

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012

Subject code: 161703**Date: 04/01/2013****Subject Name: Control System Components****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Define the following- **06**
- | | |
|-----------------------|--------------------------|
| (i) Flow Coefficient | (ii) Seat rings |
| (iii) Bonnet Assembly | (iv) Valve Positioner |
| (v) Rupture Disc | (vi) Safety Relief Valve |
- (b)** Define the following terms used in gears- **03**
- | | |
|--------------------|----------------|
| (i) Gear Ratio | (ii) Back lash |
| (iii) Pitch Circle | |
- (c)** Write short note on Flow switches **05**
- Q.2 (a)** Why is selection of control valve important to the chemical process and which points are considered for its selection? **07**
- (b)** Classify stepper motors and describe any one detail. **07**
- OR**
- (b)** Explain different types of cams. **07**
- Q.3 (a)** What is difference between electronic transmitter and intelligent transmitter? **07**
- (b)** Describe the level switches used for level detection of solid or liquid. **07**
- OR**
- Q.3 (a)** Explain the working of DC servomotor. **07**
- (b)** Explain the noise problems associated with control valve and their remedies. **07**
- Q.4 (a)** Explain non-contact type proximity switches. **07**
- (b)** Which are types of actuators used for control valves and explain any one detail. **07**
- OR**
- Q.4 (a)** Which are various types of three way control valve? Explain their application with suitable example. **07**
- Q.4 (b)** What is the difference between relay and contactor? Name various types relays used in industries. **07**
- Q.5 (a)** What is the application of gear? Explain the working any one type of gear in detail. **07**
- (b)** Explain the merits and demerits of reed relays. **07**
- OR**
- Q.5 (a)** Explain the construction and working of induction motor. **07**
- (b)** Explain the working of safety valve or relief valve. **07**
