

**III B.Tech II Semester Supplementary Examinations,
November/December 2005
POLYMER ENGINEERING
(Chemical Engineering)**

Time: 3 hours**Max Marks: 80**

**Answer any FIVE Questions
All Questions carry equal marks**

1. Give note on the following as sources of natural polymers-rubber and proteins.[16]
2. Describe the properties and applications of polyethylene terephthalate (PET) polymer. [16]
3. (a) State the applications of Urea-Formaldehyde products. How they compete with phenol-Formaldehyde products in applications.
(b) Explain curing mechanism in Urea-Formaldehyde. [10+6]
4. How is Polyacrylonitrile prepared ? What are its important properties and applications.S [16]
5. (a) Basing on the chemical structure, describe cis, trans, isotactic, atactic and syndiotactic polymers.
(b) What is the effect of chemical structure on the properties of polymers? [8+8]
6. (a) Explain the curing process of aminoplastics.
(b) Describe the applications of epoxy products. [8+8]
7. (a) Fill in the blanks:
 - i. In injection moulding technique the curing is done by _____
 - ii. Thermoplastic resins are moulding by _____ technique
 - iii. Transfer moulding is used for _____ materials
 - iv. In Extrusion moulding technique the molten plastic materials Are pushed by means of _____ . [4x1=4]

(b) State whether the following statements are true or false

 - i. Insulated electric cables are produced by extrusion moulding technique
 - ii. In injection moulding technique the device used for uniform heat distribution is 'torpedo'
 - iii. In transfer moulding technique the plastic material is injected into the mould in the form of solid
 - iv. In the compression moulding the moulding piece can be removed while it is hot [4x1=4]

(c) i. Why it is feasible to produce multilayered films or sheet by coextrusion[4]

- ii. How transfer moulding technique is applicable for moulding thermosetting plastics ? Explain with a diagram [4]
8. What do you mean by extrusion? Explain with sketch the working of bottom fed and side fed blown film dies. [16]

★ ★ ★ ★ ★