

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2017****Subject Code:132302****Date:14/11/2017****Subject Name: Manufacturing of Plastic Materials- 1****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

**Q.1** (a) Define: (a) Linear polymer (b) Branched polymer (c) Cross linked polymer (d) CMC (e) Initiator (f) Polymerisation (g) Monomer. **07**

(b) Explain Bulk and Solution polymerization techniques. **07**

**Q.2** (a) Write a note on: Naptha Cracking. **07**

(b) Define Polymer. Give difference between thermoplastic and thermoset. **07**

**OR**

(b) Discuss homopolymer and copolymer with suitable examples. **07**

**Q.3** (a) What are stereo regular polymers? Explain different types of optical isomeric structures in the polymer molecule. **07**

(b) Explain production method of acrylonitrile monomer with neat flow diagram. **07**

**OR**

**Q.3** (a) Give manufacturing and properties of phenol formaldehyde resin (Novalacs). **07**

(b) List various polymers prepared from suspension and emulsion technique. Give difference between suspension and emulsion polymerization techniques. **07**

**Q.4** (a) Explain manufacturing process of melamine formaldehyde (MF). **07**

(b) List various methods of production of vinyl chloride monomer. Explain any one process with neat flow diagram. **07**

**OR**

**Q.4** (a) Explain the manufacturing process of unsaturated polyester resin. **07**

(b) Give properties and applications of PF, MF and UF. **07**

**Q.5** (a) Which materials are used to prepare epoxy? Explain the manufacturing process of epoxy resin. **07**

(b) Explain manufacturing process of Urea formaldehyde (UF). **07**





- Q.5**    **(a)**    Which raw materials are used to prepare polyurathenes? Give Manufacturing and applications of thermoset polyurathenes.    **07**
- (b)**    Draw the plant layout of any plastic material manufacturing industry.    **07**

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