

312332

12425

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) State the governing law used in hydraulic system.
 - b) State any two advantages of hydraulic system.
 - c) State any four types of pumps used in hydraulic system.
 - d) Write any two applications of Pneumatic system.
 - e) Define specific gravity, write its unit.
 - f) Define specific weight, write its unit.
 - g) State four types of actuators used in hydraulic system.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain Pascal's principle used in hydraulic system with sketch.
 - 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 construction and working of 'AND' type logic control valve used in pneumatic system with sketch.
 - b) Explain with sketch general layout of pneumatic system which used in plastic processing machines.
 - c) Explain with sketch construction and working of lobe compressor.
 - d) Explain with sketch construction and working of single acting cylinder which carries load in forward direction while returns with spring force.
- 4. Attempt any THREE of the following:** **12**
- a) Draw symbol of
 - i) Fixed displacement unidirectional air motor
 - ii) Fixed displacement bidirectional air motor
 - iii) Variable displacement unidirectional air compressor
 - iv) Variable displacement bidirectional air compressor
 - b) Explain with sketch the construction and working of reciprocating pump.
 - c) Explain with sketch working of gear pump.
 - d) Explain construction and working of 'OR' type logic control valve used in pneumatic system with sketch.
 - e) Explain with sketch construction of oil storage reservoir used in hydraulic system.

- 5. Attempt any TWO of the following:** **12**
- a) Select suitable pressure control valve to carry out sequencing of two actuator operations. Explain working of valve with sketch.
 - b) Explain working of simple pressure relief valve with sketch.
 - c) Explain with neat sketch meter - in speed control of actuator.
- 6. Attempt any TWO of the following:** **12**
- a) Explain combined unit for filtering, regulating and lubricating compressed air in pneumatic circuit. Justify your answer with sketch and symbol.
 - b) Select suitable speed control circuit for negative load. Explain selected circuit with sketch.
 - c) Explain with sketch general layout of hydraulic system.
-