Hydraulics and Pneumatics
VTU CBCS Question Paper Set 2018
Eighth Semester B.E. Degree Examination, June/July 2016
Hydraulics of Pneumatics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

1. a. State Pascal's law and explain its applications. (05 Marks)
   b. Sketch and explain basic components required in a hydraulic power system. (06 Marks)
   c. Explain the important parameters considered while selecting type of pump. (09 Marks)

2. a. Sketch and explain balanced vane motor. (06 Marks)
   b. Explain with sketch working of a gear motor. (06 Marks)
   c. Sketch and explain in-line-piston (swash plate) motor. (08 Marks)

3. a. Draw the symbolic representation of:
   i) Pressure sequence valve
   ii) Four way spring centered three position manually actuated value
   iii) Pressure relief value
   iv) Pressure reducing value.
   b. Sketch and explain unloading valve. (06 Marks)
   c. Explain with sketch working of pressure compensated flow control valve. (06 Marks)

4. a. Sketch and explain hydraulic sequencing circuit. (10 Marks)
   b. Explain with circuit diagram included accumulator as leakage compensator. (10 Marks)

PART - B

5. a. What are the properties of hydraulic fluid? Explain them. (10 Marks)
   b. What are the different materials that are used for seals? Explain. (06 Marks)
   c. Explain: i) Gasket ii) O-Ring. (04 Marks)

6. a. Explain advantages and disadvantages of pneumatic system over hydraulic system. (04 Marks)
   b. Explain rodless cylinder construction and working. (06 Marks)
   c. Explain end cushion arrangement in double acting cylinder with a neat sketch. (10 Marks)

7. a. Sketch and explain five port spool valve. (08 Marks)
   b. Connected to pneumatic system explain with a sketch:
      i) AND
      ii) OR
      iii) NOT. (12 Marks)

8. a. Explain with sketch air filter for pneumatic system. (06 Marks)
   b. Explain steps involved in cascading method of design of a pneumatic system. (08 Marks)
   c. Explain relays used in pneumatic system with a neat sketch. (06 Marks)

* * * * *