

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, OCTOBER/NOVEMBER – 2018**

POLYMER TECHNOLOGY

[Maximum Marks: 100]

[Time: 3 Hours]

PART-A

[Maximum Marks: 10]

(Answer *all* questions in one or two sentences. Each question carries 2 marks)

- I. 1. Define adhesive.
2. Define poly dispersity index.
3. Draw schematic representation of Block co-polymer.
4. What are the use of urea formaldehyde.
5. Define biopolymer. (5x 2 = 10)

PART-B

[Maximum Marks: 30]

(Answer any *Five* of the following questions. Each question carries 6 marks)

- II. 1. Explain dissolution of polymers.
2. Describe bulk polymerization.
3. Explain film casting.
4. Explain the manufacture of epoxies.
5. Explain the role of additives in polymer processing.
6. Explain melt spinning used for fiber manufacture.
7. Explain the raw materials, reactions and condition in nylon manufacturing. (5x 6 = 30)

PART-C

[Maximum Marks: 60]

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

MODULE -I

- III. 1. Explain melting point test for polymer analysis (6)
2. Explain the 'Weight average molecular weight method' for the molecular weight calculation of polymers. (9)

OR

- IV. 1. Describe general rules for polymer solubility. (6)
2. Explain the manufacture of caprolactum. (9)

MODULE -II

- V. 1. Explain free radical addition polymerization. (8)
2. Describe solution polymerization and its advantages and disadvantages. (7)

OR

- VI. 1. Explain anionic polymerization. (8)
2. Explain injection molding process. (7)

MODULE -III

- VII. 1. Explain the method of Hand Lay-up method for the production of reinforced plastics (8)
2. Explain the manufacture of melamine formaldehyde with a neat sketch (7)

OR

- VIII. 1. Explain the manufacture of poly vinyl chloride with a neat sketch (9)
2. Explain the manufacture of poly styrene. (6)

MODULE -IV

- IX. 1. Explain wet spinning used for fiber manufacture (7)
2. Draw a neat flow diagram for the manufacture of nylon 6 (8)

OR

- X. 1. Explain the manufacture of polyhydroxy alkanotes. (8)
2. Explain the electro dynamic method of waste plastic separation. (7)