Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 710305 **Date: 14/12/2015**

Subject Name: Programmable Logic Controller

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)	Draw and explain block diagram of PLC.	07
	(b)	Discuss advantages and disadvantages of PLC.	07
Q.2	(a)	Develop the ladder diagram for 4 to 1 Multiplexer.	07
	(b)	Draw the ladder diagram for F(a,b,c)= Σ (0,1,3,5,6,7)	07
		OR	
	(b)	Develop the ladder diagram for AND , OR , EX-OR Gate.	07
Q.3		Explain TON, TOF, RTO instruction of PLC with timing diagram.	14
		OR	
Q.3		Explain PLC counter related instructions with suitable example.	14
Q.4	(a)	Develop a PLC program with start and stop button. Pressing a ***START*** will start the motor and ***STOP*** will stop the motor. Motor shall remain ON even if ***START*** button is depressed.	07
	(b)	Explain various types of registers used in PLC.	07
		OR	
Q.4	(a)	Explain PLC data comparison instructions.	07
	(b)	Explain PLC ***arithmatic*** function with suitable example.	07
Q.5	(a)	Explain PLC ***skip*** and ***jump*** functions.	07
	(b)	Prepare the ladder diagram to generate square wave pulse.	07
		OR	
Q.5	(a)	Explain PLC Sequencer Functions with example.	07
	(b)	Write short note on types of networking.	07

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