

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – WINTER 2013****Subject Code: 142302****Date: 23-12-2013****Subject Name: Plastic Industrial Hydraulics and Pneumatics****Time: 02:30 pm to 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Which are the advantages and disadvantages of hydraulic systems? **07**
 (b) Define Directional control valve. Explain construction and working of Two-way valve with neat sketch. **07**

- Q.2** (a) Compare: Hydraulic and Pneumatic **07**
 (b) Which are the basic methods to apply flow control valves to control actuator speed? Explain any two with neat sketch. **07**

OR

- (b) State Pascal's law. **07**
 Solve: In a hydraulic mechanism 100 kg. Force is applied on a pump side whose piston diameter is 10 cm. If jack side piston diameter is 40 cm, calculate the force developed on the top of the jack. Also calculate the movement of jack piston if jack piston if pump plunger moves 500 mm.

- Q.3** (a) Explain about Packing and seals. **07**
 (b) Draw and Explain Deceleration circuit. **07**

OR

- Q.3** (a) List and explain basic properties are required of good hydraulic fluid. **07**
 (b) Give classification of Air Compressor. Explain working of Single Stage Air Compressor with neat sketch. **07**

- Q.4** (a) Which are the basic methods to apply flow control valves to control actuator speed? Explain any two with neat sketch. **07**
 (b) Give the classification of pressure control valve. Explain Balanced Piston type with neat sketch. **07**

OR

- Q.4** (a) Which are the hydraulic power transmission lines in the injection molding? Explain any two in detail. **07**

- Q.4** (b) Draw Symbols: (1) Cylinder, Double acting (2) temperature gauge (3) Filter (4) Pressure Switch (5) Electric Motor (6) Accumulator, Gas charged (7) Check valve **07**

- Q.5** (a) Differentiate: Filter and Strainer. Explain about maintenance of Hydraulic oil. **07**
 (b) Classify Hydraulic Pumps and explain about Gear pumps. **07**

OR

- Q.5** (a) What is an accumulator? Explain about different types and Applications. **07**
 (b) Which are the types of check valves? Explain In-Line Check Valve with neat sketch. **07**
