

# 22650

**22223**

**3 Hours / 70 Marks**

Seat No. 

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- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following: **10****
- a) Define Viscosity.
  - b) State pascal's law
  - c) State function of piezo meter tube.
  - d) State function of hydraulic cylinders.
  - e) Enlist the application of pneumatic actuators (any Two)
  - f) List application of meter in circuit (any Two)
  - g) Draw the symbol for
    - i) FRL unit
    - ii) 3/2 DCV

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State Bernoulli's theorem and write its applications.
  - b) Explain alongwith suitable example any four types of fluid flow.
  - c) Enlist types of casing and explain any one type of casing used in centrifugal pumps.
  - d) Explain the term priming. Give its necessity in centrifugal pump.
- 3. Attempt any THREE of the following:** **12**
- a) Explain Bourdon's tube pressure gauge with neat sketch.
  - b) Explain with sketch the working principle of hydraulic crane.
  - c) Explain working of vane pump with neat sketch.
  - d) Compare gear pump with swash plate pump on basis of
    - i) Construction
    - ii) Pressure
    - iii) Speed
    - iv) Application
- 4. Attempt any THREE of the following:** **12**
- a) Give the classification of control valves.
  - b) Explain working of directly operated pressure relief valve with neat sketch.
  - c) Explain the construction of needle valve with neat sketch.
  - d) Explain Rotary spool valve with neat sketch.
  - e) Explain hydraulic telescopic cylinder with neat sketch.

- 5. Attempt any TWO of the following: 12**
- a) Explain construction and working of submersible pump with neat sketch.
  - b) Explain flexible hose. State its material and applications.
  - c) Differentiate between filter and strainer. (Four points) and state any two application of it.
- 6. Attempt any TWO of the following: 12**
- a) Compare hydraulic and pneumatic circuits (Six points)
  - b) Explain hydraulic milling machine circuit with neat sketch.
  - c) Sketch and describe hydro-pneumatic brake booster of truck/bus circuit.
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