

**D.Voc Mechanical Manufacturing**  
**Subject: Hydraulics & Pneumatics**  
**Subject Code: ME-505**  
**Semester: Fifth**  
**Session: - September 2022**  
**Theory (External): 35 Marks**  
**Time: 03 Hours**

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**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 01 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 05 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 labeled

**Roll Number**

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

- A. Poise is a unit of  
(a) Mass density, (b) Kinematic viscosity, (c) Dynamic viscosity, (d) None of these
- B. Define (a) kinematic viscosity, and (b) dynamic viscosity
- C. Name any four pressure measuring devices.
- D. Explain Pascal's law with its use?
- E. Write down a general continuity equation of flow.
- F. What is a Bernoulli's equation?
- G. In a pump, there is \_\_\_\_\_.  
(a) Accelerating flow, (b) Decelerated flow, (c) Uniform velocity flow, (d) None of these
- H. Name the basic components of a typical hydraulic system.
- I. Mention any five important characteristics of oil used in hydraulic machines.
- J. What is the full form of FLR used in power circuits?

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

1. State Bernoulli's theorem. Mention its assumptions also.
2. Classify air compressors. Describe the working of a reciprocating air compressor.
3. What are the different types of pressures? Relate them schematically.
4. Explain the principle, construction, and working of an Inverted type U-tube manometer.
5. Name the pipe flow losses and their equations. What is a Reynold's number and its applications?
6. Enumerate the construction and working of:  
(a) Hydraulic jack,  
(b) hydraulic brake
7. Explain the basic components of a typical pneumatic system with schematic diagrams.
8. Classify the seals and packings used in power systems along with their materials and applications.

==END OF PAPER==