



Civil Engineering

Vision:

“To impart quality technical education beneficial to industry and the society in the field of Civil Engineering.”

Mission:

To arrange academic and technical expertise.

To improve the practical knowledge of the student as per current scenario of industry.

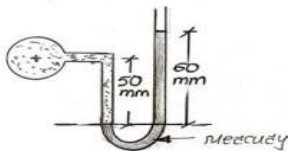
To make the students socially and ethically responsible.

Assignment No :- 01

Subject : Hydraulics

Topic Name :- Pressure Measurement

1. Differentiate real and ideal fluid.
2. State Newton's law of viscosity and state unit of dynamic viscosity.
3. Write a note on application of hydraulics in Irrigation and Environmental Engineering
4. State Pascal's law and its practical applications
5. Explain any four physical properties of fluid.
6. The mass density of lubricating oil is 930 kg/m^3 . What is its (a) relative density, (b) specific volume and (c) unit weight ?
7. A simple U tube mercury manometer as shown in Fig is used to measure the pressure of water flowing in a pipeline. Determine the pressure in pipe in terms of head of water.



8. Find specific weight, mass density, and specific gravity of a liquid having weight 15KN and occupying 7.5m^3 volume.
 9. Convert the pressure of 0.8 N/mm² in meters of liquid of specific gravity 0.75
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Date of Submission :-

Assign By :- Mrs. Sargam Chakraborty



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Assignment No :- 02

Subject : Hydraulics

Topic Name :- Hydrostatics

1. Define Hydrostatic pressure
 2. Define pressure diagram.
 3. Write practical application of knowledge of total hydrostatic pressure and center of pressure (any four examples)
 4. Explain the variation of pressure in horizontal and vertical direction in static liquid
 5. State Pascal's law of fluid pressure and its practical application
 6. A masonry dam height 8m high and 3.5m wide has water level 1m below its top. Calculate
a) total pressure on 1m length of dam b) depth of center of pressure.
 7. Explain the concept and use of pressure diagram with a neat sketch.
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Assignment No :- 03

Subject : Hydraulics

Topic Name :- Fluid Flow Parameters

1. Define steady and unsteady flow with practical example
2. Differentiate between a) Uniform & Non-uniform flow b) Laminar & Turbulent flow
3. Define: i) Reynolds number ii) Pressure head iii) Velocity head iv) Datum head
4. State Bernoulli's theorem and derive formula for it and briefly discuss its uses.
5. A horizontal pipe carrying water tapers from 30 cm dia. at A to 15 cm dia. at B in a length of 6 m. The pressure at A is 100 N/cm² . If the discharge is 600 lit/min. Calculate pressure at B in N/cm² . If the loss of head is 10 cm of water. Also calculate pressure in pipe at its mid length.
6. A conical pipe has diameter 40 cm at the larger end and 20 cm at the smaller end and forms a part of a vertical main. The pressure head at the larger end is found to be 30 m and the smaller end 22 m of water .find the discharge through the pipe ,if the length of conical portion is 2 m. Assuming no losses and the larger is at the top.

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Assignment No :- 04

Subject : Hydraulics

Topic Name :- Flow Through Pipes

1. What is Flow net? List the use of flow net.
2. Define the following terms: Datum head, pressure head, velocity head and total head.
3. What is Moody's diagram? State its use.
4. Write expression for any four minor losses in pipe flow.
5. What is Vena Contracta? Where does it occurs?
6. A horizontal pipeline, 40 m long, is connected to a water tank at one end and discharges freely into the atmosphere at the other end. For the first 25m of its length from the tank, the pipe is 150mm diameter and its diameter is suddenly enlarged to 300mm. The height of water level in the tank is 8m above the center of the pipe. Considering all the losses of head occur, determine the rate of flow. Take $f = 0.01$ for both the sections of the pipe.
7. A horizontal pipe carries water at the rate of $0.04 \text{ m}^3/\text{s}$. Its diameter which is 300mm reduces abruptly to 150mm Calculate the pressure loss across the contraction. Take the coefficient of contraction = 0.62

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