

T. E. , Instrumentation , Sem: V (choice Based)

[Time: Three Hours]

[Marks:80]

1/1

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any three questions from the remaining five questions
 3. Draw neat diagrams wherever required
 4. Assume suitable data if necessary.

- 1 Attempt any four. 20
 - a. Explain Solid State Relay and Reed Relay.
 - b. Illustrate and explain Sequence valves.
 - c. What are the uses of Relief valve?
 - d. Explain current to pressure converter.
 - e. Give the applications, advantages and disadvantages of Needle valve.
- 2 a. Explain Control valve terminologies. State need and specifications of Control Valve. 10
b. Brief about special types of pneumatic valve: Pilot-operated valves and Non-return valves 10
- 3 a. What are the auxiliary process control components? State the need for safety valves in industry. 10
b. Draw and explain Hydraulic pumps: centrifugal pumps, gear pumps and lobe pumps. 10
- 4 a. Draw and Explain Flow characteristics of the control valve (Inherent and Installed). 10
b. Draw and brief about Air supply system and its components. 10
- 5 a. Explain desirable features of SMART transmitter. 10
b. Draw and explain Rotary switches, Selector switches and thumbwheel switches. 10
- 6 Write a short note on:- 20
 - a. Toggle switches
 - b. Hydraulic actuators
 - c. Two and Three wire transmitters.
 - d. Pinch Valve