

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER • 2014****Subject Code: 132301****Date: 04-06-2014****Subject Name: Introduction to Plastic Material Science****Time: 02.30 pm - 05.00 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) Give the classification of Polymer and Explain it in detail. **07**
(b) Compare: Thermoplastics with Thermosets. **07**
- Q.2** (a) Explain Bulk Polymerization Techniques in detail. **07**
(b) Explain Addition and condensation Polymerization with example. **07**
- OR**
- (b) Compare: Low molecular weight compound with High molecular weight (Polymeric) compound. **07**
- Q.3** (a) Explain Free radical Polymerization reaction in detail. **07**
(b) Explain Gas phase Polymerization. **07**
- OR**
- Q.3** (a) Explain about Tacticity with example. **07**
(b) Explain Glassy state and Glass transition temperature (T_g) & Viscous Flow and Viscoelasticity. **07**
- Q.4** (a) Explain States of Aggregation for Polymeric compound. **07**
(b) Explain Specific Volume V/S Temperature for Polymer. **07**
- OR**
- Q.4** (a) Give difference between amorphous & crystalline polymers. **07**
(b) Explain Polydispersity & Molecular weight distribution in polymers. **07**
- Q.5** (a) Explain the pattern of folding of chain occurs during crystallization. Explain the effect of crystallinity on properties of Polymer. **07**
(b) Explain with suitable examples Hydrolysis and Acidolysis of polymers. **07**
- OR**
- Q.5** (a) Explain cationic polymerization with suitable example. **07**
(b) Explain about Initiator and Chain transfer agent in detail. **07**
