

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VI Regular Examination May 2011****Subject code: 162304****Subject Name: Reaction Engineering & Rheology****Date: 21-05-2011****Time: 10.30 am – 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) With neat sketch explain Batch reactor. **07**
(b) What is Rheology? Explain polymer Rheology. **07**

Q.2 (a) Explain Stirred tank reactor in detail. **07**
(b) Define Boltzman principle. Explain it in detail **07**

OR

(b) With neat sketch Explain capillary rheometers. **07**

Q.3 (a) Explain The Maxwell model for a viscoelastic material. **07**
(b) Explain polymer melt flow Injection Molding Cycle. **07**

OR

Q.3 (a) Explain dynamic mechanical properties. **07**
(b) Explain Viscosity of polymer melts as shear thinning and shear thickening. **07**

Q.4 (a) Explain Tubular reactor **07**
(b) Explain Fluidized bed Reactor **07**

OR

Q.4 (a) What is mechanical deformation? Provide Types of mechanical deformation? **07**
(b) Explain cone and plate viscometer **07**

Q.5 (a) Explain melt flow index **07**
(b) Explain birefringence Method **07**

OR

Q.5 (a) Explain cone and plate viscometer in detail. **07**
(b) Explain Torque rheometers in detail. **07**
