

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. Sem-VI Examination May 2011****Subject code: 162605****Subject Name: Thermoplastics Elastomers & Polymer Blends****Date: 23/05/2011****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)** 'The largest application area for the Polyolefin thermoplastic elastomers is in the Automotive Market.' Justify in detail (07)
- (b)** Short note on Graft Copolymer of EPDM. (07)

- Q.2 (a)** Explain in detail about structure & monomer ratio of Block Polymers with examples & write the effects of these on properties. (07)
- (b)** Discuss in detail about the Additives & synthesis for Thermoplastic Polyurethane. (TPU). (07)

**OR**

- (b)** Describe in detail about the Chemistry of Thermoplastic Polyurethane (TPU). (07)

- Q.3 (a)** Write the physical properties, processing & applications of Ethylene-Vinyl Acetate copolymers (EVA). (07)
- (b)** Discuss in detail about Structure-property relationship of NBR/PVC Blends. (07)

**OR**

- Q.3 (a)** Short note on Carboxylate Ionomers. (07)
- (b)** Write in detail about blends of Polyesters with PVC. (07)

- Q.4 (a)** List the typical factors to determine in evaluation requirements of a TPE & also write sequence for developing a TPE compound for a specific application. (07)

- (b)** Discuss the effect of curatives, plasticisers & elastomer characteristics on NBR-Nylon thermoplastic elastomer composition. (07)

**OR**

- Q.4 (a)** Discuss in detail about Blending methods for TPE. (07)
- (b)** Write the importance of Dynamic vulcanization for preparation of Elastomer-Plastic blends. (07)

- Q.5 (a)** Write in detail about the application of thermoplastics elastomers as Adhesives. (07)

- (b)** Discuss about degradation & stabilization of Polyester elastomers. (07)

**OR**

- Q.5 (a)** Write the advantages & processing comparisons of TPEs & Conventional Rubbers. (07)

- (b)** Short note on Polymer blends containing Polyester elastomer. (07)

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