Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY ME- SEMESTER II— EXAMINATION – SUMMER 2015

	•	t Code: 2720317 Date: 03/06/20)15
Tir	ne: 2 truction 1. 2.	. Attempt all questions.	70
Q.1		Draw and explain PLC block diagram. Compare PLC with relay logic diagram and state the application of PLC.	14
Q.2	(a) (b)	Explain types of Input / Output modules used in PLC. Explain PLC scanning in detail.	07 07
	(b)	OR Explain various types of registers used in PLC with example.	07
Q.3	(a) (b)	Develop ladder diagram various digital logic gates. Develop ladder logic diagram with <i>START</i> and <i>STOP</i> button. A motor shall start when <i>START</i> is pressed and stop when <i>STOP</i> is pressed. Provide interlock also.	08 06
Q.3		OR Draw the ladder programs for the following. 1. $F(a,b,c) = \hat{U}(0,1,2,3,6,7)$ 2. $F(a,b,c,d) = \hat{U}(0,1,2,3,5,6,8,9,12,13,14)$	14
Q.4		Explain PLC timer instruction with timing diagrams. OR	14
Q.4 Q.5		Explain PLC arithmetic group instruction with example. Develop ladder diagram 1. DC motor speed control 2. Frequency measurement	14 14
Q.5	(a) (b)	OR Explain with necessary diagram, bottle filling plant control. Explain PLC data comparison instructions.	07 07
