B.Tech. Fifth Semester (Che. Tech. (Poly) (Plas.) Tech.) (CGS)

11117 : Engineering Plastics & Speciality Polymers : 5 PP 03

P. Pages : 2 | AW - 3152

Time : Three Hours | Max. Marks : 80

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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 chemical 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 Use of cell phone is strictly prohibited during examination.
7. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) How will you classify liquid crystalline polymers? Explain characteristics of liquid crystalline polymers. **7**

b) Define the term rheology. Discuss rheology of liquid crystalline polymers. **6**

OR

2. a) Discuss the concept of liquid crystalline phase. **7**

b) Explain the synthesis of liquid crystalline polymers. **6**

3. a) How would you classify conducting polymers? Name any three conducting polymers. **6**

b) What is selection criteria of polymer to work as conductor? Explain applications of conducting polymers. **7**

OR

4. Discuss in detail intrinsic and extrinsic types of conducting polymers. **13**

5. a) What are the various requirements for heat resistant polymers? Explain important applications of heat resistant polymers. **7**

b) How would you determine heat distortion or deflection temperature under standard load of polyamide type polymer? Discuss test procedure of it. **7**

OR

6. Explain in detail the synthesis, properties and applications of heat resistant engineering plastic blends. **14**

SECTION – B

7. a) Discuss the significance of photosensitive polymers. Name any two photosensitive polymer. **7**

b) Discuss the synthesis and curing reaction of any one photosensitive polymer. **6**

OR

8. a) Discuss in brief the preparation and properties of any one water soluble polymer. **7**

b) What are the different types of polymeric membrane? Explain important applications of polymer membrane. **6**

9. a) Discuss in detail the mechanism of biodegradation of biopolymers. **7**

b) Explain testing procedures used for biodegradable polymers. **7**

OR

10. a) Discuss the synthesis of any one synthetic biopolymer. Compare synthetic biopolymer with natural biopolymer. **7**

b) Why the need of biomaterials and biopolymers? Explain it with suitable applications. **7**

11. a) Discuss polymers for ion exchange resins. **6**

b) What do you mean by light emitting polymers? State the properties and uses of light emitting polymers. **7**

OR

12. Explain the applications of speciality polymers in following areas:- **13**
i) Agricultural applications
ii) Aerospace applications

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