

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 151704****Date: 23-01-2013****Subject Name: Industrial Control System****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.

- Q.1** (a) Explain “Feed Forward” Control scheme with suitable example. **07**
(b) Explain the difference between open loop and closed loop control and also explain the role of Feedback and Feedback elements in control systems. **07**
- Q.2** (a) What is mathematical modeling? Explain types and uses of mathematical modeling with proper example of any process. **07**
(b) Explain the concept of discontinuous control and also explain any one type of discontinuous controller with suitable diagram. **07**
- OR**
- (b) Explain the concept of continuous control and explain any one type of continuous controller with suitable diagram. **07**
- Q.3** (a) What is DDC? Explain components and working of DDC. **07**
(b) What is controller tuning? Explain it in brief. Also compare various types of controllers in brief. **07**
- OR**
- Q.3** (a) Draw and explain the characteristics of Control Valve. **07**
(b) Classify various types of control valves and explain any two in detail. **07**
- Q.4** (a) Explain cascade control scheme with suitable example. **07**
(b) Explain ratio control scheme with suitable example. **07**
- OR**
- Q.4** (a) What is PLC? Explain construction and working of PLC. **07**
(b) Explain advantages and disadvantages of PLC in detail. **07**
- Q.5** (a) What is DCS? Explain hierarchical structure of DCS in detail. **07**
(b) Explain SCADA with suitable diagram. **07**
- OR**
- Q.5** (a) Explain PLC Timers with suitable diagram and example **07**
(b) Explain PLC Counters with suitable diagram and example. **07**
