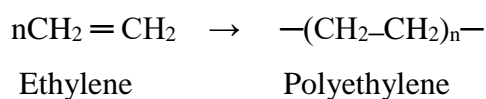


**HIGH POLYMERS****2.1 INTRODUCTION:**

Polymers are materials of very high molecular weight that have many applications in the modern society. Polymers are obtained through the combination of small molecules called monomers. For example, polyethylene is formed from the monomer ethylene. In order to form polymers, monomers should either have reactive functional groups or a double (or triple) bond whose reaction provides the necessary linkages between repeat units. The total number of bonding sites or functional groups present in a monomer molecule is called the functionality of the monomer

The number of repeating units present in a polymer is called degree of polymerisation



Here n is the degree of polymerization. When the value of n is very large, that is, in the range of hundreds or thousands, the polymers are called **High Polymers**.

2.2 Empathy:

The advantage of polymers /plastics is that they are light weight, water resistant, durable, strong, economical and resistant to corrosion chemicals.

But most of the plastics are Non biodegradable (do not degrade quickly) and pose a danger during recycling.

The other disadvantages of plastics are that they pollute the environment, pose a danger to wild life.

The biggest of them is that burning of plastics releases toxic fumes into the environment, in turn taking the air pollution to much higher level

2.3 Classification of polymers:

- 1) Natural and synthetic polymers - Based on origin
- 2) Thermoplastic and thermosetting polymers - Based on behaviour of heating
- 3) Addition and Condensation polymers – Based on method of preparation.

2.4 Engineering Plastics:

Plastics are high polymers which are capable of being shaped or moulded. These polymers can be either natural or synthetic organic compounds of high molecular mass with added substances to improve their properties and performance. This allows them to be cast, pressed or extruded into a variety of shapes. The plastics are used in the manufacture of a variety of industrial products such as films, fibres, tubes, plates, bottles, boxes etc.,