

Hydraulics and Pneumatics VTU CBCS Question Paper Set 2018

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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 valve
iii) Pressure relief valve
iv) Pressure reducing valve. (08 Marks)
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)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.