organic compound 'X' is a constituent of wine and beer. This compound on oxidation forms another organic compound 'Y' which is a constituent of vinegar. Identify the compounds 'X' and 'Y'. Write the chemical equation of the reaction that takes place to form the compound 'Y'.
- Q.9** What are alkynes?
- Q.10** Write the structural formulae of the isomers of n-butane.
- Q.11** What are hydrocarbons? Give two points of difference between saturated and unsaturated hydrocarbons.
- Q.12** Define isomers. Give one example of a hydrocarbon other than pentane having isomers.

- Q.13** Classify the following compounds as alkanes, alkenes and alkynes.



- Q.14** Write two tests to demonstrate that acetic acid (ethanoic acid,  $CH_3COOH$ ) is acidic in nature. +

- Q.15** What is meant by a functional group in an organic compound? Pick out and name the functional groups present in the following compounds



- Q.16** What is homologous series ? State three characteristics of homologous series.

- Q.17** Write chemical equation for the reaction of
- ethanol with alkaline potassium permanganate
  - ethanoic acid with sodium hydrogen carbonate.
  - ethanol with oxygen

- Q.18** Give an example of each
- a straight chain hydrocarbon
  - branched chain hydrocarbon, and
  - ring chain hydrocarbon

- Q.19** What is alcohol ? Write the molecular formula condensed formula and structural formula of ethyl alcohol. What is its IUPAC name?

- Q.20** Write the formulae and names of first three carboxylic acid.

- Q.21** Write two tests to demonstrate that  $CH_3COOH$  is an acid. What do you understand by saponification of esters?

- Q.22** How does ethanoic acid react with

- (i) Sodium metal
- (ii) Sodium hydrogen carbonate
- (iii) Soda lime

**Q.23** Complete the following reactions :

- (i)  $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{Alc. KMnO}_4}$
- (ii)  $\text{C}_2\text{H}_5\text{OH} + \text{Na} \longrightarrow$
- (iii)  $\text{CH}_3\text{CH}_2\text{OH} + \text{O}_2 \longrightarrow$

**Q.24** Write the molecular formulae and names of lower and higher homologous of  $\text{C}_4\text{H}_6$

### C. Long Answer Type Questions

- Q.25** Which properties of carbon make it a versatile element. Discuss its bonding in saturated and unsaturated hydrocarbons.
- Q.26** Define structural isomerism. Draw the structural formula of all the isomers of butane and pentane.
- Q.27** What is an unsaturated hydrocarbon? Name one such hydrocarbon. Give its molecular and structural formula.
- Q.28** With the help of a labelled diagram and required chemical equation, describe the formation of ester.
- Q.29** Give any two differences between diamond and graphite.

### D. Fill in the Blanks

- Q.30** The organic acid present in vinegar is .....
- Q.31** The next homologue of  $\text{C}_2\text{H}_5\text{OH}$  is .....
- Q.32** The functional group present in ethanol is .....