Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER - VI EXAMINATION - WINTER 2015** 

Subj	ect (	Code: 162601 Date:15/12/ 2015	
Subj	ect N	Name: Rubber Compound and Product Testing	
		0pm to 5:00pm Total Marks: 70	
Instru			
	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
	4.	Write the answer to the points.	
Q. 1	(a)	Discuss in detail about the purposes of testing.	0′
Q. 1	<b>(b)</b>	List the properties of unvulcanized rubber compound. Explain the method of measurement of any one property.	0'
Q. 2	(a)	Explain the term hardness with respect to rubber. Discuss any one method for hardness measurement.	0'
Q. 2	<b>(b)</b>	Discuss in detail about the vertical rebound test.  OR	0′
Q. 2	<b>(b)</b>	Discuss in detail about the tensile test.	0′
Q. 3	(a)	Discuss in detail about the tear test.	0′
Q. 3	<b>(b)</b>	Discuss in detail about the compression set measurement under constant deflection.  OR	0'
Q. 3	(a)		
	i ii	How deterioration of rubber is carried out by microorganism?  Define the following terms: (i) Antistatic Rubber (ii) Conductive Rubber (iii) Insulating Rubber (iv) Power Factor	04
Q. 3	(b)	Discuss in detail about the compression set measurement under constant load.	0′
Q. 4	(a)	Explain the term permeability. Discuss the constant volume method to study permeability behavior of vulcanizate.	0′
Q. 4	(b)	Explain the test method to measure the swelling resistance of rubber when whole vulcanizate is exposed to liquid.  OR	0′
Q. 4	(a)		0'
Q. 4	<b>(b)</b>	Explain the test method to measure the swelling resistance of rubber of rubber when only one surface of rubber vulcanizate is exposed to liquid.	0′
0.5	(a)	Discuss in detail about the ageing test of vulcanizate in presence of air.	0′

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Q. 5	<b>(b)</b>	Define the term abrasion. Which test methods are available to measure	07
		abrasion resistance of rubber? Discuss any one in detail.	
		OR	
Q. 5	(a)	Give the classification of dynamic fatigue test. Also write about the various bending methods available for rubber products.	07
Q. 5	<b>(b)</b>	Explain the recovery test which is developed to measure the low temperature behavior of rubber.	07

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