

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. SEMESTER– V , EXAMINATION SUMMER – 2015****Subject Code: 153401****Date:02/05/2015****Subject Name: Applied Hydraulics & Pneumatics****Time:2.30PM-5.00PM****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) Classify hydraulic motors. Explain construction and working of any one with neat sketch. **07**
(b) Describe various selection criteria for pneumatic components. **07**
- Q.2** (a) Mention the required properties of good hydraulic fluid. **07**
(b) What are the fluidic devices? Explain with simple circuit application. **07**
- OR**
- (b) How PLC is used in fluid power control? Explain with suitable application. **07**
- Q.3** (a) Describe briefly about external gear pumps and internal gear pumps **07**
(b) What is meant by 4/2 DC valve? State the art of actuation of direction? Explain with example. **07**
- OR**
- Q.3** (a) What are the applications of Intensifier? Explain with any one intensifier circuit. **07**
(b) Explain quick exhaust valves in detail with sketch diagram. **07**
- Q.4** (a) (i) What are the losses in pipe, valves and fittings? Explain briefly Which equation is suitable to get it solve. **04**
(ii)What are the important conclusion resulting from Reynolds's experiment? **03**
(b) (i)How does an unloading valve differ from a sequence valve in mechanical construction? **04**
(ii)Explain how the electrical control solenoid valve operates. **03**
- OR**
- Q.4** (a) (i) Explain the functions of – **04**
1. Lubricator Unit
2. Air control valves
(ii)How do pneumatic actuators differ from hydraulic actuators? **03**
(b) Explain and draw Penumo-hydraulic circuit for an application. **07**
- Q.5** (a) What do you mean by Electro Hydraulic Pneumatic logic circuits? Explain with any one circuit. **07**
(b) With neat sketch explain tandem cylinders and cylinder cushioning. **07**
- OR**
- Q.5** (a) Briefly explain air pressure regulator with their functions, construction and operation using suitable figures. **07**
(b) With a neat circuit explain sequencing of fail safe circuit. **07**
