

End Semester Examinations - 2015-16 Even Semester - May 2016

14ME2007 Fluid Power Control Engineering

Set A

Time : 3 hrs
Total Marks: 100

1. (a) Draw the ISO symbols and brief the working of the following:
(i) Pneumatics: flow control valve, Pressure regulator valve and Shuttle valve. (3)
(ii) Hydraulic: Sequence valve, Pressure reducing valve and Bi-directional fixed displacement pump (3)
(b) Draw a basic hydraulic system, name the components and explain their functions. (14)

OR
2. (i) Draw different central positions in 4/3 DCV. (5)
(ii) Explain the working of double acting hydraulic cylinder, with neat cross sectional diagram (15)
3. (i) Find the actual delivery of the gear pump with the following specifications: Outside diameter of the gear = 90 mm, Inside diameter of the gear = 70 mm, Gear width = 20 mm, Speed of the pump = 1800 rpm, Volumetric efficiency = 85%. (5)
(ii) Classify pressure accumulators and explain briefly the working principle of any three with neat diagrams. (15)

OR
4. (i) What is the function of intensifier and discuss with a hydraulic circuit. (10)
(ii) Discuss the two types of speed control circuits for a double acting hydraulic cylinder (10)
5. (i) Demonstrate the working of pressure sequence valve with a pneumatic circuit (14)
(ii) Enumerate various properties of hydraulic fluids. (6)

OR
6. (i) Explain the working of a piston motor with neat diagram. (12)
(ii) Draw the schematic diagram of hydraulic vane motor. (8)
7. List various types of compressor and explain any two with neat diagrams. (20)

OR
8. (i) Draw and discuss the automatic hydraulic cylinder reciprocating circuit. (8)
(ii) Explain the hydraulic circuit used for vertical milling machine. (12)
9. (i) Draw the hydraulic press circuit and name the components. (8)
(ii) Design and develop a pneumatic circuit for the sequence of $A^+B^+A^-B^-$ (12)

Wishing you All the Best