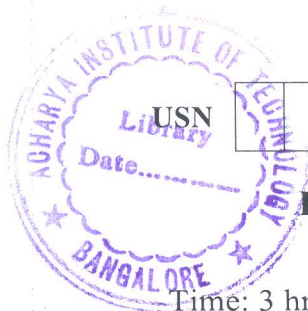


CBCS SCHEME

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

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. With a neat sketch, explain the construction and operation of external gear pump, also bring out the advantages and disadvantages of using it. (10 Marks)
b. Explain the construction and working of the following : (10 Marks)
i) Lobe pump ii) Gerotor pump.
- 2 a. Derive an expression for the theoretical discharge of an air axial piston pump. (10 Marks)
b. Compare and comment the performance of the gear vane and piston pump. (10 Marks)
- 3 a. What is the function of directional control valve? Explain with a neat sketch, working of check valves. (10 Marks)
b. Describe with the help of a neat sketch the construction and operation of shuttle valve. (10 Marks)
- 4 a. What are the desirable properties of hydraulic fluid? Explain briefly. (10 Marks)
b. What is the function of filters? Explain with neat sketches, different types of filters. (10 Marks)
- 5 a. With a neat sketch, explain working principle of Regenerative circuit. (10 Marks)
b. With a sketch explain the following : (10 Marks)
i) Single acting hydraulic cylinder
ii) Double acting hydraulic cylinder.
- 6 a. What is the function of accumulators? Explain with a sketch working principle of diaphragm type accumulator. (10 Marks)
b. Explain with suitable circuits, how an accumulator can be used as (10 Marks)
i) A Leakage compensator ii) An emergency power source.
- 7 a. Write a short note on the following with respect to pneumatic system (10 Marks)
i) Pressure regulator ii) Flow control valve.
b. With a simple sketch, explain the functions and working of basic components required for a pneumatic system. (10 Marks)
- 8 a. Sketch and explain working principle of Quick Exhaust Valve (QEV). (10 Marks)
b. Describe in brief with a neat diagram Flow control valve. (10 Marks)
- 9 a. Define motion control diagram, explain with a neat sketch two cylinder pneumatic circuit and its motion control diagram. (10 Marks)
b. Explain in brief working principle of cascading method and its practice applications. (10 Marks)
- 10 a. Explain with neat block diagram, types of piping layout. (10 Marks)
b. What are types of Air dryer? Explain with a neat diagram of Absorption dryer. (10 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.