Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE – SEMESTER V • EXAMINATION – WINTER - 2012 Subject code: 151704 Date: 23-01-2013

Subjec	t Nar	ne: Industrial Control System		
Time:	02:30	pm to 05:00 pm Total Marks: 70		
Instruc	ctions	;:		
1	l. Att	empt all questions.		
		Make suitable assumptions wherever necessary.		
3	3. Fig	ures to the right indicate full marks.		
Q.1	(a)	Explain "Feed Forward" Control scheme with suitable example.	07	
	<b>(b)</b>	Explain the difference between open loop and closed loop control and also	07	
		explain the role of Feedback and Feedback elements in control systems.		
Q.2	(a)	What is mathematical modeling? Explain types and uses of mathematical	07	
		modeling with proper example of any process.		
	<b>(b)</b>	Explain the concept of discontinuous control and also explain any one	07	
		type of discontinuous controller with suitable diagram.  OR		
	<b>(b)</b>	Explain the concept of continuous control and explain any one type of	07	
	` '	continuous controller with suitable diagram.		
Q.3	(a)	What is DDC? Explain components and working of DDC.	07	
	<b>(b)</b>	What is controller tuning? Explain it in brief. Also compare various types	<b>07</b>	
		of controllers in brief.		
		OR		
Q.3	(a)	Draw and explain the characteristics of Control Valve.	07	
	<b>(b)</b>	Classify various types of control valves and explain any two in detail.	07	
<b>Q.4</b>	(a)	Explain cascade control scheme with suitable example.	07	
	<b>(b)</b>	Explain ratio control scheme with suitable example.  OR	07	
<b>Q.4</b>	(a)	What is PLC? Explain construction and working of PLC.	07	
	<b>(b)</b>	Explain advantages and disadvantages of PLC in detail.	07	
Q.5	(a)	What is DCS? Explain hierarchical structure of DCS in detail.	07	
	<b>(b)</b>	Explain SCADA with suitable diagram.	07	
		OR		
Q.5	(a)	Explain PLC Timers with suitable diagram and example	07	
	<b>(b)</b>	Explain PLC Counters with suitable diagram and example.	07	

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