

GOVERNMENT ENGINEERING COLLEGE, BHUJ

FLUID MECHANICS ASSIGNMENT – 1

Chapter: - Fluids & Fluid Pressure Measurement

Branches: Civil / Environment / Mining

FACULTY: ASHISH J MODI

1. The weight of 5 m^3 of certain oil is 45 kN. Calculate its specific weight, mass density and specific gravity.
2. Calculate the capillary rise in a glass tube of 3 mm diameter inserted in water. Surface tension for water is 0.075 N/m. What will be the percentage increase in capillary height if the diameter of glass tube is 2 mm?
3. Two capillary tubes diameter 2mm and 3mm are dipped in an oil of surface tension 0.039 N/m having specific gravity of 0.85. Find the difference of oil levels in the two tubes. Assume angle of contact equal to 25° .
4. Two plates spaced at 5 mm distance creates shear stress 0.25 N/m², when upper plate is moving at a velocity of 2.5 m/s. If the mass density of oil is 900Kg/m³. Find the dynamic and kinematic viscosity of oil.
5. Find the pressure within a droplet of water having 1.2 mm diameter if the atmospheric pressure outside the droplet is 101 KN/m² and surface tension of water is 0.074 N/m².
6. Find the depth of point below sea water surface where the pressure intensity is 404.8 KN/m². Specific gravity of sea water = 1.03.