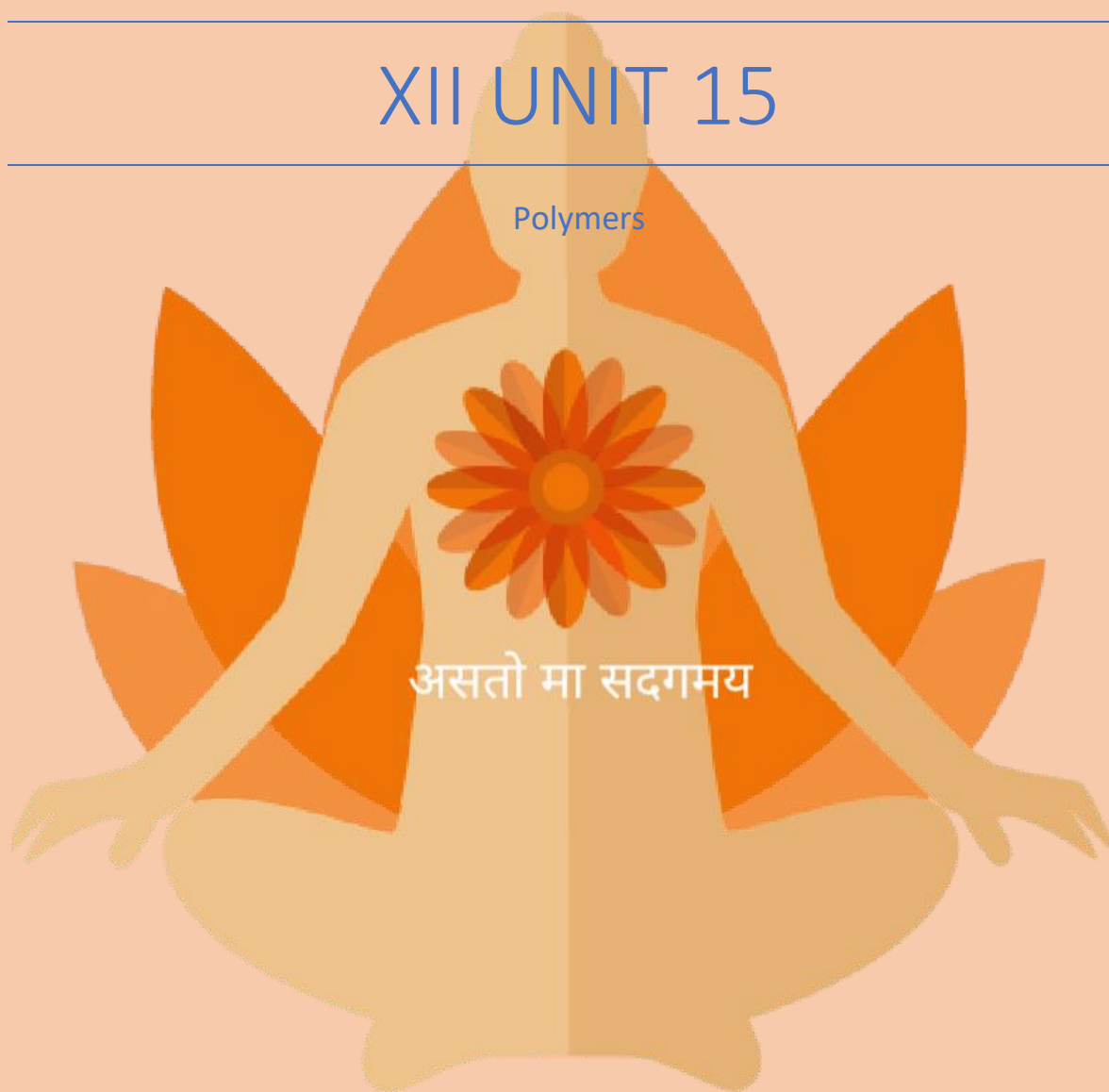




XII UNIT 15

Polymers



असतो मा सद्गमय

DECEMBER 18, 2020

CHEMISTRY MANTRA

105 Dilbagh Nagar Extension Jalandhar

Unit 15**Polymers**

Q.1 Give examples of semi synthetic polymers.

