



# 17552

**21718**

**3 Hours / 100 Marks**

Seat No.

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**Instructions :** (1) *All questions are compulsory.*  
(2) *Figures to the **right** indicate **full** marks.*

**Marks**

**1. Attempt any five of the following :**

**20**

- State the properties of Fluid (any 4).
- Write the advantages of Hydraulics (any 4).
- Define i) laminar flow ii) turbulent flow.
- List the types of reservoir and state its function.
- State the functions of direction control valve.
- Explain the working of external gear pump with neat labelled sketch.
- Describe the working of FRL unit with neat sketch.

**2. Attempt any four of the following :**

**16**

- Classify fluid on the basis of viscosity.
- State Bernoulli's theorem and give its two application.
- List the different Hydraulics circuit elements. Write the function of any two.
- Draw a neat labelled sketch of gate type flow control valve.
- Write the function of seal and list its type.
- With neat labelled sketch explain the working of single acting cylinder.

**3. Attempt any four of the following :**

**16**

- Draw a neat sketch of four way direction control valve with symbol.
- Describe the working of accumulator with neat sketch.
- List the type of filter and explain any one.
- Explain the working of gear type Hydraulic motor.
- Compare axial piston pump and radial piston pump.
- State Pascal law and explain how Pascal law is utilized in hydraulic system.

**P.T.O.**



4. Attempt **any four** of the following :

- a) Describe the power transmission system in hydraulics.
- b) Explain hydraulic drive and write its four advantages.
- c) Describe the construction and working of hydraulic axial piston pump.
- d) Explain basic pneumatic circuit used in blow moulding machine.
- e) Compare pressure relief valve and sequence valve.
- f) Draw a neat sketch of pressure reducing valve and explain its working.

5. Attempt **any four** of the following :

16

- a) Describe the working of vane pump with neat sketch.
- b) Draw a neat sketch of lobe type gear pump and explain its working.
- c) Draw a neat labelled sketch of piston type hydraulic motor and explain its working.
- d) Write the maintenance process of pipe fitting.
- e) Explain the working of limit switch with suitable example.
- f) Describe the construction and working of rotary type pneumatic actuator with neat sketch.

6. Attempt **any four** of the following :

16

- a) List the pneumatic circuit element and explain any one in brief.
  - b) Draw simple pneumatic circuit using linear and rotary actuator.
  - c) Explain working of proximity switch.
  - d) Write characteristics of variable displacement pump.
  - e) Explain construction and working of vane type hydraulic motor.
  - f) Classify pumps used in hydraulic system.
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