Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER–IV • EXAMINATION – WINTER • 2014

Subject Code: 341703 **Date: 03-12-2014**

Subject Name: Control System Components

Time: 02:30 pm - 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.**
4. **English version is considered to be Authentic.**

Q.1	(a)	Define Following Terms. (A) Rangeability (B) Leakage (C) Valve Co-Efficient (D) Capacity (E) Trim (F) Seat Ring (G) Cavitation	**07**
	(b)	Explain one unique characteristic of each of following valve. a)globe valve b) angle valve c) ball valve d)butterfly valve e)saunder valve f) solenoid valve g) check valve	**07**
Q.2	(a)	What is the function of valve actuator in control valve? Explain single and double acting piston actuator.	**07**
	(b)	Explain in brief butterfly valve.	**07**
		OR	
	(b)	Explain solenoid valve in brief and write its application.	**07**
Q.3	(a)	List the factor affecting control valve selection and explain any one.	**07**
	(b)	Enlist various types of control valve noise. What are the different methods to reduce it? Explain any one.	**07**
		OR	
Q.3	(a)	Which are different Characteristics of Control Valve? Explain them with application.	**07**
	(b)	Define pneumatic positioner and explain electro-pneumatic positioner.	**07**
Q.4	(a)	Write the difference between DC techo-generator and AC techo-generator.	**07**
	(b)	What is slewing rate in case of stepper motor? Explain in brief variable reluctance stepper motor.	**07**
		OR	
Q. 4	(a)	List the various types of potentiometer. Explain potentiometer as a position indicator.	**07**
	(b)	Explain principle, construction and working of synchro transmitter.	**07**
Q.5	(a)	Explain principle, construction and working of permanent magnet stepper motor.	**07**
	(b)	Write short note on dc servo-motor.	**07**
		OR	
Q.5	(a)	Define yaw, roll and pitch. Explain gyroscope principle and operation.	**07**
	(b)	Write a short note on ‘Synchro as an error detector’.	**07**

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