



Alexandria Higher Institute of Engineering & Technology (AIET)

Department of: Industrial

Second Year

2nd Year

ME251

Fluid Mechanics

Midterm-of-Semester-1 Exam, Nov., 1, 2011

Examiners:

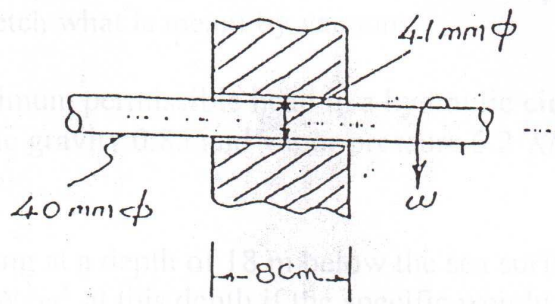
Dr. Rola Afify and committee

Time: 1 hour

Answer the following questions:

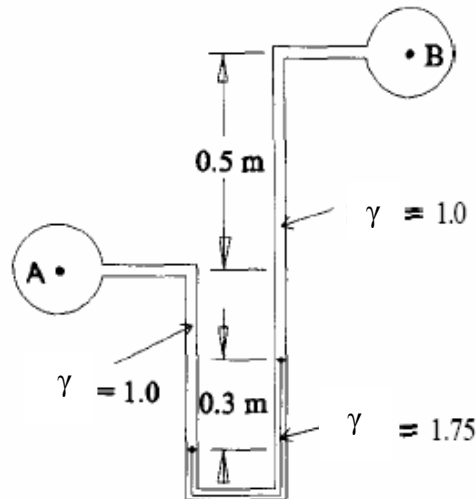
Question one: (5 marks)

- A) Define: Specific gravity - Kinematic viscosity – Pressure.
- B) Sketch the relation between viscosity and temperature.
- C) The shaft turning inside a stationary journal as shown, with a rotating speed 20 rps the torque is 0.0036 N.m. Estimate the viscosity of oil.



Question Two: (5 marks)

- A) The manometer shown in figure is used to measure the pressure difference between two pipelines A and B, each contains water. Calculate the pressure difference $P_A - P_B$.



- B) A square tank (2 x 2) x 3 m high. Calculate the force on one side of the vertical sides and on its bottom if the tank was opened and containing water to height 2.5 m.