College of Engineering & Technology

Department: Mechanical Engineering Marks: 8
Lecturer: Dr. Rola Afify Time: 9:30 – 10:10
Course Code: ME362 Date: 3/12/2016

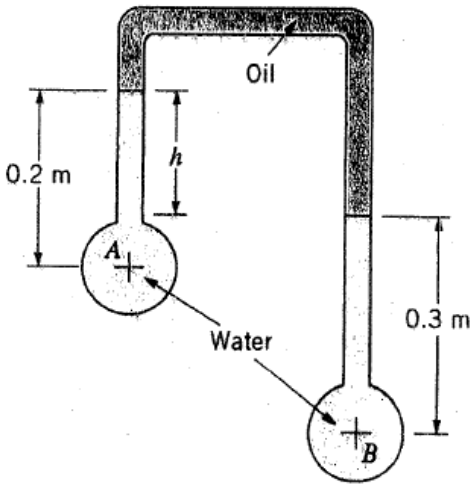
8

Name: R. N.:

Answer the following questions:

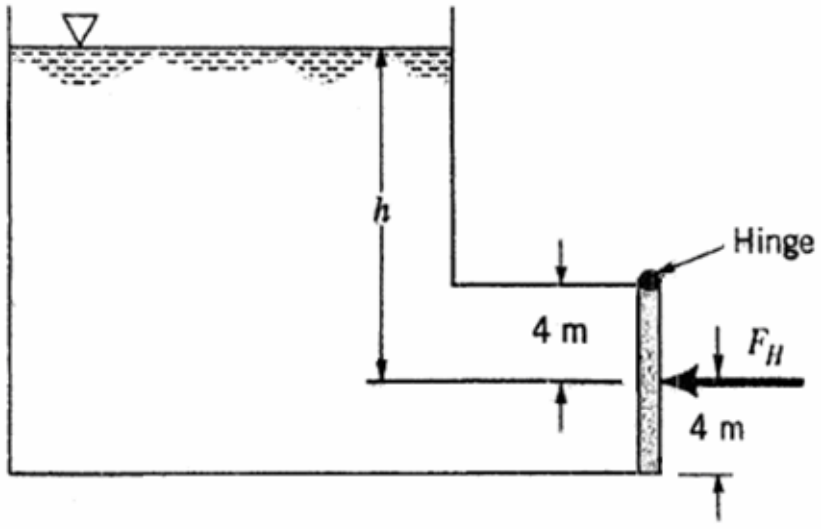
Question one (4 marks)

The inverted U-tube manometer contains water and oil (SG. = 0.9), as shown in figure. The pressure difference between pipes A and B, $P_A - P_B = -5$ kPa. Determine the differential reading h.



Question two (4 marks)

A rectangular gate, 3m wide and 8m high, is located at the end of a rectangular passage that is connected to a large open tank filled with water, as shown in figure. The gate is hinged at its top and held closed by a horizontal force, F_H, located at the center of the gate. The maximum value of F_H is 3500 kN. Determine the maximum water depth, h, above the center of the gate that can exist without the gate opining.



Good Luck 1/1

Dr. Rola Afify