

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

P. Pages : 2

Time : Three Hours



GUG/S/23/14031

Max. Marks : 80

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- 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.
 5. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Elaborate the construction and working of electromechanically relay (EMR) with suitable diagram. 8
- b) Compare contractor with relay. 8

OR

2. a) Write short note on following. 8
- a) Application of Contractor
 - b) Hermetically sealed relay.
- b) Discuss the following term along with specifications. 8
- i) Toggle switch
 - ii) Thumbwheel switch
3. a) Illustrate the construction and working of Stepper motor. 8
- b) Differentiate between following: 8
- i) Armature controlled DC servo motor and Field controlled DC servo motor.

OR

4. a) Discuss in detail any two industrial applications of AC servomotors. 8
- b) Differentiate between following 8
- i) DC servo motor, AC servo motor and stepper motor.
5. a) Write a short note on: 8
- i) Feeders
 - ii) Dampers
- b) Write a short note on fail safe current alarm. 8

OR

6. a) What is the need of circuit breaker? Discuss any one type of circuit breaker with application. 8
- b) Discuss control valve sizing with application. 8

7. a) Write a short note on the following. 8
a) Shuttle valve
b) Twin pressure valve
- b) Describe construction and working of pneumatic time delay valve. 8

OR

8. a) Describe with neat sketch the working of the bleed and non-bleed type of pneumatic relay. 8
- b) Elaborate with neat diagram construction and working of quick exhaust valve and give its application. 8
9. 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

OR

10. a) Elaborate with neat diagram construction and working of sequence valve and give its application. 8
- b) Compare hydraulic system with pneumatic system based on the following. 8
a) Power developed
b) Installation and running cost
c) Maintenance
d) Application
