GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII (OLD) EXAMINATION – SUMMER 2019

Subject Code: 182403   **Date: 15/05/2019**

Subject Name:Industrial Automation

Time: 10:30 AM TO 01:00 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)**	List out advantages & disadvantages of PLC.	**05**
	(b)	Draw the layouts of PLC input and output modules and explain each in detail.	**05**
	(c)	Draw internal block diagram of PLC CPU.	**04**
Q.2	**(a)**	Explain about DCS, its functions, advantages & limitations.	**07**
	(b)	Draw the timing diagram of retentive timer. Draw the timing diagram and write PLC ladder logic equivalent of ON Delay and Dual OFF Delay timer.	**07**
		OR	
	(b)	Explain in detail the PLC Counter functions.	**07**
Q.3	**(a)**	Explain the P.L.C. arithmetic functions & draw block format of each.	**07**
	(b)	Explain SHIFT RIGHT,REGISTER ROTATE & MULTIPLE SHIFT RIGHT Functions of P.L.C.	**07**
		OR	
Q.3	**(a)**	Explain about PLC skip & master control relay functions & its application.	**07**
	(b)	Explain jump with return and jump with non return instructions.	**07**
Q.4	**(a)**	Explain the Typical PLC SEQUENCER function. Write the Ladder for Sequencer with Timer Pulsing.	**07**
	(b)	Explain the process scanning in P.L.C. with the help of scan cycle & appropriate example.	**07**
		OR	
Q.4	**(a)**	Explain about basics of controlling a Robot with a PLC.	**07**
	(b)	Explain PLC add function. How PLC handles overflow of numbers?	**07**
Q.5	**(a)**	Explain about application development & industrial application for power.	**07**
	(b)	Explain about DCS as an automation tool to support enterprise resources planning (E.R.P).	**07**
		OR	
Q.5	**(a)**	Explain DCS integration with PLCs and Computers.	**07**
	(b)	Explain about application development & industrial application for automobile.	**07**

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