

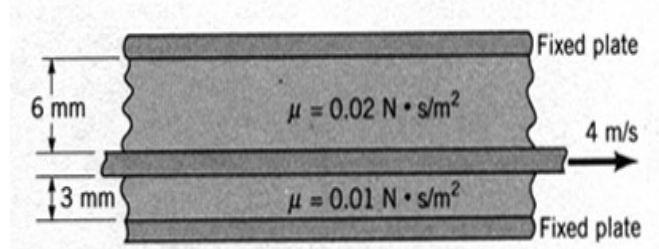
	Alexandria Higher Institute of Engineering & Technology (AIET)		
	Mechatronic Department		Third Year
	EME312	Fluid Mechanics	Midterm, April, 9, 2013
	Examiners:	Dr. Rola Afify and Committee	Time: 1.5 hours

Answer the following questions:

Question one (6 marks)

A) Define (with mentioning units):- Specific weight – Viscosity - Bulk Modulus of Elasticity.

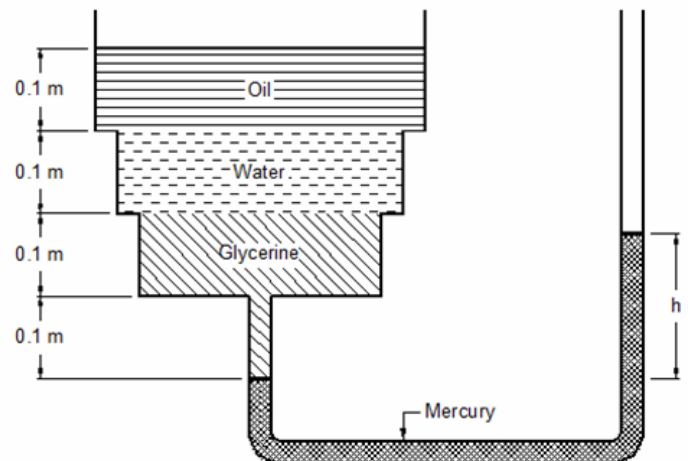
B) A large movable plate is located between two large fixed plates as shown in figure. Determine the magnitude and direction of the shearing stresses that act on the fixed walls when the moving plate has a velocity of 4m/s. Assume that the velocity distribution between the plates is linear.



Question two (6 marks)

A) Explain, with neat sketch, Hydraulic Press's function.

B) A tank is constructed of a series of cylinders having diameters of 0.30, 0.25, and 0.15 m as shown in figure. The tank contains oil (sp.gr. = 0.8), water, and glycerine (sp.gr. = 1.26). A mercury manometer is attached to bottom. Calculate the manometer reading, h.



Question three (8 marks)

A) Differentiate between:

1. Streamline and Stream tube.
2. Uniform and Non-Uniform flow.

B) Calculate the discharge in lit/sec, through the pipeline shown below. Also draw the T.E.L & H.G., considering ideal flow

