

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-III (NEW) EXAMINATION – WINTER 2024****Subject Code: 3130108****Date: 26-11-2024****Subject Name: Fundamentals of Aeronautical Engineering****Time: 10:30 AM TO 01:00 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) Write basic functions of Aircraft Structure.	03
	(b) Draw a neat diagram of Aircraft labelled with control surfaces and components.	04
	(c) Explain the terms used in Airfoil nomenclature using a diagram.	07
Q.2	(a) Write in brief about Flaperon.	03
	(b) Define Pressure Coefficient.	04
	(c) Draw and describe the geometry of Propeller.	07
	OR	
	(c) Write a short note on a)Ramjet b)Pulsejet c)Piston Engines	07
Q.3	(a) Write in brief about Elevons.	03
	(b) Write the functions of Flaps, Trim Tabs, Air brakes, Spoilers?	04
	(c) Give a description of Fuselage and its types.	07
	OR	
Q.3	(a) What are the phases of a flight? Explain.	03
	(b) Name and explain the function of primary control surfaces.	04
	(c) What are the basic structural members of the aircraft? Write their functions.	07
Q.4	(a) Define primary and secondary Radar	03
	(b) Write difference between Turbofan and Turbojet engines	04
	(c) Explain ILS.	07
	OR	
Q.4	(a) Write a short note on TCAS.	03
	(b) Write difference between jet engines and rocket engines.	04
	(c) Explain the working and significance of NDB-ADF.	07
Q.5	(a) Define Drag Divergence.	03
	(b) Write functions of Landing Gear and mention its configurations.	04
	(c) What kind of Radar is used for weather monitoring in Aircrafts? Explain its working and significance.	07

OR

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| Q.5 | (a) | Define Critical Mach Number | 03 |
| | (b) | Draw a diagram of wing structure and write their functions. | 04 |
| | (c) | Explain the working and principle of VOR. | 07 |
