



# St. Michael Polytechnic College

St. Santhiyagappar Nagar  
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DEPT: MECHANICAL

YEAR/SEMESTER: II / III

SUB.NAME: FLUID MECHANICS AND FLUID POWER

*Each question carries 1(one) mark in PART-A and 12(twelve) marks in PART-B*

## **UNIT-1 PROPERTIES OF FLUIDS AND PRESSURE MEASUREMENTS**

### **PART-A**

1. Definition of fluid.
2. Types of fluid (or) classified of fluid.
3. Any four properties of fluid, and their units.
4. What is mean by real fluid?
5. Define specific weight.
6. Define relative density (or) specific gravity.
7. Define viscosity.
8. What is kinematic viscosity?
9. What is surface tension?
10. Define capillarity.
11. Define vapour pressure.
12. What is pressure of a fluid (or) intensity of pressure?
13. Define pascal's law.
14. What is manometer?
15. Types of manometers.
16. What is piezometer tube?
17. What is mechanical gauges?
18. Define pressure head.
19. Application of pascal's law.
20. Define absolute pressure.

### **PART-B**

1. A simple manometer containing mercury was used to determine the pressure in the pipe containing a liquid of specific gravity 0.8 as shown in figure. Calculate the pressure in the pipe in (a) m of water and (b)  $\text{KN/m}^2$  when the manometer reads as shown in figure.
2. The pressure of water in a pipe line was measured by means of simple manometer containing mercury. The mercury level in the open tube is 150mm higher than that of left tube. The height of water in the left tube is 40mm. Determine the static pressure in the pipe In (I) head of water in meters and (II)  $\text{KN/m}^2$
3. A simple 'U' tube mercury manometer is connected to a pipe containing an oil of specific gravity 0.8. what is the pressure of oil?
4. A differential manometer connected to two points A & B in a pipe containing an oil of relative density 0.8 shows a difference in mercury levels as 100mm. Determine the difference in pressures at the two points in term of (a) head of water in meters and (b)  $\text{KN/m}^2$
5. A differential mercury manometer is used to measure pressure difference due to flow of oil of relative density 0.85 in a pipe line shown in the figure. Find the difference in pressure in terms of meters of oil and in  $\text{KN/m}^2$ .
6. Define mechanical gauges.