

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– III(NEW) EXAMINATION – WINTER 2022****Subject Code:3130108****Date:22-02-2023****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) What is the function of air break?	03
(b) What is Critical mach number? Explain with the help of Diagram.	04
(c) Explain Airfoil nomenclature with the help of Diagram.	07
Q.2 (a) What is airfoil? Explain different application of it.	03
(b) What are Control surfaces? Explain function of Secondary control surfaces- Flaps, Trim Tabs, Air brakes, Spoilers	04
(c) Write a short note on Airfoil stalling with the help of diagram.	07
OR	
(c) Explain in details three axis and four forces of an aircraft.	07
Q.3 (a) Draw a neat sketch of Fuselage structure with nomenclature.	03
(b) Write a difference between bulkhead and former with neat sketch.	04
(c) Explain Construction and Function of VOR	07
OR	
Q.3 (a) Explain the application of DME.	03
(b) What is Aircraft pressurization? Why it is required?	04
(c) Classify types of landing gears/Under Carriage and explain briefly.	07
Q.4 (a) Explain Function of Ruddervator.	03
(b) Explain Geometry of propeller.	04
(c) Explain turbofan Engine with neat sketch.	07
OR	
Q.4 (a) Explain the application of VORTAC	03
(b) What is Pressure co-efficient? Explain Briefly.	04
(c) Explain turbo-prop engine with neat sketch.	07
Q.5 (a) Write difference between turbo-engines and piston engines.	03
(b) What are the Application of Primary and Secondary Radar	04
(c) Explain Principal types of aircraft construction methods with the help of neat sketch.	07
OR	
Q.5 (a) What is NDB? Explain Briefly	03
(b) Explain Automatic direction finder with diagram.	04
(c) Explain the function, Construction and application of Instruments Landing System.	07