Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-I(New course)• EXAMINATION - WINTER- 2015

Subject Code: 2714002 Da		ode: 2714002 Date: 01/01	ate: 01/01/2016	
Subj	ect N	ame: Mixing of Rubber		
Time: 2:30 pm to 5:00 pm		pm to 5:00 pm Total Mark	Total Marks: 70	
Instru				
		Attempt all questions. Aake suitable assumptions wherever necessary.		
		igures to the right indicate full marks.		
	<i>J</i> . 1	igui es to the right indicate run marks.		
Q. 1	(a)	Discuss in detail about Mastication and Mill Processability in mill.	(07)	
	(b)	Answer the following.		
	(i)	Draw the schematic illustration of mechanisms for incorporating carbon black in to Elastomer.	(04)	
	(ii)	Draw the Schematic Diagram of Compound behavior in Internal Mixer.	(03)	
Q. 2	(a)	Describe the material transformation process in Rubber processing in internal mixer.	(07)	
	(b)	Short note on: "Compaction process".	(07)	
		OR		
	(b)	Discuss about the Optimum state of Elastomers for mixing.	(07)	
Q. 3	(a)	Explain in detail about viscoelastic behaviour of rubber in an Internal mixer.	(07)	
	(b)	List the aspects for the ease of mixing. Explain all in detail.	(07)	
		OR		
Q. 3	(a)	Discuss in detail about mechanism of Fracture of gum rubber.	(07)	
	(b)	Justify the statement "Liquid additives play a unique & decisive role in Mixing of Rubber".	(07)	
Q. 4		Give the name of proposed model outline for Mixing mechanism. Explain it in detail.	(14)	
		OR		
Q. 4	(a)	Describe the model of material behaviour in the Internal mixer with respect to material properties.	(07)	
	(b)	Describe the Chemical reaction during mixing process.	(07)	
Q. 5		Discuss in detail about mixing of rubber without using a mill or Internal mixer.	(14)	
		OR		
Q. 5	(a)	Explain about material behaviour in the screw during Extrusion.	(07)	
	(b)	Describe the causes of non-uniformity in feeding of extrusion mixing.	(07)	
