

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-IV Examination-Nov/Dec-2011****Subject code: 142302****Date: 28/11/2011****Subject Name: Plastics Industrial Hydraulics and Pneumatics****Time: 02.30 pm -5.00 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)** Define & Explain in brief Pascal's Law. **07**
Solve: In a hydraulic jack 100 kg. Force is applied on a pump side area of 20 cm². If jack side area is 200 cm², calculate the force developed on the top of the jack. Also calculate the movement of jack piston if jack piston if pump plunger moves 200 mm.
- (b)** List Advantages and Disadvantages of Hydraulics System. **07**
- Q.2 (a)** Define Direction Control Valve. Explain Pilot Operated Check Valve with neat sketch. **07**
- (b)** Explain in brief: Packing & Seals used in Hydraulics System. **07**
- OR**
- (b)** Compare: Hydraulics System with Pneumatics System **07**
- Q.3 (a)** Explain Four-Way Valve with neat sketch. **07**
- (b)** Explain In-Line Check Valve with neat sketch. **07**
- OR**
- Q.3 (a)** Explain Balanced Piston Type Relief Valve with neat sketch. **07**
- (b)** Explain Any type of Flow Control Valve with neat sketch. **07**
- Q.4 (a)** What is the purpose of Pressure Intensifier? **07**
Explain Single Stage Pressure Intensifier.
- (b)** List Different Types of Accumulators. Explain Any Two. **07**
- OR**
- Q.4 (a)** Draw Symbols: (1) Line, Passing (2) Cylinder, Double Acting (3) Filter (4) Pressure Switch (5) Electric Motor (6) Accumulator, Gas charged (7) Check valve **07**
- (b)** Give the Classification of Pump. Explain External Gear Pump with neat sketch. **07**
- Q.5 (a)** What is the Function of Air Compressor? Give classification of Air Compressor. Draw Pneumatics Circuit for Any one of the Plastics Processing Machine. **07**
- (b)** Explain working of Single Stage Air Compressor with neat sketch. **07**
- OR**
- Q.5 (a)** Draw & Explain Deceleration Circuit. **07**
- (b)** Draw Clam Control Circuit. **07**
