GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER II (NEW) - • EXAMINATION - SUMMER 2016

Subject Code: 2722414 Date: 31/05/2016 **Subject Name: Thermoplastic Elastomers** Time: 10:30 am to 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. List the name of Thermoplastic Elastomers which are produced by grafting reaction. 07 0.1 Write the advantages and disadvantages of thermoplastic Elastomer over conventional 07 **(b)** rubber. Discuss the importance of compounding ingredients in SBS and SIS type TPE. 07 Q.2(a) Explain its effects on properties of TPE. (b) Discuss on thermal and chemical properties of polyolefin thermoplastic elastomer. 07 OR Discuss in detail about chemistry, compounding, properties and application of SEBS 07 block polymers. Explain in detail about the structure & monomer ratio of Block Polymers with 07 0.3 examples & write the effects of these on properties. õConventional rubbers are replaced by TPE in automotive applicationsö justify this 07 statement in detail. OR Q.3 (a) Discuss in detail about the Additives & Chemistry for thermoplastic 07 Polyurethane. (TPU). Discuss in detail about Structure-property relationship of NBR/PVC Blends. 07 0.4 Describe in detail about the Chemistry of polyether based elastomer. 07 Write short note on (i) Block copolymer (ii) Random block polymers (iii) Graft 07 copolymers OR Discuss the blending methods used to prepare a speciallity TPE compound. **Q.4** 07 Describe in detail about the Chemistry, properties and application of polyamide 07 elastomes. Q.5 List the typical factors to determine in evaluation requirements of a TPE & also 07 write sequence for developing a TPE compound for a specific application. (b) Discuss the effect of plasticisers & elastomer characteristics on NBR-Nylon 07 thermoplastic elastomer composition. OR Write the importance of Dynamic vulcanization for preparation of Elastomer-Plastic Q.5 **07** blends. Explain the compounding, manufacturing process and properties of shoe sole 07 (b) products.
