

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – WINTER • 2014****Subject Code: 132301****Date: 01-01-2015****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)** Explain about Bulk polymerization in detail. **07**
(b) Explain classification of polymer in detail. **07**
- Q.2 (a)** Define initiators and inhibitors. Explain role of initiators and inhibitors in polymerization in detail. **07**
(b) Explain condensation polymerization with example. **07**
- OR**
- (b)** Explain hydrolysis reaction and hydrogenation reactions in details. **07**
- Q.3 (a)** List the basic steps in free radical polymerization .Explain them in detail. **07**
(b) Discuss ring opening polymerization. **07**
- OR**
- Q.3 (a)** Compare: Thermoplastic with Thermoset **07**
(b) Compare: Suspension Polymerization with Emulsion Polymerization. **07**
- Q.4 (a)** Explain about functionality of Monomer and its effect on Polymer structure. **07**
(b) Explain about Gas – Phase polymerization. **07**
- OR**
- Q.4 (a)** Explain: Polydispersity and Molecular Weight Distribution in Polymers. **07**
(b) Explain about Addition Polymerization with example. **07**
- Q.5 (a)** Define Glass Transition Temperature. Explain about Viscous Flow and Visco elasticity. **07**
(b) Explain (1) Hydrolysis (2) Aminolysis **07**
- OR**
- Q.5 (a)** Explain about Amorphous polymer in detail. **07**
(b) Define Molecular Weight of Polymer. Explain Number Average Molecular Weight Concept. **07**
