

AU - 2711

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

POLYMER SCIENCE AND TECHNOLOGY

Paper - 5 FEPP 05

(USC - 11113)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) Answer **Three** questions from Section A and **Three** questions from Section B.
(2) Due credit will be given to neatness and adequate dimensions.
(3) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION A

1. (A) Define polymers. Classify the polymers on the basis of structure, repeating units. 6
- (B) Derive the generalisation equation used for Number Average concept and weight average concept. 8

OR

2. (A) Explain the mechanism of addition polymerisation. 6
- (B) Explain in detail :
 - (i) Emulsion polymerisation
 - (ii) Ionic polymerisation. 8
3. (A) Explain in brief the polymerisation process, structure, properties and application of low density (Branched) polyethylene. 8
- (B) Explain the properties of Vinyl halides. 5

OR

4. (A) Explain in detail the monomer, polymerization structure and properties of polystyrene material. 8

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- (B) Explain the limitations of polystyrene. Explain the process of copolymerisation to overcome the limitation. 5

5. (A) Explain various zones used in injection molding process. State the significance of L/D ratio in screw design for injection molding process. 6
(B) Explain with the help of neat sketch compression molding process. 7

OR

6. (A) Explain with the help of neat sketch. Injection molding process. 7
(B) Explain with the help of neat sketch Transfer moulding process. 6

SECTION B

7. (A) Differentiate between injection moulding and Extrusion moulding process. 6
(B) Explain with the help of neat sketch extrusion blow moulding process. 8

OR

8. (A) Explain stepwise process with neat sketch for Thermoforming polymer process. 7
(B) Explain the process of Blow moulding with neat sketch. 7
9. (A) Explain the process of photodegradation. 6
(B) Explain the degradation by high-energy radiation. 7

OR

10. Explain in detail :
(i) Thermal Degradation
(ii) Mechanical Degradation
(iii) Bio-Degradation. 13

11. (A) Explain the application of polymers in seed coating, mulch films. 6
(B) Explain the application of polymers in cosmetics. 7

OR

12. (A) Explain the application of polymers in communication. 6
(B) Explain the polymers used in the composite manufacturing used in aerospace, automotive applications. 7



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