

312332

24225

03 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- 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 fluid and state its types.
 - b) List merits of hydraulic system.
 - c) State different types of pumps used in hydraulic system.
 - d) List applications of pneumatic system.
 - e) Define specific weight. State it's unit.
 - f) Define specific gravity. State it's unit.
 - g) State different types of actuators.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain Pascal's Principle in hydraulic system.
 - b) Compare compressible fluid and incompressible fluid.
 - c) Compare hydraulic and Pneumatic system.
 - d) Explain working of quick exhaust valve with sketch.
- 3. Attempt any THREE of the following:** **12**
- a) Explain the working of Quick Exhaust valve.
 - b) Write merits and demerits of Pneumatic system.
 - c) Explain the construction of reciprocating pump with sketch.
 - d) Select suitable horizontal actuator to carry load in forward stroke while free return in opposite direction. Explain it's working.
- 4. Attempt any THREE of the following:** **12**
- a) Draw symbol of:
 - i) Fixed displacement Unidirectional air compressor.
 - ii) Fixed displacement bidirectional air compressor.
 - iii) Variable displacement Unidirectional air compressor.
 - iv) Variable displacement bidirectional air compressor.
 - b) Explain working of rotary lobe compressor with sketch.
 - c) Describe the working of external gear pump with sketch.
 - d) Explain with sketch construction of oil reservoir.
 - e) Explain function of FRL unit with it's sketch and symbol.

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

- a) Select suitable control valve which actuate the second actuator only after reaching a set pressure in first actuator. Explain with sketch.
- b) Explain working of direct operated pressure relief valve with sketch.
- c) Explain with neat sketch open and closed center positions of direction control valve.

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

- a) One polymer processing machine is to be operated with two valves. Select suitable valve to operate machine either by V1 or V2 valve. Explain with sketch working of valve selected.
 - b) Select suitable rotary type direction control valve to start or stop the flow of gas/liquid. Explain selected valve with sketch.
 - c) Explain with sketch general layout of hydraulic system.
-