Answer: Cellulose acetate (rayon) and cellulose nitrate.

Q.2 Which type of polymer nylon-6,6, is ?

Answer: Polyimide polymer or (condensation polymer).

Q.3 Give example of thermoplastic.

Answer: Polythene, polystyrene and polyvinyl.

Q.4 Give the name of monomer of nylon-2, nylon-6.

Answer: Glycine and amino caproic acid.

Q.5 What is the significance of number 6,6 and 6 in nylon-6,6 and nylon-6?

Answer: In monomer of nylon-6,6 (hexamethylene diamine and adipic acid) 6,6 refers to number of carbon atoms. Both have six carbon atoms. In nylon-6, monomer is caprolactam which has also six carbon atoms.

Q.6 What is novolac?

Answer: The initial product formed when phenol and formaldehyde are polymerised is novolac.

Q.7 What is bakelite?

Answer: Bakelite is a thermosetting polymer of phenol and formaldehyde.

Q.8 Which type of polyesters are biodegradable?

Answer: Aliphatic polyesters.

Q.9 Name the polymer used in the insulation of electrical wire.

Answer: Styrene-Butadiene copolymer. (SBR or Buna-S)

Q.10 Name the polymer used in making non-stick kitchen wares.

Answer: Teflon.

Q.11 Name a polymer used as a substitute for wool.

Answer: PAN (Poly acrylonitrile) or orlon.

Q.12 Name a polymer used in making unbreakable crockery.

Answer: Melamine-formaldehyde co-polymer.

Q.13 Name the polymer used in making C.D.

Answer: Polystyrene and polycarbonates.

Q.14 Name a polymer used in the manufacture of paints and lacquers.

Answer: Glyptal.

Q.15 Name the monomer of (a) PHBV and (b) Nylon-2, Nylon-6.

Answer: (a) 3-Hydroxy butanoic acid and 3-Hydroxy pentanoic acid. (b) Glycine and amino caproic acid.

Q.16 Name the catalyst used in free radical addition polymerization as initiator.

Answer: Benzoyl peroxide.

Q.17 Name the catalyst used in the preparation of high density polythene.

Answer: Triethyl aluminium and titanium tetrachloride (Ziegler Natta catalyst).

Q.18 Name the catalyst used in the preparation of low density polythene.



Answer: Traces of dioxygen or peroxide initiator.

Q.19 What is difference between novolac and bakelite?

Answer: The initial linear product formed by the polymerisation of phenol and formaldehyde is called novolac. It is soft. Whereas novolac on heating with formaldehyde undergoes cross linking to form bakelite. It is hard.

Q.20 What percentage of sulphur is used to obtain tyre rubber from natural rubber?

Answer: 5% sulphur is used to obtain tyre rubber.

Q.21 What is the role of sulphur in the vulcanisation of rubber?

Answer: On vulcanisation, sulphur forms cross links at the reactive site of double bonds and thus rubber gets stiffened.

Q.22 Give one use of novolac.

Answer: Used in paints.

Q.23 Give chemical name of orlon.

Answer: Poly acrylonitrile (PAN).

Q.24 Name the polymer used for making handle of pressure cooker.

Answer: Bakelite.

Q.25 What is the role of benzoyl peroxide in the polymerization of ethene?

Answer: Produces free radical which initiates the chain reaction.

Q.26 Name the polymer of phthalic acid and ethylene ?

Answer: Glyptal.

Q.27 What are macromolecules?

Answer: Long chain organic molecules which have very high molecular mass are often called macromolecules.

Q.28 Define polymerization.

Answer: The process of formation of a polymer from respective monomers is called polymerization.

Q.29 What are polymers?

Answer: Polymer is defined as very large molecule having high molecular mass formed by repetition of some small monomer units.

Q.30 How are polymers classified on the basis of source?

Answer: On the basis of source polymers are classified as : (i) Natural polymers : Found in plants and animals e.g. Proteins, cellulose, starch, etc. (ii) Semi synthetic: Cellulose derivatives. e.g. Cellulose acetate (rayon) and cellulose nitrate. (iii) Synthetic : e.g. Plastic, nylon-6,6, Buna-S.

