

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 161703****Date: 15/05/2012****Subject Name: Control System Components****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) Explain Globe valve and its type in detail. **07**
 (b) Explain the cam terminology with neat sketch. **07**
- Q.2** (a) 1) Design a cam as a mechanical function generator for the **04**
 function, $Y = A \cos \theta$ for $\theta = 0^\circ$ to 90°
 $Y = 0$ for remaining period
 2) Explain working of polarized relay. **03**
- (b) Explain backlash in gears, also explain techniques to reduce backlash. **07**
- OR**
- (b) Draw and explain flow characteristics with respect to control valve. **07**
- Q.3** (a) Draw and explain characteristics of pick-up type electromechanical **07**
 relay with neat sketch.
 (b) Explain Temperature switch and Pressure switch. **07**
- OR**
- Q.3** (a) What is actuator? Explain any one type of actuator with appropriate **07**
 diagram.
 (b) What is cavitation? Explain different valve noise problem. **07**
- Q.4** (a) Derive transfer function of field controlled D.C. servomotor. **07**
 (b) Explain different control valve accessories. **07**
- OR**
- Q.4** (a) Write short note on A.C. servomotor. **07**
 (b) Explain rupture disk with its advantage and disadvantage. **07**
- Q.5** (a) Enlist the pressure relieving devices. Also describe relief valve in detail. **07**
 (b) Explain pneumatic transmitter with its application. **07**
- OR**
- Q.5** (a) Explain following valve terminology **07**
 1) Galling 2) Bonnet 3) Valve capacity
 4) Trim 5) Yoke
 (b) Explain construction and working of variable reluctance type stepper **07**
 motor.
