Unit III

6. Describe the following :

   (a) Tacticity in polymers. **5**

   (b) Crystallization and melting. **5**

   (c) Strain-induced morphology. **6**

7. (a) What is crystalline melting point ? Describe the effect of chain flexibility and other steric factors on it. **8**

   (b) Describe the glass transition temperature and the relationship between (T_m and $T_{g)}$. **8**

Unit IV

8. (a) Describe the use of polymeric support as catalyst and drug carrier. **8**

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M. Sc. Chemistry EXAMINATION, 2026

(Fourth Semester)

(Re-appear Only)

POLYMER CHEMISTRY (2020-21 Onwards)

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) What do you mean by degree of polymerization ?

(b) Define Polydispersity.

(c) What is glass transition temperature (T_g) ?

(d) What is melting point ?

(e) Define elastomers with example.

(f) What do you mean by surface resistivity ?

(g) Give any *two* biomedical applications of polymers.

(h) What is practical significance of molecular weight ? **8×2=16**

Unit I

2. (a) What is chain polymerization ? Compare the mechanism of radical and cationic polymerization. **10**

(b) Explain Alfrey price scheme. **6**

3. (a) Explain the concept of copolymerization. Describe the copolymer equation. **8**

(b) Describe the mathematical polymerization. **8**

Unit II

4. (a) Describe the viscosity method for measuring the average molecular weight of polymer. **10**

(b) Describe the application of XRD in the analysis of polymer. **6**

5. (a) Explain the osmotic method for measurement of molecular weight of polymer. **8**

(b) Describe the polydispersity and molecular weight distribution. **8**

(b) Explain the commercial applications of polyamides and silicon polymers. **8**

9. (a) Discuss the biomedical applications of polymers. **8**

(b) Discuss about the preparation, properties and applications of polystyrene and polyvinyl chloride. **8**

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(b) Explain the commercial applications of polyamides and silicon polymers. **8**

9. (a) Discuss the biomedical applications of polymers. **8**

(b) Discuss about the preparation, properties and applications of polystyrene and polyvinyl chloride. **8**

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