

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016**

**Subject Code: 2162605**

**Date: 26/10/2016**

**Subject Name: Thermoplastics Elastomers & Polymer Blends**

**Time: 02:30 PM to 05:00 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	Answer the following.	(14)
	(i) Define the term: (i) Dynamic Vulcanization, (ii) Hard segment.	
	(ii) Give any two differences between the EEA and EVA copolymers.	
	(iii) Write the future requirements for Thermoplastic Elastomer.	
	(iv) List the name of Thermoplastic Elastomer which is produced by grafting reaction.	
	(v) Give the name of chain extenders useful in TPU Elastomer.	
	(vi) What are the full name of PTMEG and 4-GT?	
	(vii) Write the importance of Diisocyanate in TPU Elastomer.	
Q. 2	(a) List the methods for preparation of Rubber Plastic blends. Explain them in detail.	(07)
Q. 2	(b) Short note on: "Uniroyal TPR polyolefin thermoplastic Elastomer".	(07)
	OR	
Q. 2	(b) 'The largest application area for the Polyolefin thermoplastic elastomer is in the Automotive Market.' Justify the statement.	(07)
Q. 3	(a) Describe in detail about the Chemistry of Thermoplastic Polyurethane (TPU).	(07)
	(b) Discuss in detail about any two Extrusion processing conditions for Polyester thermoplastic elastomer.	(07)
	OR	
Q. 3	(a) Explain about the problems occurred during extrusion process of TPU. State their causes and remedies.	(07)
	(b) Explain in detail about unusual industrial application of polyester TPE.	(07)
Q. 4	(a) Short note on: "NBR- PVC blends".	(07)
	(b) Discuss in detail about chemistry, compounding, properties and application of SEBS block polymers.	(07)
	OR	
Q. 4	(a) Write in detail about blends of Polyesters with PVC.	(07)
	(b) Define the term "Plastomer". Explain the structure and composition of plastomer with their processing methods.	(07)

- Q. 5 (a) List the polysiloxane based TPE. Explain any one in detail. (07)  
(b) Explain in detail about processing, properties and application of EVA. (07)

OR

- Q. 5 (a) Write down the applications and features of Thermoplastic 1, 2- (07)  
Polybutadiene Elastomer.  
(b) List out the testing for Thermoplastic elastomer. Explain any one in (07)  
detail.