Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2724006 **Date: 30/05/2015**

Subject Name: Speciallity Elastomers and its Technology

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	Answer the following:		
	(i)	Write the chemistry, synthesis reaction and advantages of Hydrohalogenated Natural Rubber.	(07)
	(ii)	Explain the modification of Unsaturated Synthetic Elastomer by Epoxidation with reaction mechanism.	(07)
Q. 2	(a)	Show the effect of Fiber Orientation on properties of rubber Composite with graphical representation and explain it.	(07)
Q. 2	(b)	Draw the microstructure of Tetrafluroethylene-Propylene Co-polymer (TFE-P Co-Polymer). Write about its compounding, properties and applications.	(07)
		OR	
	(b)	Give the reaction mechanism for Bisphenol-AF vulcanisation of AFLAS 200 Co-polymer and explain it and write its advantage also.	(07)
Q. 3		Write the basic advantages of Carboxylated rubbers. List the vulcanisation methods for Carboxylated rubbers and explain about any one in detail with reaction mechanism.	(14)
		OR	
Q. 3		Discuss in detail about improved Scorch safety and Storage stability of Carboxylic Elastomer.	(14)
Q. 4		Give the basic structure of Acrylic Elastomer. Write about its advantages and compounding technique in detail.	(14)
		OR	
Q. 4		Discuss about various applications of Acrylic Elastomer.	(14)
Q. 5		Give the synthesis reaction of Polyethylene. List the methods for production of Crosslinked Polyethylene (XLPE) and explain about any two by giving reaction mechanism.	(14)
		OR	
Q. 5		Describe the Moisture curing process for Crosslinked Polyethylene (XLPE) compounds with necessary flow diagram.	(14)