JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Tech-IV Semester (CE)

COURSE CODE(CREDITS): 18B11CE412(3)

COURSE NAME: Fluid Mechanics

COURSE INSTRUCTORS: Ashish Kumar

MAX. MARKS: 15

MAX. TIME: 1 Hour

Note: *(a)All questions are compulsory.*

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. (a) Express pressure intensity of 10 kg(f)/cm² in terms of absolute pressure and gage pressure. (CO1)   [1]

(b) If 6 m³ of a certain oil weigh 2500 kg(f). Calculate mass density and specific gravity of this oil. (CO1)

[1]

(c) Two fluids look similar; both are clear liquids and have almost same specific gravity, but they behave differentially when flow . What is that property of fluid explain Briefly with example. (CO1)   [2]

(d) Differentiate between Newtonian and Non- Newtonian fluid with suitable example. (CO1)   [1]

Q2 . (a) Differentiate between Simple manometers and Differential manometers with example. (CO2)   [1]

(b) The left leg of a U tube mercury manometer is connected to a pipe line conveying water. Find out the pressure at point A as shown in figure 1. The right limb contains benzene (sp. gravity 0.88). (CO2) [4]

Q3. A hydraulic lift consists of a 60 cm diameter ram and slides in a cylinder of diameter 60.02 cm. Annular spacing between cylinder and ram is filled with oil. If rate of travel of the ram is 9.15 m/min, find the frictional resistance when 4.15 m of ram is engaged in the cylinder. Kinematic viscosity and specific gravity of oil is 0.03 cm2/sec and 0.85 respectively. (See: Fig. 2) (CO2)   [5]
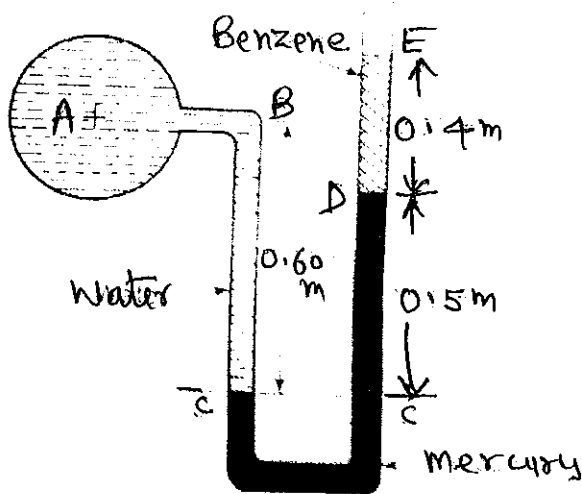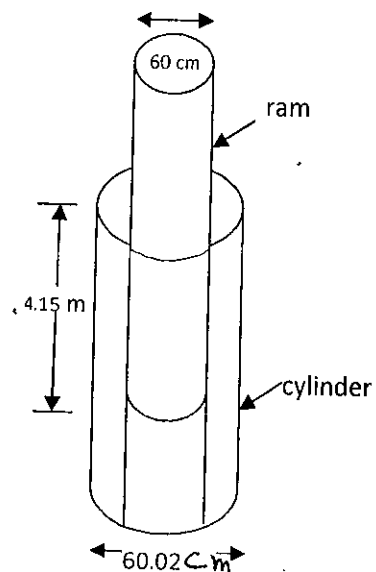

Figure 1

Figure 2