

B.Tech. Fourth Semester (Polymer (Plastic) Technology) (CGS)
11105 : Polymer Chemistry : 4 PP 02

P. Pages : 2

Time : Three Hours



AU - 2627

Max. Marks : 80

- Notes :
1. Answer **three** question from section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Diagrams and Chemicals equations should be given wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Discuss the reaction, mechanism wherever necessary.
 6. Cell phone is not allowed
 7. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

- | | | | |
|----|----|--|---|
| 1. | a) | Discuss chemistry, mechanism, properties and manufacturing process of aromatic polyamides. | 8 |
| | b) | Explain the manufacturing process, chemistry and properties of aromatics sulfides. | 6 |

OR

- | | | | |
|----|--|-------------------|-------------------------|
| 2. | Discuss the chemistry and properties of following step polymers:- | | 14 |
| | i) | Aromatic Sulfones | ii) Aromatic Polyethers |
| 3. | Discuss in detail the chemistry and mechanism of radical chain polymerization. | | 13 |

OR

- | | | | |
|----|----|--|---|
| 4. | a) | Compare radical polymerization with step polymerization. | 7 |
| | b) | How would you determine initiator efficiency experimentally? | 6 |
| 5. | a) | Distinguish between cationic polymerization and anionic chain polymerization. | 6 |
| | b) | What are the different initiation systems of cationic polymerization? Explain the initiation of protonic acid. | 7 |

OR

- | | | | |
|----|--|--|----|
| 6. | What are the various modes of termination in anionic chain polymerization? Discuss in detail termination by added transfer agents. | | 13 |
|----|--|--|----|

SECTION - B

- | | | | |
|----|----|---|---|
| 7. | a) | Discuss correlation between monomer reactivity ratio and copolymer structure. | 7 |
| | b) | Discuss the chemistry of block and graft copolymer. | 7 |

OR

8. a) What do you mean by monomer reactivity ratio? State its significance. How would you determine monomer reactivity ratio? 7
- b) Explain the chemistry of random and alternate copolymer. 7
9. a) Discuss the stereo-chemistry of polymerization of monosubstituted and disubstituted ethylene's. 7
- b) Discuss the components of Ziegler-Natta Catalyst. 6

OR

10. a) Discuss the effect of components on Ziegler-Natta Initiator system. 7
- b) How would you classify polymer on the basis of tacticity? State its example. 6
11. Discuss in detail the chemistry of epoxy resin. State the various types of curing systems used in epoxy resin. 13

OR

12. Discuss in detail the chemistry of following thermosetting resins. 13
- i) Phenolics ii) Amino Resins

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