O.P.Code: 20ME3102	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year I Semester Regular & Supplementary Examinations February-2025

ADVANCED FLUID DYNAMICS

(Thermal Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

	UNIT-I			
1	Outline the derivation of continuity equation by using integral and differential approach.	**CO1**	**L2**	**12M**
	OR			
2	Explain in detail about the boundary layer equation.	**CO1**	**L5**	**12M**
	UNIT-II			
3	What are the application of empirical relation to various geometries for laminar and turbulent flows and explain in detail.	**CO2**	**L1**	**12M**
	OR			
4	Prove the various empirical equations available to predict natural convection heat transfer coefficient.	**CO2**	**L6**	**12M**
	UNIT-III			
5	Prove the boundary layer equation.	**CO3**	**L6**	**12M**
	OR			
6	Discuss shortly about the boundary –layer thickness.	**CO3**	**L5**	**12M**
	UNIT-IV			
7	Derive the governing equation for turbulent flow.	**CO4**	**L5**	**12M**
	OR			
8	Prove the universal velocity profile on a flat plate and rectangular plate.	**CO4**	**L6**	**12M**
	UNIT-V			
9	Discus the design of experiments with some suitable application.	**CO5**	**L5**	**12M**
	OR			
10	Explain the working principle of Particle Image Velocimetry with neat diagram.	**CO5**	**L1**	**12M**

***** END *****