

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. Sem. - V - Examination – June- 2011

Subject code:151704

Subject Name: Industrial Control Systems

Date:30/06/2011

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.**

- Q.1** (a) Define Open-loop and Closed Loop control systems. Compare both. **07**
(b) Explain types and uses of mathematical modeling. **07**

- Q.2** (a) Discuss on-off controller in detail. **07**
(b) Explain proportional mode of controllers in detail. **07**

OR

- (b) Explain integral mode of controllers in detail. **07**

- Q.3** (a) Explain proportional controller in closed loop with an example. **07**
(b) Discuss Ziegler – Nichols tuning method in detail. **07**

OR

- Q.3** (a) Explain any one electronic discontinuous controller. **07**
(b) Explain components and benefits of DDC. **07**

- Q.4** (a) Discuss globe and gate valves with neat sketch. **07**
(b) Draw and explain four graphical elements and their locations. **07**

OR

- Q.4** (a) Draw and explain P&I diagram of CSTR. **07**
(b) Discuss selection criteria for selecting a control valve. **07**

- Q.5** (a) Discuss Cascade Control strategy in detail. **07**
(b) Explain basic parts of a PLC in brief. **07**

OR

- Q.5** (a) Discuss Feed forward Control strategy in detail. **07**
(b) Discuss advantages and disadvantages of DCS. **07**
