



College of Engineering & Technology

Department: Mechanical Engineering Marks: 30
Lecturer: Dr. Rola Afify Time: 12:30 – 2:00
Course Code: ME361 Date: 20/7/2013

Name:

Answer the following questions:

Question one (10 marks)

A) Define:

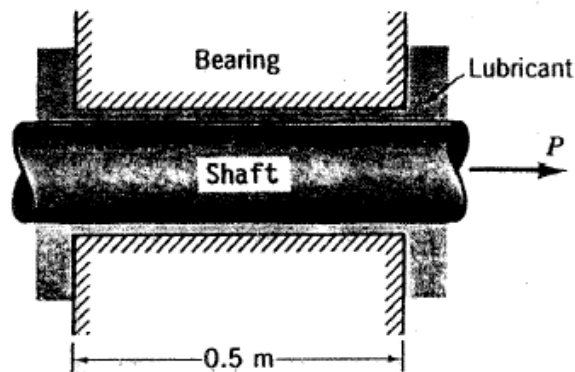
- Density:

- Bulk modulus of elasticity:

- Kinematic viscosity:

B) Sketch the relation between viscosity and temperature for a certain fluid.

C) A 25 mm diameter shaft is pulled through a cylindrical bearing as shown in Figure. The lubricant that fills the 0.3 mm gap between the shaft and bearing is oil having a kinematic viscosity of $8 \times 10^{-4} \text{ m}^2/\text{s}$ and a specific gravity of 0.91. Determine the force P required to pull the shaft at a velocity of 3 m/s. Assume the velocity distribution in the gap is linear.

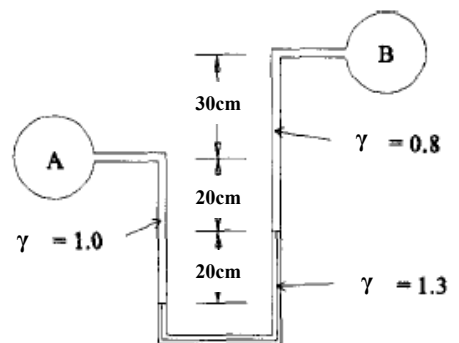


Question two (11 marks)

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

B) Differentiate between Piezometer and U-tube with one leg enlarged.

C) A manometer is connected between two pipelines, A and B shown in figure. What is the pressure difference between A and B expressed as meters of water?



Question three (9 marks)

Write the name of each component in the following Hydraulic circuit

