**REG.NO:**

**SEMBODAI RUKMANI VARATHARAJAN ENGINEERING COLLEGE**

**ACADEMIC YEAR 2013-2014/ODD SEMESTER**

**CYCLE TEST – I**

**DEPARTMENT OF MECHANICAL ENGINEERING**

SET-A

**SUBJECT CODE/TITLE:** ME 2204 FLUID MECHANICS AND MACHINERY

**YEAR/SEM:** II/III **DATE:**

**DURATION:** 90 Mins **MAX.MARKS:** 50

 **PART-A**

 ( 05X2 = 10 marks)

1)Define Compressibility.

2)Define Newtonian law of Viscosity.

3)Define Pascal law.

4)Define stream line, streak line, path line flow.

5)Define Rate of flow Or Discharge

 **PART-B**

 (8+16+16 = 40 marks)

1.(i)a) A plate, 0.025 mm distant from a fixed plate, moves at 50 cm/s and

requires a force of 1.471 N/ m2 to maintain this speed. Determine the fluid

viscosity between plates in the poise. (8)

b) Determine the intensity of shear of an oil having viscosity =1.2 poise and is

used for lubrication in the clearance between a 10 cm diameter shaft and its

journal bearing. The clearance is 1.0 mm and Shaft rotates at 200 r.p.m (8)

**or**

 (ii)a)One litre of crude oil weighs 9.6 N. Calculate its Specific weight,density and specific weight. (8)

 b) The Velocity Distribution for flow over a flat plate is given by u=(2/3)y-y2, Where u is the point velocity in meters per second at a distance y metre above the plate. Determine the shear stress at y=0 and y=15 cm.Assume dynamic viscosity as 8.63 poises (8)

2.(i) a)Explain types of fluid flow.(8)

 b)Explain all dimensional number.(8)

**or**

 (ii)Water is flowing through a pipe having diameter 300 mm and 200 mm

at the bottom end is 24.525 N/cm2 and the pressure at the upper end is(8)

9.81 N/Cm2 . Determine the difference in datum head if the rate of

flow through pipe is 40 lit/s. (16)

3 (i)Discuss the thermodynamic properties of fluids (8)

**(or)**

 (ii)Explain Differential manometer With Neat sketch. (8)