Cast Ma.	Englaset No
Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION - WINTER 2015

Sub	Subject Code: 173607 Date:07/12/2015 Subject Name: Product Design Concepts: Structures and Additives		
I im Instr		0:30am to 1:00pm Total Marks: 7	U
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Two polymer compositions were tested for their hardness values on shore A Hardness scale. While one composition showed a value of 25 and other one 50. Suggest suitable application for the materials. Give your reasons.	07
	(b)	What are the different polymer technologies being used for commercial Production. Explain with examples	07
Q.2	(a)	Write in detail about the glass transition temperature of polymers as well as its Significance. How it affects the application of polymer products?	07
	(b)	What are functions of additives in Polymer product design? OR	07
	(b)	Explain in detail the about chemical and physical structure of Polymers.	07
Q.3	(a)	What is vulcanization? Explain in detail about Sulphur and Peroxide Vulcanization.	07
	(b)	Write in detail about classification of Polymers based on commodity and engineering plastics with examples	07
	()	OR .	
Q.3	(a)	Explain the influence of processing parameters on the structure & properties of polymers Write in the stable at the Chain floribility of the polymers	07
	(D)	Write in short about the Chain flexibility of the polymers.	07
Q.4	(a)	Describe in detail about spherulites with proper diagram and the structure of Polymers.	07
	(b)	Write a compounding recipe for Engine Mount Application based on Natural Rubber.	07
		OR	
Q.4	(a) (b)	Write in detail note on compounding recipe based on Neoprene for wiper blade. Explain in detail the process of degradation and also describe the parts due to which degradation occurs.	07 07
Q.5	(a)	Describe in detail the importance of additives in the product design of the polymers.	07
	(b)	Write a compounding recipe for O-ring based on Fluro rubber.	07
		OR	
Q.5	(a)	Write in detail about configuration and conformation of Polymer Structures.	07
	(b)	Describe in detail about kind and role of Plasticizers in Polymer Processing.	07