

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – NOVEMBER 2009

CH 5402 / 5400 – POLYMER CHEMISTRY

Date & Time: 12/11/2009 / 9:00 - 12:00 Dept. No.

Max. : 100 Marks

PART – A

Answer ALL questions

(10×2=20)

1. What are elastomers? Give an example.
2. Identify the copolymers and homopolymers from the following
a) SAN b) PVC
3. Why is chain polymerization also called vinyl polymerization?
4. What is coupling termination?
5. Why is polyethylene thermally more stable than polyisobutylene?
6. Mention the causes of chain end degradation.
7. What are the disadvantages of bulk polymerization?
8. How is isoprene synthesized?
9. How is reinforced plastic obtained from polyester?
10. What is the role of feed zone in extrusion moulding?

PART – B

Answer any EIGHT only

(8×5=40)

11. How will you arrive at the weight average molecular weight of a polymer?
12. How are polymers classified on the basis of their ultimate form and applications?
13. Mention the various uses of inhibitors with examples.
14. What is polyaddition polymerization? Give an example.

15. What is bead polymerization? Mention its advantages.
16. Explain the role of photostabiliser in photo degradation of polymers.
17. Distinguish between LDPE and HDPE.
18. What are plastisols and organosols? Mention their advantages.
19. How is Terylene prepared? Account for its high melting point.
20. Explain the preparation of reinforced plastics by spray-up technique.
21. Write a note on blow moulding process.
22. Mention briefly the importance of i) calendering ii) die casting

PART – C

Answer any FOUR only

(4×10=40)

23. a) Distinguish between step growth and chain growth polymerizations. (5) b) How are synthetic polymers classified? Give examples. (5)
24. Explain in detail the mechanisms of cationic and anionic polymerizations.
25. Explain i) interfacial condensation ii) Gas phase polymerization. (5+5)
26. a) How is polystyrene prepared? How are its drawbacks removed? (6) b) What causes discoloration of PVC polymer? How will you prevent it? (4)
27. a) Write a note on fibre forming polymers. (5) b) How are thermosetting materials produced by compression moulding? (5)
28. Explain the mechanisms of conduction shown by polyacetylene and polyphenylene polymers.
