

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER 2013****Subject Code: 142302****Date: 12-06-2013****Subject Name: Plastic Industrial Hydraulics and Pneumatics****Time: 10:30am – 01:00pm****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) What are the functions of a Reservoir? List out the components of a Reservoir? Explain about any two. **07**

(b) What is the purpose of Heat Exchanger? What is the difference between Static & dynamic seal? Why are backup rings used with O-rings? **07**

Q.2 (a) Define displacement of a pump? Classify Pumps & Explain about Balanced Vane pump. **07**

(b) Explain the working of external gear motor with the help of a suitable sketch. **07**

OR

(b) What is pressure compensation? Explain about By-pass Type pressure compensated flow control. **07**

Q.3 (a) Explain about the construction and operation of Pilot operated sequence valve. **07**

(b) What are the different methods to actuate direction control valves? Explain about any one. **07**

OR

Q.3 (a) Define Accumulator and Pressure Intensifier. What are the applications of Accumulators? Explain about any one. **07**

(b) Define Servo Valve. How the mechanical type servo valve works? **07**

Q.4 (a) What are the different parts of an air compressor? Explain about the working of piston compressors. **07**

(b) What are the applications of Pneumatics? **07**

OR

Q.4 (a) Where to locate filters in a Hydraulic system & Why? **07**

(b) What is the principle of Hydraulic Jack? Explain with a suitable example. **07**

Q.5 (a) Draw the symbols for the following Hydraulic Elements: **07**

1) Hydraulic line, 2) Hydraulic Flow, 3) Pneumatic Flow, 4) Reservoir Pressurized, 5) Spring, 6) Push Button, 7) Electric Motor.

(b) Explain about any two requirements of Hydraulic oil. **07**

OR

Q.5 (a) Draw the symbols for the following Hydraulic Elements: **07**

1) Double End Hydraulic cylinder, 2) Pressure Reducing Valve, 3) Sequence Valve 4) Piston Pump with Drain.

(b) Explain about working Principle & construction of FRL Unit. **07**
