Seat No.: _		Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY	
		BE - SEMESTER-VII • EXAMINATION - SUMMER • 2014	
Subject Code: 171702 Date: 03-00		Code: 171702 Date: 03-06-2014	
Sub	ject	Name: Programmable Automation Controller	
	_	2:30 pm - 05:00 pm Total Marks: 70	
	uctio	-	
	1.	Attempt all questions.	
	2.	Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
Q.1	(a)	Differentiate between PLC and micro-processor.	(7)
	(b)	Explain scan cycle of PLC with diagram.	(7)
Q.2	(a)	Explain Fail-Safe circuit with ladder diagram and wiring diagram.	(7)
	(b)	Explain TON and TOFF timer with timing diagram.	(7)
		OR	
	(b)	Explain Up-counter and Down-counter with done bit and counting diagram	(7)
Q.3	(a)	List out the rules for proper construction of PLC ladder diagram	(7)
	(b)	There are two motor M1, M2. Use master ON-OFF and their individual ON-OFF button. If master is ON make sure that one of them is ON. Both of the motor can be ON at same time but can't be OFF at same time.	(7)
		OR	
	(a)	Make traffic light controller, where there are two different traffic light signals. Operate them Red for 7 sec, Green for 5 sec and yellow for 2 sec. When the R1 is on at that time G2 and Y2 will simulate in order and vice versa.	(14)
Q.4	(a)	Explain data transfer function of PLC	(7)
	(b)	Explain jump and skip instruction give example for both of them	(7)
		OR	
	(a)	Explain bit functions of PLC.	(7)
	(b)	Explain the procedure and instruction set of analog functions.	(7)
Q.5	(a)	Make square wave generator for 2kHz. For 40% duty cycle.	(7)
•	(b)	Make 3 to 8 decoder using ladder diagram.	(7)
	` /	OR	` /
	(a)	Make Car parking system which is having two separate door of entry and exit, which is operated by motor M1 and M2 in order. The detection of car is being done by	(14)

other require i/o.

proximity sensor P1 and P2 in order. Total capacity of system is 10 Cars. Entry door will be close if parking is full, and exit door will be close if parking is empty. Assume