

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016**

**Subject Code:2170104****Date:25/11/2016****Subject Name:Rocket & Missile Technology****Time:10.30 AM to 1.00 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) Explain Solid propellant characteristics. **07**  
 (b) Explain flow past a wedge and cone for conical forebody. **07**
- Q.2** (a) Write a short note on an aspect ratio with neat sketch and equations. **07**  
 (b) List out Propellant ingredients for solid propellant and explain Inorganic oxidizers with appropriate examples. **07**
- OR**
- (b) Write a short note on Gelled Propellants. **07**
- Q.3** (a) Define double base propellant. Write advantages and disadvantages for extruded and castable double-base propellant. **07**  
 (b) Write a short note on Propellant tank outlet design with neat sketch. **07**
- OR**
- Q.3** (a) Write a short note on Organic oxidizers for solid propellant. **07**  
 (b) Explain Desirable physical properties for liquid propellant. **07**
- Q.4** (a) Define Outage. Explain Calibrated system outage control. **07**  
 (b) List out good load controls for propellant loading tolerance, and explain density variations. **07**
- OR**
- Q.4** (a) Write a Short note on Long range cruise trajectory. **07**  
 (b) Write a short note on Flat turns and pull-ups for maneuvering flight. **07**
- Q.5** (a) What is drag? Explain different types of drag with equations **07**  
 (b) Explain classes of Missiles with neat sketch **07**
- OR**
- Q.5** (a) Make a relation between mixture ratio loaded and mixture ratio burned. **07**  
 (b) Write a short note on BOOST SUSTAIN TRAJECTORY **07**

\*\*\*\*\*