Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE VI SEMESTER- • EXAMINATION – SUMMER 2015

Subject code: 162601 Date: 01/05/2015

Subject Name: Rubber Compound and Product Testing

Time: 10.30am – 01.00pm Total Marks: 70

Instructions:

		tempt all questions. Make suitable assumptions wherever necessary. gures to the right indicate full marks.	
Q.1	(a)	Write about the generalized classification of rubber compound and product testing.	05
Q.1	(b)	Answer the following	
	i	Describe the micro hardness test.	06
	ii	How many ways the indenting force is applied during hardness measurement? Which one is preferred? Why?	03
Q.2	(a)	Discuss the various standard and nonstandard methods for dimension measurement.	07
Q.2	(b)	Answer the following	
	i	Explain the given terms: (i) Green Strength (ii) Tack	04
	ii	Write down the scope and significance of impact resilience test. OR	03
Q.2	(b)	Answer the following	
	i	Explain the given terms: (i) Shrinkage of compound (ii) Plasticity Retention Index	04
	ii	Write a brief note dunlop tripsometer.	03
Q.3	(a)	Discuss the tensile stress strain properties measurement of rubber products.	07
Q.3	(b)	Answer the following	
	i	Explain the effect of compounding ingredients on the tear resistance of rubber.	05
	ii	Write in brief about Grade-A type crack. OR	02
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Q.3 (a) Discuss in detail about different types of grip and extensometer used to carry out tensile test.

Q.3 (b) Answer the following
i Write about the different methods used to prepared the test specimens for tear test.
ii Write in brief about Grade-B type crack.
02

Q.4 (a) How compression set measurement is carried out under constant load? 07

Q.4 (b) Answer the following
i Write a note on tracking test.
04

	ii	List the major components of gehman apparatus.	03
		OR	
Q.4	(a)	How compression set measurement is carried out under constant deflection?	07
Q.4	(b)	Answer the following	
	i	Differentiate the volume resistivity measurement and surface resistivity measurement on the basis of their electrode assembly. Which modifications are done to minimize the problems in existing method?	04
	ii	Write down the formula to calculate apparent torsional moduli.	03
Q.5	(a)	Discuss in detail about the accelerated air ageing test for rubber vulcanizate.	07
Q.5	(b)	Answer the following	
	i	Write a short note on abradants	04
	ii	Explain in brief about ASTM reference fuels.	03
		OR	
Q.5	(a)	Discuss in detail about the swelling test when only one surface of vulcanizate is exposed to liquid.	07
Q.5	(b)	Answer the following	
	i	Explain the construction and working of ozone test apparatus.	05
	ii	How result of DIN abrasion test is expressed?	02
