Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - SUMMER 2013

Subj	ect (Code: 162601 Date: 24-05-2013	3
		Name: Rubber Compound and Product Testing 30 am - 01.00 pm Total Marks: 70)
nstru	ctions 1. 2.	1	
Q.1	(a)	Explain the general classification of the tests with suitable examples. Also summarize the purpose of testing.	07
Q.1	(b) i ii	Answer the following Write about the various methods available for dimension measurement. Differentiate the tack and adhesion.	05 02
Q.2	(a)	What do you mean by micro hardness? Discuss in detail about the micro hardness test.	07
Q.2	(b) i ii	Answer the following How the resilience is measured by falling weight method? Write down the practical significance of low temperature test for rubber product. OR	04 03
Q.2	(b) i ii	Answer the following List the different pendulums available for resilience measurement. Write about any two. Write down effect of short term temperature and long term temperature respectively on rubber.	05 02
Q.3	(a)	Discuss in detail about the tear test.	07
Q.3	(b) i ii	Answer the following Write about the major assembly which is used to measure the compression set under constant load. Why the flexural tests are not usually conducted for rubber?	05 02
Q.3	(a)	OR Write about the major assembly which is used to measure the compression set under constant deflection.	05
Q.3	(b) i ii	Answer the following Which systems are available for force measurement during tensile test? Which one is preferable? Why? Explain the concept of simple shear for rubber.	05 04
Q.4	(a)	Describe the factors affecting the degree of swelling.	06
Q.4	(b) i ii	Answer the following Explain the following grades of cracks: (i) Grade-A (ii) Grade-B Define the following terms: (i) Volume Resistivity (ii) Surface Resistivity (iii) Insulation Resistance (iv) Tracking Resistance	04 04

OR

Q.4	(a)	Give the classification of dynamic fatigue test. Also write about the various bending methods available for rubber products.	07
Q.4	(b)	Answer the following	
	i	Which generalized points need to be considered when rubber product is exposed to liquid?	04
	ii	Write down the formula to calculate the volume resistivity of rubber.	03
Q.5	(a)	Describe the construction and working of ozone test chamber.	06
Q.5	(b)	Answer the following	
	i	Write short note abradants.	04
	ii	Give the general features related to permeability test.	04
		OR	
Q.5	(a)	Write down the procedure to carry out the accelerated ageing of rubber product by heating in air.	06
Q.5	(b)	Answer the following	
-	i	Explain the term wear. Also categorize the wear mechanism.	05
	ii	Mention the scope and significance of the vapor transmission of volatile	03
		liquid test.	
