

2101100

MASTER OF VOCATION
Robotics and Automation
Subject: Pneumatics & Hydraulics Control
Subject Code: ME-901
Semester: Third
January 2021
Theory (External): 35 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

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SECTION -A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

- A. What is the working principle of fluid power transmission?
- B. State the purpose of a pump in a hydraulic system.
- C. How is control valve classified?
- D. Define fluidics.
- E. What do you mean by cushioning of fluid power actuators?
- F. List the types of directional control valves.
- G. Draw symbol of a relief valve and reducing valve.
- H. What is the application of counter valve?
- I. Mention any two applications of pneumatics in the engineering fields.
- J. What is the use of quick exhaust valve?

SECTION -B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. Differentiate between hydraulic and pneumatic systems.
2. Explain the working of sequence valve with an example.
3. Explain spring-loaded type accumulator used in hydraulic system.
4. Discuss with the help of a neat diagram a single acting pneumatic actuator along with its applications.
5. Discuss and draw a typical compressed air generation and distribution system.
6. Explain pump unloading circuit.
7. Draw Circuit for:
Controlling speed of pneumatic double acting cylinder
8. What are the types of pneumatic Controllers? Also discuss the advantages and disadvantages of pneumatic controllers.

==END OF PAPER==