B.E.(with Credits)-Regular-Semester 2012-Instrumentation Engineering Sem V

IN505 - Control System Components

P. Pages : 1 **GUG/W/16/3784**

Time : Three Hours * 3 9 7 9 * 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.

1. a) Explain the construction and working of electro-mechanical relay [EMR] with suitable diagram. **8**

b) Explain any four manually handled switches with the help of neat diagram. **8**

OR

2. a) Compare contactors with relay. **8**

b) Explain the working of reed relay and give its applications. **8**

3. a) Discuss the condition against which a motor needs protection. **8**

b) Draw using standard symbols, electrical wiring diagram for direct online starter. **8**

OR

4. a) Explain full voltage starting of AC induction motor. **8**

b) What are the different methods used for breaking of an electric motor. Explain any two method in detail. **8**

5. a) List the types of fuse. Explain any one of them. **8**

b) What is fluidics ? Explain Tesla's fluid diode and coanda effect. **8**

OR

6. a) Compare fuse & circuit breaker. **8**

b) Write short note on: **8**
i) Flow totalizer ii) Desirable characteristics of fuse.

7. a) State various components required for a hydraulic power supply explain with neat sketch any two components. **8**

b) Write short note on following system. **8**
a) Hydraulic pumps b) Hydraulic valves

OR

8. a) Compare hydraulic system with pneumatic systems based on the following. **8**
i) Power developed ii) Maintenance
iii) Installation & running cost iv) Application

b) Give the classification of hydraulic pumps explain working of any one type. **8**

9. a) Explain any two special type of pneumatic cylinders. **8**

b) Explain with neat sketch the working of the bleed and non-bleed type of pneumatic relay. **8**

OR

10. a) Explain construction & working of pneumatic time delay relay valve. **8**

b) With the help of pneumatic circuits explain sequencing of two double acting cylinder. **8**

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