Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2161709 **Date:18/05/2019**

Subject Name:Programmable Logic Controller

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.**

			MARKS
Q.1	**(a)**	List out various brands of PLC manufacturers.	**03**
	(b)	Brief about advantages of PLC.	**04**
	(c)	Draw and explain ladder logic program of motor control with PLC for forward and reverse direction.	**07**
Q.2	**(a)**	Develop a ladder diagram for AND & EX-OR Logic gates.	**03**
	(b)	List any four special I/O Modules of PLC with their functions.	**04**
	(c)	Explain various types of Input & Output devices interfaced with PLC in brief.	**07**
		OR	
	(c)	With neat diagram explain PLC Scanning in detail.	**07**
Q.3	**(a)**	Develop ladder diagram for 4 to 1 Multiplexer.	**03**
	(b)	Explain different processor modes of operations in PLC.	**04**
	(c)	Explain ON delay timer with timing diagram.	**07**
		OR	
Q.3	**(a)**	Develop ladder diagram for 2 to 4 Decoder.	**03**
	(b)	Describe rules for proper construction of ladder diagram.	**04**
	(c)	Explain counter function of PLC in details.	**07**
Q.4	**(a)**	Explain PLC instructions: Read RTC; Bit operation: RS, SR.	**03**
	(b)	Draw a ladder diagram to convert temperature from °C to °F.	**04**
	(c)	With example explain program control instruction: SKIP, MCR.	**07**
		OR	
Q.4	**(a)**	Brief about Table to Register Move function.	**03**
	(b)	Draw a ladder diagram using basic compare instruction for: An output is to be ON if count is between 50 and 100.	**04**
	(c)	Explain basic Two-axis Robot with PLC sequencer control.	**07**
Q.5	**(a)**	Describe PLC Division function.	**03**
	(b)	In context of Networking, describe levels of Industrial Control.	**04**
	(c)	Explain PID function of PLC in detail.	**07**
		OR	
Q.5	**(a)**	Describe the role of Analog module of PLC.	**03**
	(b)	Briefly describe standard programming languages of PLC.	**04**
	(c)	Write a short note on “Preventive maintenance of PLC”.	**07**

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