Reg. No. : | | | | | | | | | | | |

T 3486

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

Second Semester

(Regulation 2004)

Textile Technology

TT 1151 — POLYMER SCIENCE

(Common to Textile Technology (Textile Chemistry))

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define functionality of a monomer.

2. Explain degree of polymerization.

3. Define reactivity ratio.

4. What is a living polymer? Give an example.

5. Define polydispersity of a polymer.

6. Explain relative and reduced viscosities.

7. What are super absorbing polymers? Give an example.

8. Write a note on polyurethane.

9. What are the reasons for the crystal defects?

10. Name any two flame retardants used in plastic production.

PART B — (5 x 16 = 80 marks)

11. (a) Classify polymers based on source and applications. (16)

Or

(b) Explain the source and preparation of the various raw materials of polymers. (16)

12. (a) Compare and contrast Bulk, solution, emulsion and suspension polymerization. (16)

Or

(b) Explain the following with suitable example.

(i) Ziegler Natta polymerization. (8)

(ii) Addition polymerization. (8)

13. (a) How do you determine the molecular weight of a polymer by light scattering method? (16)

Or

(b) Explain the principle and working of differential scanning calorimetry and its application in polymers. (16)

14. Explain the synthesis and properties of

(a) (i) polyethylene. (4)

(ii) Polystyrene. (4)

(iii) Conducting polymer. (8)

Or

(b) (i) Poly propylene. (4)

(ii) Poly carbonate. (4)

(iii) Carbon fibre. (8)

15. Write a short note on

(a) Polymer processing additives. (16)

Or

(b) Coating of polymers. (16)