Sea	ıt No.:	Enrolment No	_
		GUJARAT TECHNOLOGICAL UNIVERSITY	
		BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016	
	•	t Code:2171103 Date:21/11/201	.6
	-	Name:Industrial Automation(Departmental Elective - II)	
Tir	ne: 1	0.30 AM to 1.00 PM Total Marks: 70	
Ins	truct	cions:	
		1. Attempt all questions.	
		2. Make suitable assumptions wherever necessary.	
		3. Figures to the right indicate full marks.	
Q.1	(a) (b)	What is Automation and explain different types of automation systems. With a neat sketch, explain the construction and working of a distributed control system used in process industries.	07 07
Q.2	(a)	Discuss in brief about the various types of information display that can be achieved using DCS for efficient monitoring of plant parameters.	07
	(b)	Explain SCADA architecture in details. OR	07
	(b)	Enlist any two types of transducers for the measurement of Displacement. Explain any one transducer with neat diagram.	07
Q.3	(a) (b)	Explain computer based data acquisition (DAQ) system. Explain the basic principles of a Servo. Also explain DC Servo Motors. OR	07 07
Q.3	(a) (b)	Compare relative features of twisted pairs, coaxial cables and fiber optic cable. Classify the Actuators. Explain the working principle of stepping motor with neat diagram.	07 07
Q.4	(a) (b)	-	07 07
		OR	
Q.4	(a) (b)	Enlist the basic configuration of industrial robot. Explain Peak and Place Robot. Explain various advantages of field bus and explain any three field bus.	07 07
Q.5	(a) (b)	List the system characteristics that need to be analyzed for selection of PLC. Explain the concept of serial and parallel transmission techniques used for communication between two intelligent devices. OR	07 07
Q.5	(a) (b)	Explain various applications of signal conditioning circuits in DAQ. Explain elements of ladder diagram and its application to control the operation of tank for following steps: (1) When start PB is pressed the whole system enable.(2) Fill the tank up to middle level using valve 1 and Fill remaining tank using valve 2. (3) Drain the tank using valve V3 when tank is full and Drain PB pressed.(4) Start the heater when tank is full and stop when middle level is reached.	07 07
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