Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2722414 **Date:01/06/ 2015**

Subject Name: Thermoplastic Elastomers

Time: 2:30 PM – 5:00 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 & List out the name of Thermoplastic Elastomers which are produced by grafting reaction.	**07**
	(b)	Explain in detail about structure & monomer ratio of Block Polymers with examples & write the effects of these on properties.	**07**
Q.2	**(a)**	ôThe largest application area for the Polyolefin thermoplastic elastomers is in the Automotive Market.ôJustify in detail	**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)**	Discuss the effect of curatives, plasticisers & elastomer characteristics on NBR-Nylon thermoplastic elastomer composition.	**07**
	(b)	Write short note on Graft Copolymer of EPDM.	**07**
		OR	
Q.3	**(a)**	Describe in detail about the Chemistry of polyether based elastomer.	**07**
	(b)	Write short note on (i) Block copolymer (ii) Random block polymers (iii) Graft copolymers	**07**
Q.4	**(a)**	Write the advantages & processing comparisons of TPEs & Conventional Rubbers.	**07**
	(b)	Discuss in detail about Structure-property relationship of NBR/PVC Blends.	**07**
		OR	
Q.4	**(a)**	Describe in detail about the Chemistry, properties and application of polyamide elastomes.	**07**
	(b)	Discuss about degradation & stabilization of Polyester elastomers.	**07**
Q.5	**(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)	Short note on Polymer blends containing Polyester elastomer.	**07**
		OR	
Q.5	**(a)**	Write the importance of Dynamic vulcanization for preparation of Elastomer-Plastic blends.	**07**
	(b)	Discuss in detail about Blending methods for TPE.	**07**

****