Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION - SUMMER 2016
Subject Code: 2162601
Date: 06/05/2016

	•	Couc.2102001 Datc.00/03/2	010
Tin	_	Name: Rubber Compound & Product Testing 0:30 AM to 01:00 PM Total Marks	s: 70
mst	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q. 1	(a) i ii	Answer the following Write on generalized way of classifying the rubber testing. Which properties are tested for rubber compound?	05 02
Q. 1	(b)	Discuss Temperature Retraction test to know effect of low temperature on rubber vulcanizate.	07
Q. 2	(a)	Explain the principle of rubber hardness measurement. Also write a short note on durometers with their advantages.	07
Q. 2	(b) i	Answer the following Explain the given terms with respect to rubber: (i) Volume Resistivity (ii) Surface Resistivity	04
	ii	Write a note on power factor. OR	03
Q. 2	(b) i ii	Answer the following Write down the tracking test Differentiate antistatic rubber and conducting rubber.	05 02
Q. 3	(a)	Write in brief about the types of fatigue test. List the major components of ross-flexing machine with labeled diagram.	07
Q. 3	(b) i ii	Answer the following Write in brief about Tear Test. List the factors which contribute to the deterioration of elastomers.	05 02
Q. 3	(a)	OR Discuss in detail about the types of cracks observed in flex-cracking resistance test conducted on De-MATTIA apparatus.	07
Q. 3	(b) i ii	Answer the following Which different types of test specimens are used to carry out tear test? Write in brief about effect of ozone on rubber.	04 03
			РТО
Q. 4	(a)	Write down the scope of tensile test. Which methods are used to prepare ring type test specimen? Also explain the limitations of ring type test specimen.	07

Q. 4	(b)	Answer the following	
	i	Give the practical significance of stress relaxation test.	03
	ii	Explain the factors influencing the friction of polymer.	04
		OR	
Q. 4	(a)	Discuss in detail about the elongation measurement in case of tensile test.	07
Q. 4	(b)	Answer the following	
	i	How stress relaxation test differs from compression set? How result of stress	04
	ii	relaxation test is expressed? Define the given terms with respect to rubber: (i) Co-efficient of Friction (ii) Adhesive Friction (iii) Hysteresis Friction	03
Q. 5	(a)	Discuss in detail about the swelling resistance test of rubber product whose one surface is exposed to liquid.	07
Q. 5	(b)	Answer the following	
	i	Write a short note on different types of abradants.	04
	ii	Write down the formula to calculate the permeability coefficient by following constant volume method.	03
		OR	
Q. 5	(a)	Discuss in detail about the swelling resistance test of rubber product, when product as whole is exposed to liquid.	07
Q. 5	(b)	Answer the following	
	i	Explain the construction and working of din abrader.	05
	ii	Define the given terms: (i) Solubility Constant (ii) Permeability Constant	02
