Sem-V control system & components Instr 2015/08

P4/RT-Ex-08-627

Con. 2632–08. [REVISED COURSE] CO–2518

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Assume **suitable** data wherever **required**.

1. (a) What is meant by inherent and installed characteristics of control valve or tim ? Explain with the help of graph. 10

   (b) What is soleroid valve ? How it operates ? Write general specifications of solenoid valve. Explain different types of solenoid valves with their typical applications. 10

2. (a) Draw air distribution system. Explain each component. 10

   (b) Draw and explain motion balance pressure transmitter ? How it is calibrated ? 10

3. (a) What are different types of hydraulic pumps ? Explain the working of centrifugal pump. 10

   (b) Explain smart transmitter ? How these are different than conventional transmitters ? 10

4. (a) What is I to P converter ? Why it is required ? Explain construction and working of it. 10

   (b) Differentiate clearly between relief valve, safety valve, safety relief valve. Explain each in short. 10

5. (a) Draw and explain pneumatic ckt diagram to control double acting cylinder using two 3/2 way valve and on 5/2 way valve. Draw ISO symbol of each component used. 10

   (b) Draw and explain construction of double acting cylinder. Explain all cases of double acting cylinder. 10

6 (a) Draw and explain elements of basic annunciators system. What are different types of annunciators ? 10

   (b) What is valve positioner ? Why it is required ? Explain construction and working of any valve positioner. 10

7. Write short notes on :– 20
   (a) Butterfly valve
   (b) Pneumatic actuators
   (c) Selection criterion of control valve
   (d) Double seated globe valve.