

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- VIII EXAMINATION – SUMMER 2020****Subject Code: 2170104****Date: 26/10/2020****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.

- Q.1 (a) Compare between Rocket and Missile with appropriate points. 03
(b) Label of Wing control with neat sketch. 04
(c) Explain propellant inventory. 07
- Q.2 (a) What are the different types of Missiles? 03
(b) Define Aspect Ratio with appropriate sketches. 04
(c) Explain with proper diagram on Classes of missiles. 07
- OR
- (c) Explain Calibrated system outage control. 07
- Q.3 (a) Outline tank calibration. 03
(b) Extend Solid propellant characteristics. 04
(c) Explain steps of graphical method for straight & level flight trajectory. 07
- OR
- Q.3 (a) Differentiate Liquid and Cryogenic propellants. 03
(b) Summarize feed line flow with proper points. 04
(c) Write a short note on Aerodynamics controls. 07
- Q.4 (a) List out different types of Drag. 03
(b) What is the difference between Gelled and Cryogenic propellant? 04
(c) Explain Ogival Forebody. 07
- OR
- Q.4 (a) What is level sensing? Explain Properly 03
(b) Explain Monowing for maneuvering flight. 04
(c) Derive Linearized Theory with basic assumptions. 07
- Q.5 (a) Illustrate with proper equations “Flat Turns for maneuvering flight”. 03
(b) Draw pressure distribution over body for boattail. 04
(c) Write a short note on wing planform. 07
- OR
- Q.5 (a) Discuss tail control with neat sketch 03
(b) What are parallel and normal forces acting on Rocket/Missile? 04
(c) Explain double base propellant. 07
