

FIFTH SEMESTER DIPLOMA EXAMINATION IN POLYMER
TECHNOLOGY — MARCH, 2015

PLASTIC TECHNOLOGY

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Define Tg. What is the ratio Tg/Tm for Polymers ?
2. State the function of fillers in Plastic moulding.
3. What is Ziegler Natta catalyst ?
4. Define Polyester.
5. How PF resin is formed ?

(5×2=10)

PART—B

(Maximum marks : 30)

II Answer any five of the following questions. Each question carries 6 marks.

1. Explain a method to determine Tg.
2. Classify plastics according to their temperature response and origin.
3. Define commodity plastics. What are the different types of commodity plastics ?
4. Expand LLDPE, HDPE, XLDPE, PMMA, HIPS and ABS.
5. What are the different types of Nylon ?
6. Write a short note on liquid crystal polyester.
7. Mention any two applications of PF, UF and MF.

(5×6=30)

PART—C

(Maximum marks : 60)

(Answer one full question from each unit. Each full question carries 15 marks.)

UNIT—I

III Explain the history, importance of plastics in modern life and advantages over other conventional materials.

15

OR

IV Explain plastic compounding and additives. 15

UNIT—II

V (a) Explain the polymerization of polyethylene by pressure polymerization. 7

(b) Explain the industrial production of PVC and its applications. 8

OR

VI (a) Explain the industrial production of PMMA. 7

(b) Explain the manufacture of HIPS and its two applications. 8

UNIT—III

VII (a) Distinguish Nylon 6 and Nylon 6, 6 based on structure and mention the monomers. 8

(b) Explain the industrial production and application of PET. 7

OR

VIII (a) Explain the manufacture of Nylon 6, 6. 7

(b) Distinguish between thermoplastics and thermosets. 8

UNIT—IV

IX (a) Explain the manufacture of UF resin. 7

(b) Explain the polymerisation of PF resin. 8

OR

X (a) Explain the polymerization of Epoxy resin. 8

(b) Explain the manufacture of MF. 7