PRN:		Course Code :	UEV305

Second Year **B. Tech** End Semester Examination Winter 2024

Thermo & Aero Dynamics 000232

Day and Date: Mon F 2 DEC 2024 Max Marks: **100**

Time : 10:30AM To 01:30PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Explain Zeroth law of thermodynamics with neat sketch	08	1	1
	b)	Write in detail about ideal gas law, van der wall equation	08	3	1
		OR			
	b)	Explain about thermodynamic equilibrium work.	08	2	1
Q.2		**Attempt the following**			
	a)	Define 1st law of thermodynamics and write Application of 1st law of thermodynamics for non-flow process	08	2	1
	b)	What are steady flow processes, explain in detail	08	2	2
		OR			
	b)	Explain in detail system, surrounding, boundary, open system and close system.	08	3	2
Q.3		**Attempt any two from the following**			
	a)	Explain Otto cycle with neat sketch of T-S and P-V plot	08	2	2
	b)	Explain Brayton cycle with neat sketch of T-S and P-V plot	08	2	3
	c)	Write the difference diesel cycle and Otto cycle.	08	1	3
Q.4		**Attempt any two from the following**			
	a)	Define aerodynamic force and moment	08	1	3
	b)	Define the Euler equation	08	2	4
	c)	Explain the concept of continuity equation and drive it with neat sketch	08	3	4
Q.5		**Attempt any Two of the following**			
	a)	Define and differentiate between source flow, sink flow	09	3	4

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	b)	Explain the concept of uniform flow	09	2	4
	c)	State the Kutta-Joukowski theorem and explain its significance in aerodynamics	09	3	5
Q.6		**Attempt any Two of the following**			
	a)	Explain about sink flow	09	2	5
	b)	Discuss about a source flow	09	3	5
	c)	Explain potential function and stream function with step by step equations	09	3	5

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