

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering - SEMESTER – IV • EXAMINATION – WINTER 2012

Subject code: 342302**Date: 27/12/2012****Subject Name: Hydraulics and Pneumatics****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered to be Authentic.

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|------------|---|-----------|
| Q.1 | (a) Write the advantages of hydraulic system. | 07 |
| | (b) State Pascal's law. Explain the principle of hydraulic jack. | 07 |
| Q.2 | (a) Draw hydraulic symbol for (1) Filter (2) Check valve (3) Pressure relief valve (4) Variable displacement unidirectional pump (5) fixed displacement unidirectional motor (6) Unloading valve (7) sequence valve | 07 |
| | (b) List types of connectors used in hydraulic system. Explain any one of them. | 07 |
| OR | | |
| Q.3 | (b) Explain basic properties required for good hydraulic oil. | 07 |
| | (a) List various directional control valves and explain two way valve with neat sketch. | 07 |
| | (b) List various pressure control valves and explain any one with neat sketch. | 07 |
| OR | | |
| Q.3 | (a) Explain working of single stage pressure intensifier with neat sketch. | 07 |
| | (b) List types of flow control valve. Explain pressure compensated flow control valve with neat sketch. | 07 |
| Q.4 | (a) State various pump problems and their remedies. | 07 |
| | (b) Write a brief note on accumulators. | 07 |
| OR | | |
| Q.4 | (a) Describe construction and working of vane pump. | 07 |
| | (b) Draw and explain deceleration circuit. | 07 |
| Q.5 | (a) Draw and explain clamp control circuit. | 07 |
| | (b) Draw and explain prefill circuit. | 07 |
| OR | | |
| Q.5 | (a) Compare hydraulic and pneumatic system. | 07 |
| | (b) List components of pneumatic system and explain any one of them. | 07 |
