

UNIT 11

CARBON AND ITS COMPOUNDS



Learning Objectives



After studying this lesson, the student will be able to:

- ◆ know the importance of organic compounds.
- ◆ classify the organic compounds and name them based on IUPAC rules.
- ◆ identify the functional groups of organic compounds.
- ◆ explain the preparation, properties and uses of ethanol and ethanoic acids.
- ◆ know the composition and preparation of soap and detergent.
- ◆ understand the cleansing action of soap and detergents.
- ◆ differentiate soap and detergents.

INTRODUCTION

You have studied, in your lower classes, that carbon is an inseparable element in human life as we use innumerable number of carbon compounds in our day to day life. Because, the food we eat, medicines we take when ill, clothes we wear; domestic and automobile fuels, paint, cosmetics, automobile parts, etc., that we use contain carbon compounds. The number of carbon compounds found in nature and man-made, is much higher than that of any other element in the periodic table. Infact there are more than 5 million compounds of carbon. The unique nature of carbon, such as catenation, tetravalency and multiple bonding, enables it to combine with itself or other elements like hydrogen, oxygen, nitrogen, sulphur etc., and hence form large number of compounds. All these compounds are made of covalent bonds. These compounds

are called **organic compounds**. In this lesson, you will learn about carbon compounds.

11.1 GENERAL CHARACTERISTICS OF ORGANIC COMPOUNDS

Everything in this world has unique character, similarly organic compounds are unique in their characteristics. Some of them are given below:

- ◆ Organic compounds have a high molecular weight and a complex structure.
- ◆ They are mostly insoluble in water, but soluble in organic solvents such as ether, carbon tetrachloride, toluene, etc.
- ◆ They are highly inflammable in nature
- ◆ Organic compounds are less reactive compared to inorganic compounds. Hence, the reactions involving organic compounds proceed at slower rates.