

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech I Semester Supplementary Examinations, June/July-2024

**FLUID MECHANICS
(CIVIL ENGINEERING)****Time: 3 Hours****Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Calculate the specific gravity whose mass density is 980 kg/m^3	CO1	L1	2M
2. Differentiate absolute and gauge pressure.	CO1	L1	3M
3. Define centre of pressure.	CO2	L1	2M
4. Explain the expression of horizontal plane surface submerged in liquid.	CO2	L1	3M
5. Define uniform and non-uniform flows.	CO3	L1	2M
6. Explain the relation between stream and velocity potential functions.	CO3	L1	3M
7. How boundary layer separates?	CO4	L1	2M
8. What do you understand by flow between parallel plates?	CO4	L1	3M
9. What are minor losses?	CO5	L1	2M
10. Classify the orifices.	CO5	L1	3M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) Determine the surface tension in a soap bubble of 40mm diameter when the inside pressure is 2.5 N/m^2 above atmospheric pressure.	CO1	L3	10M
OR			
B) Illustrate the working of U- tube manometer.	CO1	L3	10M
12. A) Determine the total pressure and depth of center of pressure on a plane surface of 1m wide and 3m deep when its upper edge is horizontal and (i) coincide with water surface (ii) 2 m below the free water surface	CO2	L3	10M
OR			
B) Explain the procedure of finding hydrostatic forces on curved surfaces.	CO2	L3	10M
13. A) Discuss about streamline, path line and streak line. Give examples for each.	CO3	L3	10M
OR			
B) What is Euler's equation of motion? How will you obtain Bernoulli's equation from it?	CO3	L3	10M
14. A) Explain separation of boundary layer and control of boundary layer.	CO4	L3	10M
OR			
B) Discuss the characteristics of laminar and turbulent flows?	CO4	L3	10M
15. A) Derive the Darcy's equation for head loss in pipes due to friction.	CO5	L3	10M
OR			
B) Explain the construction and working of a Pitot tube. Mention the applications.	CO5	L3	10M