PRN:		Course Code :	P69PC103

000460

First Year **M. Tech** Semester End Examination Winter 2024

Flight Performance

Day and Date: Wed - 4 DEC 2024 Max Marks: **50**

Time : 10:30AM To 12:30PM Duration: **02** hrs

Instructions:
1. All questions are compulsory.
2. Assume suitable data wherever necessary and mention it clearly.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following Question.**			
	a)	Drive Equations of motion of a rigid flight vehicle.	10	1	1
Q.2		**Attempt the following Question.**			
	a)	Explain detail about the Standard Atmosphere, Off-standard and design atmospheres.	10	2	1
		OR			
	b)	Discuss the Drag reduction techniques.	10	3	2
Q.3		**Attempt the following Question.**			
	a)	Discuss the drag estimation and also drive the equation for velocity corresponding to minimum drag.	10	1	3
		OR			
	b)	Drive the equation for steady state level flight with minimum drag condition.	10	2	3
Q.4		**Attempt the following Question.**			
	a)	Drive Breguet equation for Range for Jet engine aircraft.	10	1	4
		OR			
	b)	Define PSFC and Derive the basic equation of range for a propeller driven aircraft. Also show that maximum Range for a propeller engine driven Aircraft occurs at Drag Minimum condition.	10	3	4
Q.5		**Attempt the following Question.**			
	a)	Derive the basic equations to estimate take off performance of an aircraft.	10	3	5
		OR			
	b)	Write short note on Landing Performance.	10	3	5

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