Chapter- 15

Introduction to polymer chemistry Marks-3 with option 4

Multiple Choice Questions (1-Mark)

i) Semisynthetic polymer among the following is ------

a) linen b) silk c) nylon **d) cellulose nitrate**

ii) Addition polymer among the following is ----------

a) terylene **b) polythene** c) nylon 6,6 d) nylon 6.

iii) Homopolymer among the following is ------

a) Buna-S **b) Nylon 6,6** c) PHBV d) Dacron

iv) Which of the following is a biodegradable polymer?

a) nylon6 b) nylon 6, 6 **c) nylon2-nylon6** d) viscose rayon

v) Chemical combination of Ziegler-Natta catalyst is-----

a) trimethyl aluminium titanium tetrachloride

b) triethyl aluminium titanium tetrachloride

c) triethyl aluminium titanium trichloride

d) triethyl aluminium titanium dichloride

vi) Dacron is a copolymer of ethylene glycol and--------

a) adipic acid b) hexamethylenediamine c) phthalic acid **d) terephthalic acid**

vii) Nylon 6, 6 is a condensation polymer of hexamethylenediamine and-------

a) picric acid **b) adipic acid** c) terephthalic acid d) ϵ caprolactam

Very Short Answer Questions (1-Mark)

i) Write the number of carbon atoms present in the monomer used for preparation of nylon 6 polymer.

ii) Write the name of the catalyst used for preparation of high density polythene polymer.

iii) Write the name of the monomer used for preparation of polyacrylonitrile.

iv) Write the name of a polymer formed by condensation polymerization of monomers ethylene glycol and terephthalic acid.

v) Write name of the monomer of natural rubber.

vi) Write the name of biodegradable polymer formed by two amino acids namely glycine and ϵ-amino caproic acid.

vii) Write the name of the functional group present in terylene polymer.

viii) Write the name of the polymer obtained by polymerization of 2-chloro-1, 3-butadiene.

Short Answer Questions (Type-I) (2-Marks)

i) Define elastomer. Write the name of the raw material used for preparation of nylon 6 polymer.

ii) Write chemical reactions for the preparation of following polymers a) Teflon b) polyacrylonitrile

iii) Define vulcanization .Write the structure of the monomer used in natural rubber.

iv) Explain the term copolymers with examples.

v) Write preparation of low density polythene.Mention two uses of LDP.

vi) Write chemical reactions for preparation of the following. a) Buna-S b) Neoprene.

vii) Explain thermoplastic and thermosetting polymers.

viii) Explain homopolymers with examples.

ix) Write the name of one example of each polymer in which following repeating units.

$(-CF_2-CF_2-)$, $-[-NH-(CH_2)_5-CO-]$, $(-CH_2-CH)-CN$, $(-CH_2-CH_2-)$

Short Answer Questions (Type-II) (3-Marks)

i) Explain classification of polymers on the basis of structures.

ii) Explain copolymers. Write the name and formulae of the monomers used for preparation of Dacron.

iii) Write chemical reactions for the preparation of high density polythene.Write its two uses and two properties.

iv) Write the preparation of nylon 6, 6. Mention two properties and two uses of nylon 6,6 polymer.

v) Explain classification of polymers on the basis of origin.

vi) Define fibres.Explain vulcanization of rubber.

vii) Explain free radical mechanisms in detail for the preparation of addition polymers.

Long Answer Questions (4-Marks)

i) Define rubber. Write the chemical reactions for the preparation of following polymers.

a) teflon b) polyisoprene c) polyacrylonitrile d) SBR

ii) Explain the reactions involved in the preparation of viscose rayon.

Chapter-16

Green Chemistry and Nanochemistry Marks 3 with option 4

Multiple choice questions (1 Mark)

i) Bottom ash of thermal power stations can be used as raw material for cement and brick industry. This example illustrates which of the following principle of green chemistry

a) Atom economy.
b) Designing safer chemicals.
c) Design for energy efficiency.
d) Prevention of waste or by products.

ii) Less hazardous chemical synthesis point of view instead of harmful DDT Now a days ---------- is used as insecticides

a) Benzene
b) BHC
c) Chlorobenzene
d) Ethanol

iii) The concept that aims to maximize efficiency and minimize hazardous effect on human health and environment was coined by Paul T.Anastas

a) Green revolution
b) Blue revolution
c) Nano chemistry
d) Green Chemistry

iv) Nanorods are the example of ---------

a) One dimensional nanostructure
b) Two Dimensional nanostructure
c) Three dimensional nanostructure
d) Zero dimensional nanostructure

v) Which nanoparticles act as highly effective bacterial disinfectants, removing E.Coli from water?

a) Gold nanoparticles
b) Silver nanoparticles