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4th Sem./ Automation & Robotics

Subject : Fluid Power Systems

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which law states that pressure exerted on a liquid is transmitted equally in all directions? (CO1)

a) Pascal's Law b) Boyle's Law

c) Archimedes principle d) Charle's Law

Q.2 The power source in pneumatic system is_____? (CO2)

a) Pump b) Compressor

c) Valve d) Muffler

Q.3 Which are known as poppet valves? (CO2)

a) Seat valves

b) Slide valves

c) Pressure reducing valves

d) Directional Control valves

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Define actuators. Explain the construction and types of linear actuators. (CO4)

Q.24 What is the function of control valve? Explain different types of control valves. (CO3)

Q.25 Explain the sequencing operation of two hydraulic cylinders using pressure based sequencing valve. (CO5)

Q.4 Which one of the following is a type of actuator in a hydraulic system? (CO4)

a) Pump b) Valve

c) Strainer d) Cylinder

Q.5 The compressed air flows to the actuator through __ (CO4)

a) Pipes and valves b) Shafts

c) Motors d) Flow control valve

Q.6 In which type of system does power transmission takes place through compressed air? (CO5)

a) Fluid power system b) Hydraulic system

c) Pneumatic system d) Stepper motors

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define industrial prime mover. (CO1)

Q.8 Write the S.I unit of Energy? (CO1)

Q.9 Radial and axial pumps are the type of_____ Pumps. (CO2)

Q.10 Define control valve. (CO3)

Q.11 What is the primary purpose of actuators? (CO4)

Q.12 Define mechanical seal. (CO4)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 What Define the following parameters: (CO1)

Mass, Pressure, Flow, Power and Torque

Q.14 Explain the general Gas law and write its equation. (CO1)

Q.15 Explain the working fluid power supplies and explain the function of its one component. (CO2)

Q.16 Explain the working of rotary valve. (CO2)

Q.17 List different types of special valves. (CO3)

Q.18 Write short note on types of working fluids? (CO2)

Q.19 Explain the working of air compressor. (CO2)

Q.20 Explain the working of flow control valve. (CO3)

Q.21 Write the function and application of Shuttle & Quick-exhaust valve. (CO3)

Q.22 What do you mean by directional control of hydraulic cylinder? (CO5)