Sem-V Control System & Components 18/5/10
EXTC 3

VT-Apel-09-248

Con. 2784-09. (REVISED COURSE) VR-5122

( 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) Compare an electrical, pneumatic and hydraulic systems along with their applications. 10
(b) What is solenoid valve ? How it operates ? Write general specifications of solenoid valve. Explain the different types of solenoid valves with their applications. 10

2. (a) Explain the necessity of control-valve positioner. Also explain in detail the working of any one type of valve positioner. 10
(b) Explain in detail the inherent and installed control valve characteristics. 10

3. (a) Explain the flapper-nozzle system and derive its transfer function. 10
(b) Explain the construction and working of I to P converter. 10

4. (a) Describe the working of any one type of pressure regulators with a neat sketch. 10
(b) What is current transmitter ? Differentiate clearly between 2-wire and 4-wire current transmitters. 10

5. (a) Draw and explain the construction of double acting cylinder. Explain all cases of double acting cylinders. 10
(b) What are the different types of hydraulic pumps ? Explain the construction and working of centrifugal pump. 10

6. (a) Explain the Smart Transmitter. State and explain its salient features. 10
(b) Draw and explain the basic annunciator system. What are the different types of annunciators ? 10

7. Write short notes on :- 20
(a) Selection criteria of control valves
(b) Square root extractor
(c) Butterfly valves
(d) Pressure switch.

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