

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III(NEW) EXAMINATION – SUMMER 2023****Subject Code:3130108****Date:26-07-2023****Subject Name:Fundamentals of Aeronautical Engineering****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1 (a) Explain trim tab	03
(b) What is Airfoil? Explain airfoil nomenclature.	04
(c) Explain Three axis of stability of aircraft with appropriate diagram.	07
Q.2 (a) Explain spoilers	03
(b) Explain all leading edge lifting devices	04
(c) Explain all Primary control surfaces in brief with appropriate diagram	07
OR	
(c) Explain all integrated control surfaces with diagram	07
Q.3 (a) Explain flow separation.	03
(b) Definitions of Critical Mach Number with diagram.	04
(c) Explain Drag Divergence Mach Number with Diagram.	07
OR	
Q.3 (a) Explain basic function of aircraft structure.	03
(b) What is Pressurization of fuselage?	04
(c) Explain four Primary forces acting on an aircraft.	07
Q.4 (a) Explain Turbo-jet engine	03
(b) Explain Aircraft stalling and maximum lift co-efficient.	04
(c) Differentiate True Monocoque and semi-Monocoque structure design.	07
OR	
Q.4 (a) Differentiate Turbo Jet and Turbo-fan Engine	03
(b) Short Note on TCAS	04
(c) Explain Fuselage primary structure with diagram.	07
Q.5 (a) Explain Ramjet engine	03
(b) Explain airborne-weather radar	04
(c) Classification of different propulsion system with diagram.	07
OR	
Q.5 (a) Explain VOR	03
(b) Short note on VORTAC with diagram.	04
(c) Explain Instrument landing system with diagram.	07
