Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2172411 **Date:21/11/2016**

Subject Name:Industrial Automation

Time:10.30 AM to 1.00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the different levels of DCS systems.	**07**
	(b)	What are the advantages of Automation? Explain in detail Component of Industrial Automation.	**07**
Q.2	**(a)**	Define SCADA systems. Explain in details SCADA systems.	**07**
	(b)	Describe PLC scanning considerations in detail.	**07**
		OR	
	(b)	Explain in details Input/output Modules of PLC.	**07**
Q.3	**(a)**	Draw P.L.C. system layout & explain the functionality of all inter-connected parts.	**07**
	(b)	Write a technical note on: Remote Terminal Unit.	**07**
		OR	
Q.3	**(a)**	Draw internal block diagram of PLC CPU and explain various blocks.	**07**
	(b)	Explain in details Data Acquisition and process control system.	**07**
Q.4	**(a)**	Explain in detail Master Terminal Unit.	**07**
	(b)	Explain about DCS, its functions, advantages & limitations.	**07**
		OR	
Q.4	**(a)**	Explain Various applications of Automation systems.	**07**
	(b)	Explain D.C.S.integration with P.L.C"S & computers.	**07**
Q.5	**(a)**	Draw the timing diagram of retentive timer. Draw the timing diagram & write P.L.C.ladder logic equivalent of ON DELAY & DUAL OFF DELAY timer.	**07**
	(b)	Explain PLC skip function with suitable ladder logic diagrams.	**07**
		OR	
Q.5	**(a)**	Explain the PLC arithmetic functions and draw block format of each.	**07**
	(b)	Explain the P.L.C. SEQUENCER function. Write the ladder for sequencer with timer pulsing.	**07**

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