

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 162605****Date: 19/05/2012****Subject Name: Thermoplastic Elastomers and Polymer Blends****Time: 10:30 am – 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. All notations used have conventional meaning.
3. Draw the figure wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) List the advantages of Thermoplastic elastomers over conventional elastomers. **04**
(b) List the commercial grades of polyolefin thermoplastic elastomers. Write a short note on any one. **05**
(c) Discuss on thermal and chemical properties of polyolefin thermoplastic elastomer. **05**
- Q.2** (a) Explain the structure and composition of block polymers. **07**
(b) Discuss on compounding ingredients for formulating block polymers. **07**
- OR**
- (b) Write a note on SBS, SIS and SEBS block copolymers. **07**
- Q.3** (a) Discuss the chemistry of Polyester thermoplastic elastomers. **07**
(b) Explain any seven characteristics of Thermoplastic polyurethane elastomers. **07**
- OR**
- Q.3** (a) Discuss product applications of Hytrel polyesters. **07**
(b) Write the three basic ways by which the main characteristics of thermoplastic polyurethane elastomers can be varied. **03**
(c) Write any four general design considerations for molding TPU. **04**
- Q.4** (a) Discuss Ethylene vinyl acetate copolymers. **07**
(b) Write a note on Specific applications: adhesives of Styrenic TPEs. **07**
- OR**
- Q.4** (a) Explain any two Polysiloxane based thermoplastic elastomers. **07**
(b) Discuss on testing of Thermoplastic elastomers. **07**
- Q.5** (a) Write a short note on NBR- PVC blends. **07**
(b) Explain the preparation of elastomer plastic blends by dynamic vulcanization. **07**
- OR**
- Q.5** (a) Discuss on blends of natural rubber with polyethylene and polypropylene. **07**
(b) Write the technological applications of dynamically vulcanized elastomer-thermoplastic blends. **07**
