**(CO-IV)** **Polymer Chemistry and Composite Materials**

**Polymer Chemistry (Unit-III)**

**Part – A**

1.What do you understand by functionality of the monomer? Explain with examples.

**2**.**What are the basic requirements of a monomer(s) to take part in Addition polymerization and Condensation polymerization?**

3.What is graft co-polymer?

4.Bakelite is hard and brittle. Explain.

5.Can methane (CH4) undergo polymerization? Explain why?

6.What are natural and synthetic polymers? Give two examples for each .

7.Define Homo, Hetero and Co-polymers with examples.

8.Differentiate between homo polymers and copolymers with suitable examples.

9.Why raw rubber needs vulcanization?

10.Write the name and chemical structure of monomer of natural rubber.

11.How will you distinguish between homochain and hetrochain polymers?

**13.Differentiate between Addition and Condensation polymerization.**

14.What are the advantageous properties of polymers over metals.

15.What is plasticity and elasticity?

16.What are conducting polymers? Why do they conduct electricity.

17.Write any three important properties of conducting polymers.

18.What are resins?

19.What is the general name of synthetic polymers containing R2SiO as repeating units?

20.Why is Bakelite used in electrical appliances?

21.PVC is soft and flexible, whereas Bakelite is hard and brittle. Why?

22.Why is Kevlar much less flexible than nylons?

23.What is the repeating unit for natural rubber? Give its molecular structure and name.

**PART B**

24.Explain Addition, Condensation polymerization reactions with examples.

25.Give the important properties of Plastics, Fibers and Elastomers, with examples.

**26.Differentiate between thermoplastics and thermosetting resins.**

27.Write the formulae of monomers from which the following polymers are formed:

Bakelite b) kevlar c) butyl rubber d) Buna S

(Molecular Structure required)

28.Differentiate between Addition and Condensation Polymerization with examples.

29.Short notes on plasticised and unplasticised PVC.

30. Write the properties and applications of Bakelite

31.What are the drawbacks of natural rubber?

32.Give equations for preparation, properties and uses of (i) Buna S, (ii) Butyl rubber

**33.Write the preparation, properties and uses of Nylon6, 6 and Kevlar.**

34.Differentiate between elastomer and plastic.

**35.Write the preparation,properties and applications of any one of the Bio-degradable polymer that you have studied .**

36.What are intrinsic conducting polymers. Give examples.

37.What is the mechanism of conduction in polymers.

**38.Write the structure of polyacetylene.What are their important applications?**

39.Classify the following polymers on the basis of action of heat on them: Bakelite, nylon, polyethelene, nylon, polystyrene, urea formaldehyde and kevlar

**Composite Materials(Unit-V)**

1 What are composite materials? What are their advantages? Give examples.

2. Write a note on fibre reinforced composites.

3. Describe the constituents of composite materials