

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2171912

Date:21/11/2016

Subject Name:Oil Hydraulics & Pneumatics(Department Elective - I)

Time:10.30 AM to 1.00 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) Construction and working of an internal gear pump. **07**
(b) Explain open loop closed circuits and closed loop closed circuits for hydrostatic systems. **07**
- Q.2** (a) Construction and working of time delay valve of pneumatic systems. **07**
(b) A single acting cylinder is to be operated from two different sources A and B such that its forward motion can be actuated from either of the two locations. Draw and explain a circuit diagram. **07**
- OR**
- (b) Explain memory circuit and speed control of the cylinder for pneumatic systems. **07**
- Q.3** (a) Explain control of a bi-directional motor by 4/2 way valve. **07**
(b) Cite the classification of check valves and explain the function of pilot-operated check valve, giving the necessary drawing. **07**
- OR**
- Q.3** (a) State the different ways of control of DCVs. **07**
(b) Explain the control of a surface grinder table by pilot-operated valve with detail drawing. **07**
- Q.4** (a) Basic Components of a Hydraulic System **07**
(b) What is a by-pass filter? State its advantages and disadvantages. **07**
- OR**
- Q.4** (a) List the six basic components used in a pneumatic system. **07**
(b) Draw the symbols of Pressure control valves used in hydraulic systems. **07**
- Q.5** (a) Differentiate between direct and indirect control. Draw simple hydraulic circuit diagrams of both and explain the differences. **07**
(b) Advantages and disadvantages of High - Water Content Fluid (HWCF). **07**
- OR**
- Q.5** (a) Differentiate between a hydrostatic and hydrodynamic system. **07**
(b) Draw a hydraulic circuit diagram of a hydraulic system having a double acting cylinder which has a rapid approach speed, than slow feed motion and at the end of the stroke the cylinder returns rapidly. **07**
