College of Engineering & Technology

Department: Mechanical Engineering Marks: 20
Lecturer: Dr. Rola Afify Time: 11:30 – 12:10
Course Code: ME361 Date: 9/7/2015

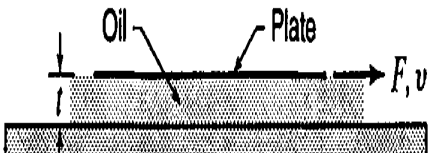
Name: R. N.:

Answer the following questions:

Question one (10 marks)

A) If a certain liquid has a specific weight of 8600 N/m^3, what are the values of its density, specific volume, and specific gravity?

B) A flat plate 200 mm x 750 mm slides on oil (μ = 0.85 Ns/m^2) over a large plane surface. What force (F) is required to drag the plate at a velocity (v) of 1.2 m/s, if the thickness (t) of the separating oil film is 0.6 mm?



Question two (10 marks)

A) State the relation between absolute, atmospheric and gage pressure.

B) A U-tube mercury manometer is connected to a closed pressurized tank, as shown in figure. If the air pressure is 138 KPa, determine the differential reading, h. The specific weight of the air is negligible.