

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – WINTER 2013

Subject Code: 161703**Date: 02-12-2013****Subject Name: Control System Components****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) Define the following terms used in gears- **07**
(i) Gear Ratio (ii) Back lash (iii) Pitch Circle
(b) Explain the cam terminology with neat sketch. **07**
- Q.2** (a) Explain the pressure drop requirements for good control valve and also explain how it controls flow? **07**
(b) Explain the working of any one flow switch is using movable parts and the one which is not using movable parts. **07**
- OR**
- (b) Which are different types of stepper motors? Also explain the various applications of stepper motor in instrumentation **07**
- Q.3** (a) Which are the components of cam? Explain the various types of followers. **07**
(b) What is the application of gear? Explain the working any one type of gear in detail. **07**
- OR**
- Q.3** (a) Explain Basic and FCI equation of control valve sizing. **07**
(b) Enlist the pressure relieving devices. Also describe relief valve in detail. **07**
- Q.4** (a) Write short note on A.C. servomotor. **07**
(b) Explain Relay problems and remedies for those problems. **07**
- OR**
- Q.4** (a) Derive transfer function of armature controlled D.C. servomotor. **07**
(b) What is different between proximity switches and limit switches? Explain any one from the both. **07**
- Q.5** (a) Classify the actuators of control valves and explain them in brief. **07**
(b) Explain the working of pneumatic and electronic transmitters. **07**
- OR**
- Q.5** (a) Explain the various applications of relays. What is the difference between relay and contactor? **07**
(b) Explain the Cam as a Mechanical Function Generator, with suitable example. **07**
