



Blue Print (As per PU Board)

Topic	1 mark questions	2 marks questions	3 marks questions	5 marks questions	Total Marks
Polymers	-	-	-	1	5

One mark questions

- Identify the linear polymer among the following Glycogen, Cellulose, Bakelite, Melmac.
Answer: Cellulose
- Give an example of a cross - linked polymer
Answer: Bakelite
- What is the main constituent of bubble gum?
Answer: Styrene butadiene co-polymer (SBR)
- Name a synthetic polymer which is an ester.
Answer: Terylene or Dacron.

Two marks questions

- Give any two differences between thermoplastic polymers and thermosetting polymers.
Answer:

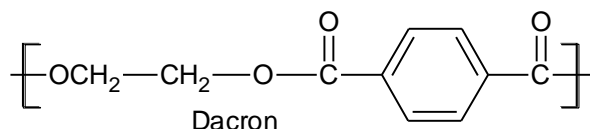
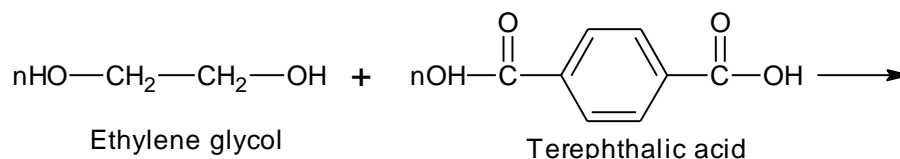
Thermoplastic Polymers	Thermosetting Polymers
(1) Softens on heating and hardens on cooling and can be reused.	(1) On heating, it undergoes extensive cross linking and becomes infusible. Hence cannot be reused.
(2) They are addition polymers	(2) They are condensation polymers.

(1 mark)

- How is Dacron obtained from ethylene glycol and terephthalic acid?

(1 mark)

Answer: Dacron is obtained by condensation polymerization of ethylene glycol and terephthalic acid.
(1 mark)



(1 mark)

- Distinguish between homopolymers and copolymers.

Answer: **Homopolymers:** Addition polymers formed by the polymerisation of a single monomeric species are known as homopolymers.

Eg: Polythene, PVC, Teflon etc.

Co-polymers: Addition polymers from two different types of monomeric units are called as co-polymers.

Eg: Bakelite, Buna-S, Nylon 6, 6 etc.

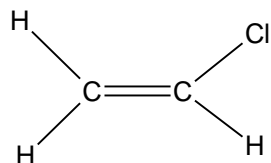
- Draw the structure of monomer of

(i) PVC

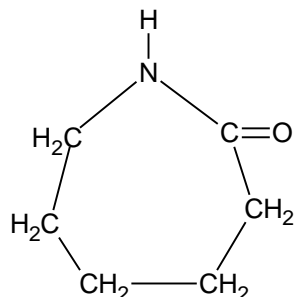
(ii) Nylon -6

Answer: (i) Monomer of PVC is Vinyl chloride

Structure:



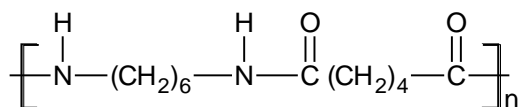
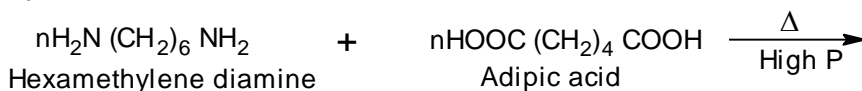
(ii) Monomer of Nylon - 6 is Caprolactam
Structure:



Five marks questions

9. (a) What is condensation polymerization? Give an example with an equation.
 (b) With respect to natural rubber
 (i) Name its monomer
 (ii) Name the element used for vulcanization

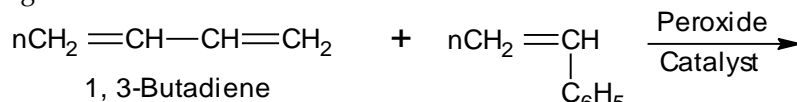
Answer: (a) It is the type of polymerisation which involves repeated condensation reaction between 2 different bifunctional monomeric units. (1 mark)
 Eg: Nylon - 6, 6 (1 mark)



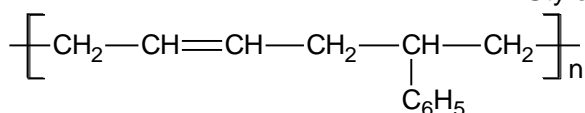
Nylon - 6, 6

- (b) (i) Isoprene or 2-methyl buta-1, 3-diene (1 mark)
 (ii) Sulphur (1 mark)
10. (a) What is copolymerization? Give an example with equation.
 (b) Give an example for a (i) Polyester fibre
 (ii) Thermosetting polymer

Answer: (a) It is a polymerization reaction in which a mixture of more than one type of monomer is polymerised to form a copolymer. (1 mark)
 Eg: Formation of Buna - S - (1 mark)



Styrene



Buna - S Copolymer

- (b) (i) Terylene or Dacron (1 mark)
 (ii) Bakelite or Urea - formaldehyde resin (1 mark)



11. (a) Mention the monomers present in the following polymers

(i) Polythene

(ii) Neoprene

(iii) Nylon-6

(b) Give an example each for

(i) Thermoplastic polymer

(ii) Thermosetting polymer

Answer: (a) (i) Ethene or ethylene

(1 mark)

(ii) Chloroprene (2-chlorobuta-1, 3-diene)

(1 mark)

(iii) Adipic acid and hexamethylene diamine

(1 mark)

(b) (i) Polythene (any other suitable example)

(1 mark)

(ii) Bakelite or urea formaldehyde resin

(1 mark)

12. (a) (i) What is Homopolymer? Give an example.

(ii) Name the polymer formed by monomers 1, 3-Butadiene and Acrylonitrile.

(b) What is condensation polymerisation? Give an example.

(2+1+2 marks)

Answer: (a) (i) Addition polymers formed by the polymerisation of a single monomeric species.

Eg: Polythene

(ii) Buna - N

(b) Condensation polymers are formed by the series of condensation reactions between 2 bifunctional monomers or 2 trifunctional monomers.

Eg: Nylon - 6, 6 or Bakelite or Polyester.