Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2724006 **Date: 27/05/2016**

Subject Name: Speciallity Elastomers and its Technology

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.**

Q. 1		Answer the following:	
	(i)	Write about the advantages of Chlorination in Natural Rubber. Write about its chemistry with reaction mechanism.	(07)
	(ii)	Explain the chemical modification of Polybutadiene Rubber by Hydrogenation reaction. Write its advantages also.	(07)
Q. 2	(a)	List the vulcanization techniques for Tetrafluoroethylene- Propylene Copolymer. Explain any one in detail.	(07)
Q. 2	(b)	Why Crosslinked Polyethylene (XLPE) behaves like crosslinked Elastomer? Write about its product forming process by Moisture Cure technique.	(07)
		OR	
	(b)	Discuss about physical properties and Applications of Crosslinked Polyethylene (XLPE).	(07)
Q. 3		List the various types of Basic Monomers used in Synthesis of Acrylic Elastomer and draw their structure. Write about the compounding and processing of Acrylic Elastomer.	(14)
		OR	
Q. 3		Draw the structure of Cure Site Monomers used in manufacturing of Acrylic Elastomer. Write about their Vulcanization characteristics in detail.	(14)
Q. 4		Answer the following:	
	(i)	Write about the effect of Fiber Orientation Angle on properties of rubber composite.	(07)
	(ii)	List the methods for Analysis of Fiber Orientation in rubber composite and explain about any three.	(07)
		OR	
Q. 4		Discuss the effect of Viscosity of Rubber and Coating material on Degree of Dispersion of Fibers in rubber composite with graphical representation.	(14)
Q. 5		What do you mean by Carboxylated Rubber? Give the basic methods for its preparation and explain about any one in detail.	(14)
		OR	
Q. 5		Describe in detail about various Scorch Control methods for Carboxylated Elastomer.	(14)

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