



## College of Engineering & Technology

Department: Mechanical Engineering  
Lecturer: Dr. Rola Afify  
Course Code: ME362

Marks: 20  
Time: 4:00 – 5:00  
Date: 6/5/2015

Name:

R. N.:

**Answer the following questions:**

**Question one (10 marks)**

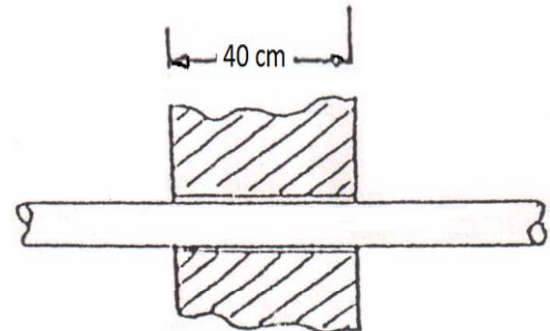
A) Define:

- Fluid:

- Specific gravity:

- Vapor pressure of liquid:

B) A shaft 6.00 cm in diameter is being pushed axially through a bearing sleeve 6.02 cm in diameter and 40 cm long. The clearance, assumed uniform, is filled with oil. Problems whose properties are  $\nu = 0.003 \text{ m}^2/\text{s}$  and  $\gamma = 0.88$ . Estimate the force required to pull the shaft at a steady velocity of 0.4 m/s.



**Question two (10 marks)**

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

B) The inverted differential manometer have an oil of specific gravity 0.8 connected to two different pipes carrying water under pressure. Determine the pressure in the pipe B. The pressure in pipe A is 2.0 meters of water.

