CBCS SCHEME

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18SM63

Sixth Semester B.Tech. Degree Examination, June/July 2023
Hydraulics and Pneumatics

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Briefly explain gear pumps and vane pumps with neat sketch. **(10 Marks)**

b. Discuss variable displacement pumps with necessary figures. **(10 Marks)**

OR

2 a. Explain in detail linear hydraulic actuators with detailed sketch. **(10 Marks)**

b. Explain the difference between gear motors and vane motors. **(10 Marks)**

Module-2

3 a. Explain flow control valves with neat sketch. **(10 Marks)**

b. Explain the working principle of pressure control valves with diagram. **(10 Marks)**

OR

4 a. Discuss temperature control and trouble shooting in the maintenance of hydraulic systems. **(10 Marks)**

b. Explain different types of fluids, what are the problems caused by gases in hydraulic fluids. **(10 Marks)**

Module-3

5 a. Explain the control of double acting hydraulic cylinder with neat sketch. **(10 Marks)**

b. Explain pump unloading circuit with diagram. **(10 Marks)**

OR

6 a. Discuss weight loaded accumulator and spring loaded accumulator with neat sketch. **(10 Marks)**

b. Write short notes on:
i) Accumulator as auxiliary power source
ii) Accumulator as shock absorber. **(10 Marks)**

Module-4

7 a. Explain piston type compressor and screw type compressor with neat sketch. **(10 Marks)**

b. Discuss different types of seals and end cushioning with figure. **(10 Marks)**

OR

8 a. Explain poppet valve with neat sketch. **(10 Marks)**

b. Discuss working principle of quick exhaust valve with figures. **(10 Marks)**

Module-5

9 a. Discuss coordinated and sequential motion control with diagrams. **(10 Marks)**

b. Explain cylinder in series and parallel with neat diagram. **(10 Marks)**

OR

10 a. Briefly explain solenoid control of directional valves with sketch. **(10 Marks)**

b. Explain the control circuits for simple single cylinder applications. **(10 Marks)**

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