Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION - SUMMER 2016

J		Ode:182604 Date:05/05/20	10
_		Name: Automation & Control in Rubber Industries	
		30 AM to 01:00 PM Total Marks:	70
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	2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. Write the answer to the points.	
Q. 1	(a)	Discuss the procedure for analyzing any process and applying instrumentation diagram to it.	07
Q. 1	(b)	Answer the following	
	i	Write down an importance of instrumentation diagram. Give any three symbols used in instrumentation diagram of rubber processing.	05
	ii	Give classification of instrument according to its function.	02
Q. 2	(a)	Discuss the problems with microcomputer in data acquisition and analysis.	07
Q. 2	(b)	Answer the following	
	i	Write a short note on raw material specification.	05
	ii	What do you mean by subjective inspection?	02
		OR	
Q. 2	(b)	<u> </u>	0.
	i ::	Write a short note on product specification	05
	ii	Which general considerations are made for quality control in rubber industry?	02
Q. 3	(a)	Discuss in detail about the components of product variation with respect to calendering operation.	07
Q. 3	(b)	Answer the following	
V. 2	i	How the barrel temperature measurement is carried out during the extrusion process?	04
	ii	What are the advantages of on calendar measurement? OR	03
Q. 3	(a)		07
Q. 3	(b)	Answer the following	
£. •	i	Mention the locations of rubber extruder, where temperature measurement is	05
		carried out. Also write a note on resistive temperature sensors.	
	ii	What are the disadvantages of on calender measurement?	02
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Q. 4	(a)	Discuss in detail about electrical pressure transducers.	07
Q. 4	(b)	Answer the following	
	i	Write a short note on eddy current tachometer.	05
	ii	What do you mean by thermocouple lead wire?	02
		OR	
Q. 4	(a)	Discuss in detail about reluctive pressure transducer.	07
Q. 4	(b)	Answer the following	
	i	Write a short note on contactless tachometer.	05
	ii	What do you mean by thermal well?	02
Q. 5	(a)	Discuss the dynamic behavior of first order system with suitable example.	07
Q. 5	(b)	Answer the following	
	i	Explain the term comparator. Which terms are used in control configurations?	04
	ii	Derive the transfer function for PI-controller.	03
		OR	
Q. 5	(a)	Discuss the dynamic behavior of pneumatic control valve.	07
Q. 5	(b)	Answer the following	
-	i	What do you mean by forcing function? Explain any two.	04
	ii	Derive the transfer function for PD-controller.	03
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