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.   **07**
(A) Rangeability   (B) Leakage   (C) Valve Co-Efficient   (D) Capacity
(E) Trim   (F) Seat Ring   (G) Cavitation

(b) Explain one unique characteristic of each of following valve.   **07**
a)globe valve   b) angle valve   c) ball valve   d)butterfly valve
e)saunder valve   f) solenoid valve   g) check valve

Q.2 (a) What is the function of valve actuator in control valve? Explain single and   **07**
double acting piston actuator.

(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   **07**
reduce it? Explain any one.

OR

Q.3 (a) Which are different Characteristics of Control Valve? Explain them with   **07**
application.

(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   **07**
reluctance stepper motor.

OR

Q. 4 (a) List the various types of potentiometer. Explain potentiometer as a position   **07**
indicator.

(b) Explain principle, construction and working of synchro transmitter.   **07**

Q.5 (a) Explain principle, construction and working of permanent magnet stepper   **07**
motor.

(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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