Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – V EXAMINATION – SUMMER 2015

Subject Code: 3351704 **Date: 12/05 /2015**

Subject Name: PLC PROGRAMMING

Time: 02:30 PM TO 05:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1 Answer any seven out of ten. **14**

1. List PID tuning method for PLC
2. Write data transfer functions for PLC.
3. Define PID tuning for PLC.
4. State PLC logic functions .
5. Write function of holding register.
6. List advance comparison functions.
7. Draw ladder logic for D flip-flop.
8. List five common types of register used in PLC.
9. List any four PLC modules.
10. List any four types of industries where PLC used .

Q.2 (a) Explain communication module of PLC. **03**

OR

(a) Draw block diagram of PLC based automation system. **03**

(b) List register and flip flop characteristics **03**

OR

(b) Explain input and output register addressing schemes for PLC. **03**

(c) Write steps to install PLC. **04**

OR

(c) Explain PLC networking in brief. **04**

(d) State types of counter & explain function of any one counter. **04**

OR

(d) State types of timer & explain any one timer. **04**

Q.3 (a) List PLC arithmetic functions. **03**

OR

(a) Explain multiplication function with block and coil format. **03**

(b) Explain divide function with block & coil format. **03**

OR

(b) Explain sweep functions. **03**

(c) Explain shift register function. **04**

OR

(c) Explain skip function & its application. **04**

(d) With neat sketch explain PLC process level control. **04**

OR

(d) Explain analog signal processing with suitable example. **04**

Q.4	(a)	List application of sequencer ?	**03**
		OR	
	(a)	Explain BCD or multibit process for PLC analog operation.	**03**
	(b)	Explain monitor mode function with ladder diagram .	**04**
		OR	
	(b)	Explain force mode function with ladder diagram.	**04**
	(c)	Draw block & coil format for **not equal** & **greater than equal to** function.	**07**
Q.5	(a)	With neat sketch explain two axis robot controls.	**04**
	(b)	Draw & explain ladder logic for R-S flip-flop.	**04**
	(c)	List and explain PID functions.	**03**
	(d)	List PLC process applications.	**03**

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