

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – VI• EXAMINATION – SUMMER 2016

Subject Code: 361705**Date: 23/05/2016****Subject Name: Advance Process Control****Time: 10:30 AM to 01:00 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** (a) List out the advantages of automation in process industry. **07**
 (b) Draw block diagram of PLC and explain its working in detail. **07**
- Q.2** (a) Explain Supervisory Control And Data Acquisition (SCADA) system with the help of suitable diagram. **07**
 (b) Define the term (i) Isolation (ii) Scan time for PLCs. **07**
- OR
- (b) Explain the functions performed at various levels of DCS with suitable example. **07**
- Q.3** (a) Mention various programming languages used for PLC programming. **07**
 And draw a ladder diagram to implement Exclusive OR logic.
 (b) Draw symbols for the following ladder diagram elements **07**
 (i) Motor (ii) Solenoid (iii) NC Level Limit Switch (iv) NO pressure switch (v) NO relay (vi) Red lamp (vii) NO flow switch.
- OR
- Q.3** (a) List out achievements of Artificial Intelligence. **07**
 (b) Discuss the selection criteria for PLC. **07**
- Q.4** (a) Discuss the advantages of DCS in operation and safety. **07**
 (b) Explain Discrete State Process Control with suitable Industrial **07**
 example.
- OR
- Q.4** (a) List out various types of CRT displays used in DCS. Also explain **07**
 any one in detail.
 (b) List out various network topology for DCS and explain any one of them. **07**
- Q.5** (a) List out the various Input/ Output modules used for PLC and explain **07**
 Any of them in detail .
 (b) What is latching? Explain its importance in ladder diagram with suitable **07**
 example.
- OR
- Q.5** (a) Explain direct digital control (DDC) with block diagram. **07**
 (b) How PLC is superior as compared to conventional automation. **07**
