

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Subject Code: 170104**Date: 27-11-2014****Subject Name: Rocket and Missile Configurations Design****Time: 10:30 am - 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) Define ullage? Explain pressurization system with neat sketch. **07**

(b) Explain the effects of Aspect ratio on the wing of missile. **07**

Q.2 (a) What are the major considerations of good load controls in propellant loading tolerance? Explain in brief. **07**

(b) Write a short note on elimination of the Geysering effect in missiles. **07**

OR

(b) Explain pressure surge in propellant system feed line flows. **07**

Q.3 (a) Explain solid propellant rocket engine with neat sketch. **07**

(b) Explain liquid propellant properties in details. **07**

OR

Q.3 (a) Explain liquid propellant rocket engine with neat sketch. **07**

(b) Write a short note on desirable physical properties for liquid propellant. **07**

Q.4 (a) Explain advantages and disadvantages of wing control, Canard control and Tail control. **07**

(b) Write a short note supersonic wing planforms. **07**

OR

Q.4 (a) What is outage? Explain calibrated system outage control. **07**

(b) What are the basic problems must be considered in propellant tank outlet design? Explain in details. **07**

Q.5 (a) Explain with neat sketch Long range cruise trajectory. **07**

(b) What is cruciform? Explain with neat sketch. **07**

OR

Q.5 (a) Relation of maneuverability and static stability margin for maneuvering flight. **07**

(b) Explain with neat sketch Boost sustain trajectory. **07**
