

**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
