

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V • EXAMINATION – WINTER • 2014****Subject Code: 153401****Date: 26-11-2014****Subject Name: Applied Hydraulics and Pnuematics****Time: 10.30 am - 01.00 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) Mention the required properties of good hydraulic fluid **07**  
(b) With a neat sketch explain the hydraulic and pneumatic fluid power **07**
- Q.2** (a) Describe briefly about external gear pumps and internal gear pumps **07**  
(b) Write short notes on double acting cylinders **07**
- OR**
- (b) With neat sketch explain tandem cylinders and cylinder cushioning **07**
- Q.3** (a) Design and explain the working of a regenerative circuit **07**  
(b) Describe sequencing circuit with a neat figure **07**
- OR**
- Q.3** (a) How a pilot operated direction control valve function? Explain with a neat diagram **07**  
(b) Discuss with a diagram the working of non return valve. **07**
- Q.4** (a) Briefly explain air pressure regulator with their functions, construction and operation using suitable figures **07**  
(b) Write short notes on shuttle valves and quick exhaust valves **07**
- OR**
- Q.4** (a) Explain two way valve and three way valve with suitable figures **07**  
(b) With a neat circuit explain sequencing of fail safe circuit **07**
- Q.5** (a) Explain the construction and working principle of hydro mechanical servo valves with neat diagram **07**  
(b) What are proportional control valves? Write the types of proportional control valves. **07**
- OR**
- Q.5** (a) Describe various selection criteria for pneumatic components **07**  
(b) How PLC is used in fluid power control? Explain with suitable application. **07**

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