

B.E. / B.Tech. Instrumentation Engineering (Model Curriculum) Semester-VI  
**IN604M / SYSTEM1 - Control System Components**

P. Pages : 2



Time : Three Hours

**GUG/S/25/14031**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.
  4. Diagrams and Chemical equation should be given wherever necessary.

- 1.** a) Explain any four manually handled switches with the help of neat diagram. **8**  
b) Explain with neat sketch the working of reed relay and give its application. **8**

**OR**

- 2.** a) Explain contractors in detailed. **8**  
b) Write short note on following: **8**  
i) Application of contactors.                   ii) Hermetically sealed relay.
- 3.** a) Explain the working of field controlled DC servomotor. **8**  
b) Describe the construction and working of AC servo motor with neat sketch. **8**

**OR**

- 4.** a) With neat sketches, explain the constructional details and working principle of hybrid stepper motor. **8**  
b) With neat sketches, explain the constructional details and working principle of permanent magnet stepper motor. **8**
- 5.** a) What are different types of feeders? Elaborate the working of necessity of feeders. **8**  
b) Discuss What are circuit breakers? What is the need of circuit breakers? **8**

**OR**

- 6.** a) Draw and Explain the Construction and working of Angle type control valve. **8**  
b) Discuss application of synchros as error detector. **8**
- 7.** a) Describe the directional control valve with its types in detail. **8**  
b) What are the types of pneumatic relay? Explain direct acting relay in detail. **8**

**OR**

OR

- 10.** a) Write short note on following system. 8

a) Hydraulic pumps.                                    b) Hydraulic supply.

b) Describe the working of hydraulic circuit for meter in and meter out. 8

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