Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER-VI • EXAMINATION – SUMMER- 2015

Subject code: 161703 **Date: 08/05/2015**

Subject Name: Control System Components

Time: 10.30am-01.00pm **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)**	Derive transfer function of armature controlled DC Servomotor.	**07**
	(b)	Discuss about backlash in gears	**07**
Q.2	**(a)**	Explain necessary pressure drop requirements across control valve for good control.	**07**
	(b)	With sketch discuss about types of followers	**07**
		OR	
	(b)	Explain working of split ranging control valves	**07**
Q.3	**(a)**	Describe about intelligent transmitter.	**07**
	(b)	Differentiate quick opening, linear and equal percentage flow rate characteristic of Valve.	**07**
		OR	
Q.3	**(a)**	Mention about single seat v/s double seat construction in valve.	**07**
	(b)	Write valve selection guidelines based on control valve sizing.	**07**
Q.4	**(a)**	Describe about pilot operated relief valves.	**07**
	(b)	Explain application of contactors with suitable figure.	**07**
		OR	
Q.4	**(a)**	Brief about proximity and limit switches.	**07**
	(b)	Write a note on reed relays.	**07**
Q.5	**(a)**	Give difference between Permanent Magnet type, Variable reluctance and Hybrid type stepper motor.	**07**
	(b)	Discuss about self latching circuits in relays.	**07**
		OR	
Q.5	**(a)**	Explain operation of induction motor with necessary sketch.	**07**
	(b)	With suitable example discuss CAM as a mechanical function generator.	**07**

****