

**SUBJECT CODE NO:- P-362**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**T.E.(Mech.) Examination May/ June 2017**  
**Industrial Hydraulics and Pneumatics**  
**(Revised)**

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Solve any three questions from each section.
  - ii) Assume suitable data wherever form necessary.

**Section- A**

- Q.1 a) Draw a basic pneumatic circuit along with air preparation unit; explain in brief the function of each component in the circuit. 08  
b) What are the different types of hydraulic oils used in the hydraulic systems? What are the oil additives and why they are used? 05
- Q.2 a) What is hydraulic circuit? Why do we use symbols in the circuits? 05  
b) Draw the following symbols. 08  
(1) 4 ways 3 positions, normally off pneumatic D.C. valve, solenoid operated.  
(2) Sequence valve  
(3) Accumulator.  
(4) Quick disconnect coupling with check.
- Q.3 a) What is the difference between a pump and motor used in hydraulic system? List the different types of pumps & motors used in hydraulic system. Give applications of each one. 05  
b) Draw a neat sketch of a gerotor pump and explain the construction and working of the pump. State its salient features. 08
- Q.4 a) With a neat circuit diagram show the compressed air supply system using a heat exchange (air. Cooler and drier) in the system. State the function of the main components. 05  
b) With a neat sketch explain the construction and working of a Lobe pump (compressor) 08
- Q.5 Write short notes on any three 14  
1) General rules for symbols.  
2) Comparison between hydraulic & pneumatic system and mechanical system (drive)  
3) Hydraulic power pack.  
4) Linear and rotary actuators  
5) Cushioning of cylinders

**Section -B**

- Q.6 a) What is the function of pressure control valve? What are the different applications of pressure control valves? Draw symbols of each one & give its application. 08  
b) What are the different types of pipes, hoses and accessories used in the hydraulic circuit? 05
- Q.7 Draw a hydraulic circuit used in a robotic arm using two cylinders (double acting) which are operated together at the same time. For arm movement. Use standard components. Explain its working. 13
- Q.8 Draw a pneumatic circuit used in pneumatic drill using a motor and standard components. The drill is equipped with a reversible rotation arrangement. 13
- Q.9 a) What is the difference between hydraulic system & electro hydraulic systems? Give examples of each of them. 08  
b) What are the sensors and actuators used in electro pneumatic systems? State its function. 05
- Q.10 Write short notes on any three 14  
a) Direction control valves.  
b) Speed control in hydraulic system.  
c) P.L.C. used in electro-hydraulics  
d) Electric valve actuators.  
e) Use of multiple functions & logics in valve operations.