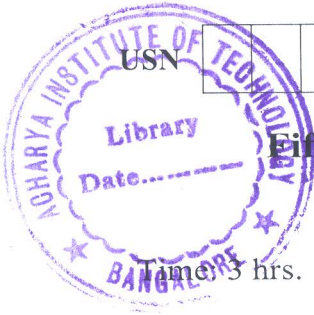


# CBCS SCHEME

15AU554



## Fifth Semester B.E. Degree Examination, July/August 2021 Hydraulics and Pneumatics

Max. Marks: 80

**Note: Answer any FIVE full questions.**

- 1 a. Explain Pascals law with suitable example. (08 Marks)  
b. Classify the pumps and explain gear pumps. (08 Marks)
- 2 a. Explain with neat sketch of single and double acting actuator. (08 Marks)  
b. Explain briefly the following with neat sketch:
  - i) Gravity type
  - ii) Spring type
  - iii) Telescopic
  - iv) Tandem. (08 Marks)
- 3 a. Classify hydraulic and pneumatic valves and explain direct pressure relief valve with neat sketch. (08 Marks)  
b. Classify and explain any two flow control valves. (08 Marks)
- 4 a. Draw reservoir system used in hydraulics and explain functions of reservoir. (08 Marks)  
b. Draw the trouble shooting chart of hydraulics and pneumatics due to fluid flow. (08 Marks)
- 5 a. Explain with neat circuit diagram, meter-in and meter-out circuits. (08 Marks)  
b. What is an accumulator? Explain with neat circuit diagram the use of an accumulator as hydraulic shock observer. (08 Marks)
- 6 a. Explain Dwell position circuit using 4/3 4 way valve. (08 Marks)  
b. Explain with neat sketch of sequencing circuit. (08 Marks)
- 7 a. What is cushioning of cylinders? Why cushioning is necessary? Explain the working typical cushioned cylinder. (08 Marks)  
b. Explain the different operational principle used for the construction of rodless cylinders. (08 Marks)
- 8 a. Differentiate between hydraulic system and pneumatic system. (08 Marks)  
b. Explain construction and working of poppet valve and slide spool valve DCV. (08 Marks)
- 9 a. Explain cascading method with application example of 2 cylinders. (08 Marks)  
b. Explain motion-control diagram with an example. (08 Marks)
- 10 Explain the following:
  - a. Production of compressed air
  - b. Electro-pneumatic control
  - c. Air drier
  - d. Use of relay and contactor. (16 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.