B.E. Instrumentation Engineering Fifth Semester

IN505 - Control System Components

P. Pages : 1 **GUG/W/18/1645**

Time : Three Hours * 1 2 9 4 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Diagrams and Chemical equation should be given wherever necessary.
8. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Discuss in brief. **8**
i) Optically coupled solid state relay. ii) Hybrid solid state relay.
b) Elaborate various contractors in detail with its applications. **8**

OR

2. a) Distinguish in between contactor and relay. **8**
b) Illustrate with neat sketch the working of reed relay. List its typical applications. **8**

3. Draw and explain Electrical wiring diagram for **any two.** **16**
i) Jogging / Inching
ii) Starting of motor.
iii) Reversing direction of rotation.

OR

4. a) Elaborate the concept of sequencing and interlocking. **8**
b) Enlist and explain in brief conditions against which motor needs protection. **8**

5. a) Elaborate need of circuit breaker. **8**
b) Discuss Alarm annunciator in detail. **8**

OR

6. a) Draw and explain in brief various components of control valve. **8**
b) Explain in detail I/P converter with suitable diagram. **8**

7. a) Elaborate any hydraulic valve in detail with neat diagram. **8**
b) List and explain different properties for selection of oil to be used in hydraulic system. **8**

OR

8. a) Develop using standard symbols, hydraulic circuit diagram for meter in, meter out of fluid. **8**
b) Explain in detail hydraulic power pack. **8**

9. a) Describe construction and working of pneumatic time delay valve. **8**
b) Explicate the control of single acting cylinder and control of double acting cylinder with the help of pneumatic circuit. **8**

OR

10. a) Discuss with neat sketch the working of pneumatic actuator. **8**
b) Enlist and explain any one pneumatic relay with suitable diagram. **8**

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