

# 22650

**12425**

**03 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 answer 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**

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|---|-----------|
| <b>1. Attempt any <u>FIVE</u> of the following:</b>   | <b>10</b> |
| <ul style="list-style-type: none"><li>a) Define Viscosity.</li><li>b) State Pascal's law.</li><li>c) Classify pressure gauges.</li><li>d) Draw the symbols for –<ul style="list-style-type: none"><li>i) Telescopic hydraulic cylinder</li><li>ii) Single acting hydraulic cylinder.</li></ul></li><li>e) Enlist the valves used for hydraulic systems.</li><li>f) Draw a neat sketch of meter out circuit.</li><li>g) Enlist of any two types maintenance in hydraulic and pneumatic circuits.</li></ul> |           |

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain with neat sketch construction and working of orifice meter.
  - b) Explain types of casing used in centrifugal pump.
  - c) Explain with neat sketch working of hydraulic jack.
  - d) Explain telescopic cylinder with neat sketch.
- 3. Attempt any THREE of the following:** **12**
- a) Differentiate laminar flow and turbulent flow.
  - b) Write selection criteria for centrifugal pump.
  - c) Draw the symbolic for –
    - i) Uni-directional air motor
    - ii) Bi-directional air motor
    - iii) Uni-directional hydraulic motor
    - iv) Bi-directional hydraulic motor.
  - d) Differentiate between filters and strainers.
- 4. Attempt any THREE of the following:** **12**
- a) State law of continuity and its applications.
  - b) Explain function of FRI unit with combines symbol of FRL.
  - c) Classify filters and state their applications.
  - d) Draw the symbols of the following:
    - i) Flow control valve with check valve
    - ii) 4/3 direction control valve.
  - e) Compare hydraulic and pneumatic circuits (Any four points).

**5. Attempt any TWO of the following: 12**

- a) Compare reciprocating pump and centrifugal pump. (Six points)
- b) Sketch and explain working of sequencing valve with symbol.
- c) Sketch and describe hydro-pneumatic rams.

**6. Attempt any TWO of the following: 12**

- a) Explain retail piston pump with neat sketch.
  - b) Sketch and explain working of pressure control valve with symbol.
  - c) Draw pneumatic circuit of grinder and explain its working with symbol.
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