GUJARAT TECHNOLOGICAL UNIVERSITY
BE –SEMESTER VII NEW COURSE EXAMINATION- SUMMER 2018

Subject Code:2172411   **Date: 01-05-2018**
Subject Name: Industrial Automation
Time: 02:30 pm to 05:00 pm   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Explain in brief about Component of Industrial Automation.	**03**
	(b)	What are the advantages of Automation? Explain about Process Automation System,	**04**
	(c)	Draw & explain internal block diagram of PLC CPU.	**07**
Q.2	**(a)**	Draw the layouts of PLC input and output modules.	**03**
	(b)	Explain the merits of PLC over conventional relay logic.	**04**
	(c)	Explain about ladder & Boolean mnemonics programming language.	**07**
		OR	
	(c)	Describe PLC scanning considerations in detail.	**07**
Q.3	**(a)**	Explain in brief PLC relay Logic.	**03**
	(b)	Explain about PLC arithmetic functions.	**04**
	(c)	Define SCADA systems. Explain in details SCADA systems.	**07**
		OR	
Q.3	**(a)**	Draw the timing diagram of retentive timer.	**03**
	(b)	Write a technical note on: Remote Terminal Unit.	**04**
	(c)	Compare DCS,SCADA & PLC in tabular form.	**07**
Q.4	**(a)**	Explain in brief Master Terminal Unit.	**03**
	(b)	What do you understand by term DCS? List out applications of DCS.	**04**
	(c)	Explain in details Data Acquisition and process control system.	**07**
		OR	
Q.4	**(a)**	Explain Configuration of MTU.	**03**
	(b)	Explain about Network Control System.	**04**
	(c)	Explain Various applications of Automation systems.	**07**
Q.5	**(a)**	What do you understand by Process Survey & Process Control.	**03**
	(b)	How PLC handles overflow of numbers?	**04**
	(c)	Explain about DCS, its functions, advantages & limitations.	**07**
		OR	
Q.5	**(a)**	Explain about Current Trends in Automation Systems.	**03**
	(b)	Draw ON Delay and Off-Delay timer ladder diagrams.	**04**
	(c)	Explain D.C.S.integration with P.L.C"S & computers.	**07**

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