Name :
Roll No:

MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM – 686 666

DEPARTMENT OF MECHANICAL ENGINEERING
FIRST SESSIONAL EXAMINATION, AUGUST, 2025
THIRD SEMESTER (ME)

B24ME2T02 MECHANICS OF FLUIDS

Time – 1.5 Hour **Max: 40 Marks**

PART-A

Answer All Questions

1.	What is viscosity. What is the cause of it in liquids and in gases. Discuss the effect of temperature on viscosity of Liquid and Gas.	**[CO 1]**	**3 Marks**
2.	Explain the states of equilibrium of a floating body.	**[CO 1]**	**3 Marks**
3.	A stationary probe is placed in a fluid flow and measures pressure and temperature as functions of time at one location in the flow. Is this a Lagrangian or a Eulerian measurement? Explain.	**[CO 2]**	**3 Marks**
4.	Define Stream lines, Path lines and Streak lines	**[CO 2]**	**3 Marks**

PART-B

Answer All Questions

5.	A differential manometer is connected at the two points A and B of two pipes. The pipe A contains a liquid of sp. gr. = 1.5 while pipe B contains a liquid of sp. gr. = 0.9. The pressures at A and B are 98.10 KN/m² and 176.580 KN/m² respectively. Find the difference in mercury level in the differential manometer. Pipe A is 3 m above pipe B. The mercury level in the limb connected to pipe A is 2 m below the center line of pipe B. The level of mercury in the limb connected to pipe B is below the level of mercury (Sp. gr. = 13.6) in the other limb.	**[CO 1]**	**14 Marks**
6. a	Derive an equation for the center of pressure and the pressure force for a body submerged in water.	**[CO 2]**	**10 Marks**
6. b	How can you classify fluid flow? Name and explain various classifications	**[CO 2]**	**4 Marks**

VISION

Mentoring to Ensure Excellence

MISSION

- To facilitate comprehensive and integrated development of students by providing quality education that encourages sustainable practices
- To mold disciplined and socially committed engineers capable of assuming professional leadership upholding national integrity