

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2171912****Date: 19/11/2018****Subject Name: Oil Hydraulics & Pneumatics****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.

| | | MARKS |
|-----|---|-------|
| Q.1 | (a) Draw the general layout of hydraulic system. Explain the function of each component. | 03 |
| | (b) Define Control Valve. List the different types of control valves. | 04 |
| | (c) Give the classification of Pumps. Sketch & Explain working of Rotary Vane type of pump. | 07 |
| Q.2 | (a) Write application of Hydraulic system & Pneumatic system. | 03 |
| | (b) Sketch & Explain the working of Ge- rotor pump with neat sketch. | 04 |
| | (c) Give ISO/ANSI symbol of following. | 07 |
| | 1. Hydraulic motor | |
| | 2. Single acting cylinder with spring return actuator | |
| | 3. 3/2 DCV | |
| | 4. Pressure relief Valve | |
| | 5. Variable flow control valve | |
| | 6. Spring loaded accumulator | |
| | 7. Air filter | |
| | OR | |
| | (c) Explain working of axial in line swash plate pump with neat sketch. | 07 |
| Q.3 | (a) Draw speed controlled actuator, Meter- out circuits for DAC for extension. | 03 |
| | (b) Draw general layout of pneumatic system & write function of each components. | 04 |
| | (c) What is the function of pressure Reducing Valve? sketch & explain with neat sketch the working of pressure reducing valve | 07 |
| | OR | |
| Q.3 | (a) Sketch & explain Counter Balance valve construction & its working. | 03 |
| | (b) List the Power loss in flow control circuits & explain in detail. | 04 |
| | (c) Explain One Industrial application of hydraulic circuit with neat sketch. | 07 |
| Q.4 | (a) Explain 4/3 sliding spool direction control valve working. | 03 |
| | (b) Write a note on thermocouple type temperature sensor | 04 |
| | (c) Bleed off Circuits – sketch & explain its working. | 07 |
| | OR | |
| Q.4 | (a) List the electric devices used in the control of fluid power system. | 03 |
| | (b) What do you mean Automation? Give classification of Automation. | 04 |
| | (c) Sketch & explain Pneumatic Circuit using Quick Exhaust valve. | 07 |
| Q.5 | (a) What is an actuator? Draw hydraulic system operating double acting actuator with 3/2 DCV | 03 |

- (b) Describe Working of twin pressure valve with neat sketch & draw its symbol **04**
(c) Draw Symbol of filter & explain the working of by-pass type filter **07**

OR

- Q.5** (a) Explain Cascading Method for sequencing. **03**
(b) If diameter of piston is 60 mm, diameter of piston rod is 10 mm, & air pressure is 100 N/mm^2 , what will be the force in advance stroke & return stroke. **04**
(c) Draw Pneumatic circuit for operating DAC by 4/3 DCV. **07**

www.FirstRanker.com