

- Q.21 Differentiate between a piston compressor and a screw compressor. (CO2)
- Q.22 Explain different types of seals for preventing internal and external leakage in cylinders? (CO4)

#### SECTION-D

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

- Q.23 Discuss the cylinder mounting methods used for actuators with diagram. (CO4)
- Q.24 Design a fluid power circuit for directional control of a single acting pneumatic cylinder using push button operated valves. (CO5)
- Q.25 Discuss the types of hydraulic pumps used in hydraulic power supplies. Explain any one with neat sketch. (CO2)

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**4th Sem.**  
**Branch : Automation & Robotics**  
**Sub. Fluid Power Systems**

Time : 3 Hrs.

M.M. : 60

#### SECTION-A

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

- Q.1 Which of the following is a linear actuator? (CO4)
- a) Gear Pump                      b) Cylinder
- c) Rotary valve                      d) Pressure Regulator
- Q.2 Hydraulic systems use which of the following as working fluid? (CO2)
- A) Water                      b) Air
- c) Oil                      d) Gas
- Q.3 Which law states that pressure applied to a confined fluid is transmitted undiminished in all directions? (CO1)
- a) Boyle's Law                      b) Pascal's Law
- c) Newton's Law                      d) Ohm's Law

- Q.4 The purpose of a directional control valve is to: (CO3)
- Control fluid flow direction
  - Control temperature
  - Lubricate moving parts
  - Filter the fluid
- Q.5 Pneumatic systems commonly use which type of air compressor? (CO2)
- Gear
  - Centrifugal
  - Piston
  - Vane
- Q.6 A cylinder used to extend and retract is called: (CO4)
- Single acting
  - Double acting
  - Telescopic
  - Cushioning

### SECTION-B

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

- Q.7 Fluid power systems use \_\_\_\_\_ fluids to transmit power. (CO1)
- Q.8 A poppet valve is used for \_\_\_\_\_. (CO3)
- Q.9 The unit of power is \_\_\_\_\_. (CO1)

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- Q.10 The symbol for a 2 way 2-position valve is \_\_\_\_\_. (CO3)
- Q.11 Air dryers are used in pneumatic systems to remove \_\_\_\_\_ from compressed air. (CO2)
- Q.12 Define starting torque. (CO4)

### SECTION-C

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

- Q.13 What are the types of industrial prime movers? (CO1)
- Q.14 Describe the components of a pneumatic power supply. (CO2)
- Q.15 What are the applications of fluid power systems? (CO1)
- Q.16 Explain the sequencing operation of two pneumatic cylinders using roller operated valves. (CO5)
- Q.17 Describe the components of a Pneumatic power supply. (CO2)
- Q.18 What are the types of control valves? Explain check valve with neat sketch. (CO3)
- Q.19 How does a meter-out circuit function in controlling the speed of a hydraulic cylinder? (CO5)
- Q.20 Enlist the properties of a working fluids used in hydraulic systems? (CO2)

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