

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering - Semester-IV - Examination Winter 2013

Subject code: 341703**Date: 04-12-2013****Subject Name: Control System Component****Time: 10:30 am – 1:00 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 Authentic

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|-------------|---|-----------|
| Q.1 | (a) Define the following terms context to control valve (1) Capacity (2) Plug (3) Stem (4) Rangeability (5) Leakage (6) Differential Pressure (7) Normally Closed | 07 |
| | (b) List special valves and explain Saunders Patterns Valve in detail | 07 |
| Q.2 | (a) Draw characteristics of quick opening type control valve with its shape of valve plus. | 07 |
| | (b) Which are the parameters for a control valve selection? Explain flow characteristics in detail. | 07 |
| OR | | |
| | (b) List the types of valve noise and explain the removal of valve noise by source treatment | 07 |
| Q.3 | (a) State the types of potentiometer as a position indicator. Explain linear type of potentiometer with its construction. | 07 |
| | (b) List the types of Synchro and explain the working principle of any one type with diagram. | 07 |
| OR | | |
| Q.3 | (a) Explain the working principle of tachogenerator in speed control. | 07 |
| | (b) Compare A. C. and D.E. servo motor. | 07 |
| Q.4 | (a) How does D.E. Servo motor work? Explain its working principle and construction. | 07 |
| | (b) How does Synchro pair work as an error detector? | 07 |
| OR | | |
| Q. 4 | (a) How does A.C. servo motor work in control system? Explain its working principle and construction. | 07 |
| | (b) How can we control D. C. servo motor by armature control method? | 07 |
| Q.5 | (a) How does an electro-pneumatic valve actuator work? Explain it in detail | 07 |
| | (b) Why valve positioners are needed? Explain any one in detail. | 07 |
| Q.5 | (a) Listing applications of stepper motor explain its working with construction | 07 |
| | (b) How does an electric valve actuator work? Explain it in detail | 07 |
