Seat 1	Vo.: _	Enrolment No	Enrolment No	
GUJARAT TECHNOLOGICAL UNIVERSITY M. E SEMESTER – I • EXAMINATION – WINTER • 2013				
<b>Subject code: 714002 Date: 26-12</b>			2013	
Subject Name: Mixing of Rubbers				
Time: 10.30 am – 01.00 pm Total Ma			s: 70	
Instructions:				
	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.		
Q.1	(a)	Discuss in detail about science of mill processibility of two roll mill and internal mixers.	(07)	
	<b>(b)</b>	Explain about the mastication and unit process of mixing of rubber.	(07)	
Q.2	(a)	"Compaction as a part of the mechanism in incorporating carbon black in to elastomer" justify the statement with suitable example.	(07)	
	<b>(b)</b>	Explain the viscoelastic behavior of Rubber in internal mixer.	(07)	
		OR		
	<b>(b)</b>	Discuss in detail about the mechanism of fracture of gum rubber.	<b>(07)</b>	
Q.3	(a)	Explain in detail about gel determination method for characterization of gum rubber.	(07)	
	<b>(b)</b>	in detail.	(07)	
		OR		
Q.3	(a)	Discuss the relationship between dilute solution properties and processibility.	(07)	
	<b>(b)</b>	Short note on Viscoelastic properties of rubber compounds.	<b>(07)</b>	
Q.4	(a)	Explain the different aspects of mixing of fillers.	(07)	
	<b>(b)</b>	Discuss the different causes of non-uniformity in extruder feeding.	(07)	

OR

Q.4 Discuss the different characteristics which determine the properties (14) that filler will impart to composite.

Q.5 (a) List the requirements and constraints imposed for material testing. (07) Explain the quality control and process control with the help of flow chart.

(b) Explain the material behavior in the extruder screw. (07)

OR

Q.5 (a) List the major deficiencies occurred during milling and internal (14) mixing. How these deficiencies can be overcome? Explain in detail.