

BACHELOR OF VOCATION
Mechatronics
Subject: Hydraulics and Pneumatics
Subject Code: ME-605
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

Roll Number											

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

- A. Discuss the properties of fluid.
- B. Discuss meaning of piping layout.
- C. Define the applications of continuity equation related to industry.
- D. Define the applications of Bernoulli's equation related to manufacturing industries.
- E. Define the function of filters and its applications related to industry.
- F. Discuss the function of coolers and connectors with suitable example and applications.
- G. Discuss the selection criteria of pressure rating with example.
- H. Define Mass flow rate and its applications related to industry.
- I. Define the function of air receivers and its applications related to industry.
- J. Define the function of hydraulic & pneumatic systems and its applications related to manufacturing Industry.

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

1. Drive and explain Pascal's Law with suitable example and industrial applications.
2. Explain the construction, principle and working of Hydraulic pump with neat and clean diagram along with applications related to manufacturing industries.
3. Describe the construction and working of Hydraulic actuator with neat diagram along with industrial applications.
4. Explain the working of control valve with neat and clean diagram along with industrial applications.
5. Discuss the construction and working of reciprocating air compressor with neat and clean diagram with suitable example.
6. Describe the design consideration of hydraulic and pneumatic circuit with suitable example.
7. Describe the working of solenoid valve with neat diagram along with applications related to manufacturing Industries.
8. Discuss the working of pressure regulator with neat and clean diagram along with industrial applications.

==END OF PAPER==