

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- VII EXAMINATION-SUMMER 2023

Subject Code: 2170104

Date: 21/06/2023

Subject Name: Rocket & Missile Technology

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) Define Rocket and Missile.	03
(b) Define Drag. List out different types of drag and explain.	04
(c) Explain boost glide trajectory with appropriate sketch.	07
Q.2 (a) Difference between Solid and Liquid propellant.	03
(b) List out different types of missiles on the basis of its purposes.	04
(c) What do you mean by propellant? Explain different types of propellant.	07
OR	
(c) Explain desirable physical properties in details 1. Low freezing point, 2. High specific gravity.	07
Q.3 (a) Which are the different causes to form pressure loss in missile?	03
(b) Discuss on Propellant Inventory.	04
(c) Write a note on Volume Concept.	07
OR	
Q.3 (a) Write a short note on Flat turns for maneuvering flight	03
(b) Discuss on “outage control”.	04
(c) Explain in brief “maneuvering flight”.	07
Q.4 (a) Define Propellant feed lines in short.	03
(b) Discuss on “Ogival forebody”.	04
(c) Write a note on “Optimum Bias”.	07
OR	
Q.4 (a) Write a short note on pull ups for maneuvering flight	03
(b) Draw and explain typical base Pressure vs Mach number graph.	04
(c) Discuss pressure loss due to tip effect	07
Q.5 (a) Discuss tip effects on low aspect ratio rectangular wing.	03
(b) Explain nonusable Propellant	04
(c) Define Density variations for Propellant loading tolerances.	07
OR	
Q.5 (a) Write benefits of having blunt nose	03
(b) Write benefits of having sharp nose	04
(c) Explain Volume Concept.	07
