

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

1. Describe the following:
 - (a) Continuity equation
 - (b) Bernoulli equation
2. Describe the elements and construction of a hydraulic pump with suitable diagram.
3. Describe the construction and working of following:
 - (a) Hydraulic actuators
 - (b) Control valves
4. What are the types and essential properties of compressible fluids used in pneumatic systems?
5. Differentiate between reciprocating and rotary pumps with suitable diagrams.
6. What are the various valves used in pneumatic systems? Explain their symbols and applications.
7. Write short notes with suitable diagrams on following:
 - (a) Filters
 - (b) Lubricators
8. What is PLC? Enumerate the rules for designing the hydraulic and pneumatic circuits.

==END OF PAPER==

BACHELOR OF VOCATION
Automotive Component Manufacturing
Subject: Hydraulics and Pneumatics
Subject Code: LBME-302
Semester: Sixth
December 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 labeled

Roll Number

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

- A. A pneumatic symbol is:
- Different from a hydraulic symbol used for the same function
 - The same as a hydraulic symbol used for the same function
 - Not to be compared to a hydraulic symbol used for the same function
 - None of the mentioned
- B. The scientific principle that makes hydraulic systems possible is
- Pascal principle
 - Boyle's law
 - Bernoulli's principle
 - Fluid flow principle
- C. A one-way valve that allows air into the reservoir of a compressor, but doesn't let it out, is a
- Check valve
 - Receiver valve
 - Control valve
 - Three way valve
- D. 5/2 way single solenoid valve has:
- 2 ports 2 positions
 - 5 ports 2 positions
 - 5 ports 5 positions
 - 2 ports 5 positions
- E. The most common hydraulic fluid is:
- Mineral oil
 - Synthetic fluid
 - Water
 - Gel
- F. Which type of compressor requires a reservoir for compressed air and why?
- rotary compressor to avoid pulsating effect
 - reciprocating compressor to avoid pulsating effect
 - both rotary and reciprocating compressors to avoid pulsating effect
 - none of the above
- G. Where is an intercooler connected in a two stage compressor?
- intercooler is connected after the two stage compressor
 - intercooler is connected between the two stages of the compressor
 - intercooler is connected before the two stage compressor
 - none of the above
- H. The hydraulic system is always a _____
- Closed loop system
 - open loop system
 - open or closed loop system
 - Any of the above
- I. Hydraulic motors are usually rated in:
- Pounds force
 - Newton meters torque
 - Horsepower
 - KW hour
- J. Solenoid operated relief valves can be used:
- on the case drain of a pump
 - on the tank line of a pump
 - to unload the pressure port of a pump
 - to operate other sensors in a circuit