

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code: 151704**Date: 28/11/2016****Subject Name: Industrial Control Systems (Institute Elective II)****Time: 10:30AM - -1:00PM****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) What are the difficulties and requirements of process control implementation? **07**
(b) What are the types and uses of mathematical modeling? **07**
- Q.2** (a) Write short note on electronic discontinuous controllers. **07**
(b) Give steps in synthesis of control systems. **07**
- OR**
- (b) Explain servo versus regulator operation of closed loop system. **07**
- Q.3** (a) Write short note on integral anti windup. **07**
(b) Write short note on SCADA hardware and software. **07**
- OR**
- Q.3** (a) What is DDC? Explain components and working of DDC. **07**
(b) Write short note on digital controller realization. **07**
- Q.4** (a) What do you mean by controller tuning? Explain any one method of tuning PID controller. **07**
(b) Draw and explain the characteristics of Control Valve **07**
- OR**
- Q.4** (a) Explain the selection criterion of control valves in details. **07**
(b) Write short note on electronic derivative controller? Why derivative action can't be used alone? **07**
- Q.5** (a) Write short note on ratio controller along with suitable example **07**
(b) Write short note on DCS hardware and software. **07**
- OR**
- Q.5** (a) Draw and explain cascade control scheme in detail. **07**
(b) Explain PLC Counters with suitable diagram and example. **07**
