

22349

21819

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) 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 merits of hydraulic systems.
 - b) Classify pressure control valves used in hydraulic circuits.
 - c) List the general faults observed during maintenance of hydraulic circuit.
 - d) Explain various types of pipes used in pneumatic circuit.
 - e) Draw symbol for:
 - (i) Air source
 - (ii) 5/3 D.C valve.
 - f) Sketch Time Delay circuit used in Pneumatics.
 - g) Explain the need of hydropneumatics.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Give classification of D.C valves used in hydraulic circuits.
 - b) Sketch and explain different mounting methods for hydraulic cylinders.
 - c) Sketch and explain meter- out circuit.
 - d) Sketch and explain unloading circuit.
- 3. Attempt any THREE of the following:** **12**
- a) State types of direction control valves used in pneumatic circuits and explain different valve actuation methods.
 - b) List faults and Remedies for pneumatic systems.
 - c) Sketch and explain circuit for blow moulding machine.
 - d) Design hydropneumatic circuit for plastic processing application.
- 4. Attempt any THREE of the following:** **12**
- a) Sketch and explain position based sequencing circuit.
 - b) Sketch and explain hydropneumatic circuit for any one application.
 - c) State application of counter balance valve.
 - d) Describe the merits and limitation of pneumatic systems used in plastic industries.
 - e) Sketch and explain Regenerative circuit.

- 5. Attempt any TWO of the following:** **12**
- a) Sketch and explain pressure dependent sequencing circuit.
 - b) List any six faults and remedies for pneumatic system.
 - c) Sketch and explain circuit for compression moulding machine.
- 6. Attempt any TWO of the following:** **12**
- a) Explain with sketch general layout of hydraulic system used in plastic industries.
 - b) Select pump for plastic processing machine for discharge 900 rpm, overall efficiency 96% speed 300 rpm and justify your answer with sketch.
 - c) Select suitable hydraulic circuit for injection moulding machine. Justify your answer with sketch.
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