

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – IV • EXAMINATION – SUMMER- 2017

Subject Code: 3342303

Date: 03- 05- 2017

Subject Name: Hydraulic and Pneumatic Systems

Time: 10:30 AM TO 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.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. Give definition of hydraulics.
  2. State Pascal's law.
  3. List the physical components of hydraulic system.
  4. Give the name of various directional control valves.
  5. Write the function of flow control valves used in hydraulic system.
  6. Write the function of accumulator.
  7. Give the basic principle of pump.
  8. List the name of hydraulic circuits used in injection molding machine.
  9. Draw in line check valve in open position.
  10. List the fundamental components of pneumatic system.
- Q.2** (a) Discuss ideal characteristics of hydraulic oil. **07**
- OR
- (a) Draw graphical symbols of lever, solenoid, servomotor, pressure relief, filter, variable flow and pump-motor used in hydraulic system. **07**
- (b) List different methods of actuating valves for hydraulic system. **03**
- OR
- (b) Write short note on spring loaded accumulator. **03**
- (c) Give the name of various packing used in hydraulic system and explain any one. **04**
- OR
- (c) Explain about filters used in hydraulic system. **04**
- Q.3** (a) Describe function of two way valve with the help of figure. **07**
- OR
- (a) Draw the figure of pressure reducing valve and label all parts. **07**
- (b) Compare gear pump and vane pump. **03**
- OR
- (b) Explain single acting air compressor. **03**
- (c) Explain displacement and speed with respect to hydraulic motor. **04**
- OR
- (c) Compare hydraulic system and pneumatic system. **04**
- Q.4** (a) Draw and explain oil filtration circuit. **07**
- OR
- (a) Draw the hi-low pump circuit. **07**
- (b) Describe component parts of pneumatic system. **07**
- Q.5** (a) Draw and explain pressure compensated flow control valve. **07**
- (b) Write the advantages of hydraulic system. **07**

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