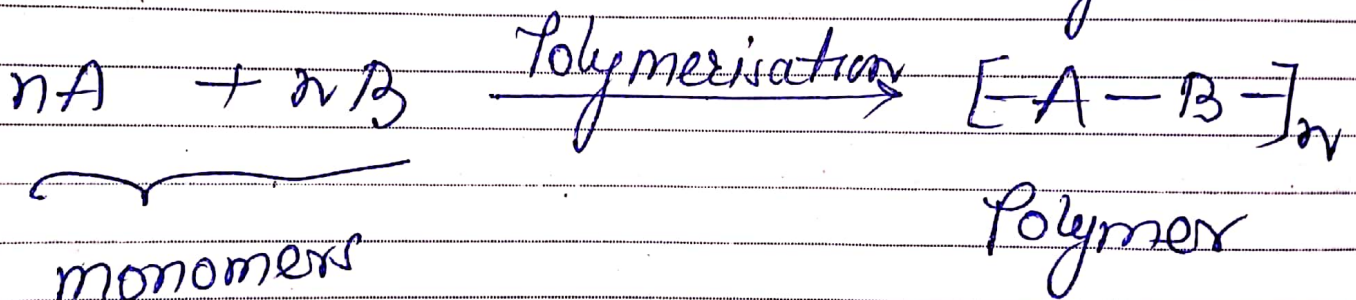
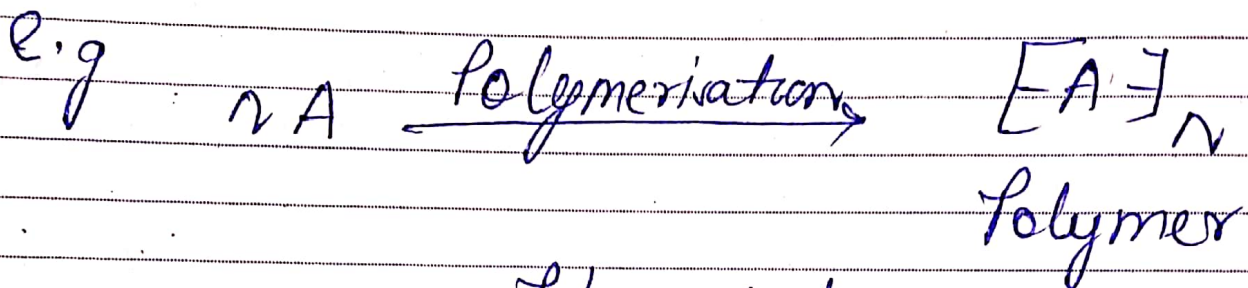


Synthetic Polymers

The term "Polymer" was coined by Berzelius. Polymers are macromolecules made up of repeating molecular unit joined to each other in a regular manner. Repeating units are simple molecules called monomers.



$n = \text{No. of monomeric unit}$

Degree of Polymerisation: The length of the polymeric chain is specified by the repeating unit in the chain. The no. of repeating monomer unit is called degree of polymerisation. The molecular mass of an addition polymer is the product of the molecular mass of the monomeric unit.

The molecular mass of the polyethene bearing 1000 degree of

polymerisation would be $28 \times 1000 = 28000$, Most of the high molecular mass polymers have the molecular mass within the range of 10^3 to 10^6 .

Difference between Polymers and Macromolecules

Large molecules are called Macro-molecules, All polymers are macromolecules, but all macromolecules may not be a polymer.

Polymer are those compound which has repeating unit of simple molecules, whereas many macromolecules may not be composed of repeating unit.

Classification of Polymers

(A) On the basis of origin polymers are classified as

(i) Natural polymers \rightarrow The polymers

obtained from living organism are called Natural polymer
e.g. Starch, Cellulose, protein, Nucleic acid etc.

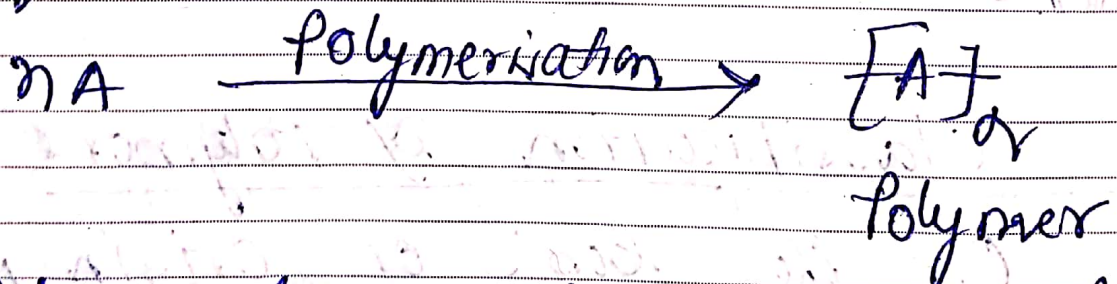
(A) Synthetic Polymer:- Man-made/Laboratory synthesised polymers are called synthetic polymers.
e.g - Polythene, PVC, Bakelite, polystyrene, Nylon etc.

(B) On the basis of the nature of repeating units

(i) Homopolymers

(ii) Co-Polymers

(i) Homopolymer are those polymers which are produced by polymerisation of only one type of monomer unit.



Polymer like polythene, PVC, Polyacrylonitrile (PAN), Teflon etc have same repeating monomeric unit.

