

GUJARAT TECHNOLOGICAL UNIVERSITY**DIPLOMA ENGG.- VIth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 361705****Date: 31/05/2012****Subject Name: Advanced process control****Time: 10:30 am – 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. English version is considered to be Authentic

- Q.1** (a) Draw symbols for the following. **07**
- | | |
|----------------------------|-------------------------|
| (i) NO level switch | (v) Solenoid |
| (ii) NO temperature switch | (vi) NO pressure switch |
| (iii) Motor | (vii) NO flow switch |
| (iv) Light | |
- Q.2** (b) Draw block diagram of PLC and explain its working in detail. **07**
- (a) Mention various programming languages used for PLC programming. And draw a ladder diagram to implement Exclusive OR logic. **07**
- (b) Discuss the selection criteria for the selection of PLC. **07**
- OR**
- (b) Discuss the advantages of DCS in operation and safety. **07**
- Q.3** (a) Explain discrete state process control with suitable example. **07**
- (b) What is latching? Explain its importance in ladder diagram with suitable example. **07**
- OR**
- Q.3** (a) Explain discrete continuous process control with suitable example. **07**
- (b) What is isolation? How can you implement it for PLC? **07**
- Q.4** (a) How PLC is superior as compared to conventional automation. **07**
- (b) Explain the functions performed at various levels of DCS with suitable example. **07**
- OR**
- Q. 4** (a) List out various input/output modules for PLC and explain any two of them. **07**
- (b) Explain trend display and mimic generator in detail. **07**
- Q.5** (a) Discuss the features of intelligent control. **07**
- (b) List out various network topology for DCS and explain any one of them. **07**
- OR**
- Q.5** (a) Explain direct digital control with necessary diagram. **07**
- (b) With the help of necessary block diagram, explain SCADA (supervisory control and data acquisition) **07**
