

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering - SEMESTER-IV • EXAMINATION – SUMMER • 2015****Subject Code: 3342303****Date: 12-05-2015****Subject Name: Hydraulic and Pneumatic Systems****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.
4. English version is considered to be Authentic.

- Q.1** Answer any seven out of ten. **14**
1. Draw hydraulic symbol for 4/3 directional control valve and pump
 2. State Pascal's law and name its one application.
 3. State any four types of hydraulic pump.
 4. State functions of filters and strainers.
 5. State any two advantages of cartridge valves.
 6. State and define any two motor specifications.
 7. State any four components of pneumatic system.
 8. State any two functions of air filter.
 9. Give two advantages of radial piston pump.
 10. State function of check valve. State its types.
- Q.2** (a) State any three disadvantages of hydraulic system. **03**
- OR
- (a) State any three types of connectors and its function. **03**
- (b) Explain the significance of seals in hydraulic system. **03**
- OR
- (b) Draw symbols for any three valves. **03**
- (c) State advantages of hydraulic system. **04**
- OR
- (c) Explain any two characteristics of hydraulic oil. **04**
- (d) Explain any two purposes of hydraulic oil. **04**
- OR
- (d) Explain maintenance procedure of hydraulic oil in brief. **04**
- Q.3** (a) Name any three types of packing and sketch any one. **03**
- OR
- (a) State functions of pressure control valves. **03**
- (b) State function of pressure intensifier. What is the difference between single stage and two stage pressure intensifier? **03**
- OR
- (b) Sketch any one type of check valve. **03**
- (c) Explain any one type of accumulator. **04**
- OR
- (c) State functions of pressure relief valve and pressure reducing valve. State any one application of both the valves. **04**
- (d) Give characteristics of vane pump and state its advantages. **04**
- OR
- (d) State any two pump problems and give remedies for it. **04**

- Q.4** (a) Define any three terms for pump specifications. **03**
OR
(a) Give advantages of gear pump. **03**
(b) Draw deceleration circuit. **04**
OR
(b) Draw oil filtration circuit. **04**
(c) Draw clamp control circuit and label different parts. **07**
- Q.5** (a) Compare hydraulic and pneumatic system. **04**
(b) State function of air compressor and sketch any one. **04**
(c) Sketch intercooler and label different parts. **03**
(d) Explain in brief about air receiver. **03**
