

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering Semester –VI Examination Dec. - 2011

Subject code: 361705**Date: 12/12/2011****Subject Name: Advance Process Control****Time: 02.30 pm – 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. English version is considered Authentic.

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|-------------|-----|---|-----------|
| Q.1 | (a) | Draw block diagram of PLC and explain its working in detail. | 07 |
| | (b) | List out the advantages of automation in process industry. | 07 |
| Q.2 | | | |
| | (a) | Explain Supervisory Control And Data Acquisition (SCADA) system with the help of suitable diagram. | 07 |
| | (b) | List out the merits and demerits of the Supervisory control system & DCS system. | 07 |
| | | OR | |
| | (b) | List out the merits and demerits of the PLC. | 07 |
| Q.3 | | | |
| | (a) | Explain Discrete State Process Control with suitable Industrial example. | 07 |
| | (b) | Explain DDC with block diagram. | 07 |
| | | OR | |
| Q.3 | | | |
| | (a) | Explain Composite Process Control with suitable Industrial example. | 07 |
| | (b) | Explain features of Artificial Intelligence. | 07 |
| Q.4 | | | |
| | (a) | Draw the Ladder logic for AND gate, OR gate, Ex-OR gate, NOT gate separately. | 07 |
| | (b) | Draw symbols for the following ladder diagram elements
(i) Motor (ii) Solenoid (iii) NO Level Limit Switch (iv) NC Flow switch (v) NO relay (vi) Green lamp (vii) NO temp. switch. | 07 |
| | | OR | |
| Q. 4 | | | |
| | (a) | Discuss the selection criteria for PLC. | 07 |
| | (b) | Define the term “Isolation”. How do you implement it for PLCs. | 07 |
| Q.5 | | | |
| | (a) | List out various types of CRT displays used in DCS. Also explain any one in detail. | 07 |
| | (b) | Write short note on Applications of PLC. | 07 |
| | | OR | |
| Q.5 | | | |
| | (a) | Write short note on Ring Topology & Star Topology | 07 |
| | (b) | List out the various Input/ Output modules used for PLC and explain any two of them in detail. | 07 |
