CBCS SCHEME

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18AU56

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
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. Define hydraulic system. State advantages and limitations of hydraulic system. **(10 Marks)**
b. Explain variable displacement axial piston pump (swash plate) with neat sketch. **(10 Marks)**

OR

2 a. Define and classify actuator. With a neat sketch, explain working of vane type motor. **(10 Marks)**
b. What is the need of lever system? With neat sketch and example, explain three types of lever system. **(10 Marks)**

Module-2

3 a. With a neat sketch, explain pilot operated direction control valve. **(10 Marks)**
b. With a neat sketch, explain working of pressure sequence valve. **(10 Marks)**

OR

4 a. Explain any five properties of a good hydraulic fluid. **(10 Marks)**
b. With a neat sketch, explain Reservoir System. State the functions. **(10 Marks)**

Module-3

5 a. With a neat sketch, explain working of pump unloading circuit. **(10 Marks)**
b. Explain the working of singe and double acting cylinder with suitable circuit. **(10 Marks)**

OR

6 a. Discuss the speed control of hydraulic cylinder using meter out circuit. **(10 Marks)**
b. Define accumulator. Explain the following with neat sketch:
(i) Spring loaded accumulator
(ii) Piston type separator accumulator **(10 Marks)**

Module-4

7 a. Explain the characteristics of compressed air. **(10 Marks)**
b. With a neat sketch and graphical symbol, explain end position cushioning in cylinder. **(10 Marks)**

OR

8 a. Explain the working of 3/2 poppet valve with a neat sketch. **(10 Marks)**
b. Explain the quick exhaust valve with neat sketch and circuit diagram. **(10 Marks)**

Module-5

9 a. With circuit diagram, explain pilot assisted solenoid control DC valve. **(08 Marks)**
b. Explain cascade method of pneumatic circuit design. **(12 Marks)**

OR

10 a. With neat sketch, write a note on: (i) Solenoid (ii) Limit switches **(10 Marks)**
b. Explain the following with neat sketch: (i) Relay (ii) Motion diagram **(10 Marks)**

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