

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**
