

22386

22232

3 Hours / 70 Marks

Seat No.

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

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Attempt **All** questions including Question No. **1** which is compulsory.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Solve any FIVE of the following :

5 × 2 = 10

- (a) Enlist various components used in Pneumatic system.
- (b) Write advantages and disadvantages of Hydraulic system.
- (c) Define Pump, classify various type of positive pump.
- (d) Write application of single acting Actuator.
- (e) Draw a symbol of 4/2 Direction Control Valve. (DCV)
- (f) Write the function of FRL units.
- (g) State any two significances of double acting air cylinder.

2. Solve any FOUR of the following :

4 × 3 = 12

- (a) Differentiate between Hydraulics and Pneumatics system.
- (b) Draw General layout of Hydraulic system use in Plastic Industry for Injection moulding.
- (c) Identify any three faults occurred in pump. Write causes & remedies of it.
- (d) With neat sketch explain 2/2 Direction Control Valve.
- (e) Write selection criteria of Filter (Minimum 3 points).



- 3. Solve any FOUR of the following :** **4 × 3 = 12**
- (a) Explain the working of Internal gear pump with sketch.
 - (b) Explain any three oil properties used in Hydraulics system.
 - (c) Define valve, classify valve, write the functions of valve.
 - (d) Write advantages, disadvantages and applications of 'METER IN CIRCUIT'.
 - (e) Using 3/2 DCV draw 'Meter out' circuit, give suitable name of components.
- 4. Solve any THREE of the following :** **3 × 4 = 12**
- (a) Explain working of pressure sequence valve with neat sketch.
 - (b) Explain with neat sketch Non-compensated flow control valve.
 - (c) Classify various type of compressor, write selection criteria of compressor.
 - (d) State any four type of accessories used in Pneumatic system along with their function.
 - (e) Explain working of single acting cylinder with neat sketch.
- 5. Solve any THREE of the following :** **3 × 4 = 12**
- (a) Write construction, working of vane pump. Draw suitable diagram of vane pump.
 - (b) Write the functions of safety valve. Which valve comes in category of safety valve ? Justify with valid reason.
 - (c) With neat sketch explain 3/2 Direction Control Valve. Show Advance and Retrieve condition of valve.
 - (d) Write construction & working of lubricator. Draw suitable diagram with labelled.
 - (e) Explain Reciprocating compressor in details. Draw suitable diagram.
- 6. Solve any TWO of the following :** **2 × 6 = 12**
- (a) Prepare a sequential circuit for various operation carried out in plastics processing Industry. Explain in details.
 - (b) Explain the speed control circuit for hydraulic motor.
 - (c) In plastic Industry, we have to manufacture plastic bottles using blow moulding. Use various actuators used in blow moulding, also prepare circuit using various sequence of operation & DCV.
-