

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 161703****Date: 28-05-2013****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 backlash in gears, also explain techniques to reduce backlash. **07**
(b) Explain the cam terminology with neat sketch. **07**
- Q.2** (a) Derive transfer function of field controlled D.C. servomotor. **07**
(b) Explain rupture disk with its advantage and disadvantage. **07**
- OR**
- (b) Which level switches are used for liquid level and solid material level detection? Explain the working of any level switch in detail with sketch. **07**
- Q.3** (a) Classify the different types of gears and explain them in brief. **07**
(b) Explain the working of pneumatic and electronic transmitters. **07**
- OR**
- Q.3** (a) Explain the criteria for the selection of control valves. **07**
(b) Explain following valve terminology **07**
1) Galling 2) Bonnet 3) Valve capacity
4) Trim 5) Yoke
- Q.4** (a) Explain the various applications of relays. What is the difference between relay and contactor? **07**
(b) What is the significant of control valve flow characteristic? Explain selection of flow characteristics based on application with reason. **07**
- OR**
- Q.4** (a) Which are the components of cam? Explain the various types of followers. **07**
(b) What is difference between AC & DC servomotors? Explain the Fleming's left hand rule in connection with DC motor. **07**
- Q.5** (a) Classify the actuators of control valves and explain them in brief. **07**
(b) Explain the differential pressure switch with all details **07**
- OR**
- Q.5** (a) Explain the working of any one flow switch is using movable parts and the one which is not using movable parts. **07**
(b) Explain construction and working of variable reluctance type stepper Motor. **07**
