Seat No.:	Enrolment No.

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

Subject Code: 170104 Date: 25/11/2016 **Subject Name: Rocket & Missile Configurations Design** 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** Make a relation between mixture ratio loaded and mixture ratio burned 07 (a) Explain Propellant inventory 07 **(b) 07 Q.2** Define and Describe Flat turns and pull-ups for maneuvering flight (b) Difference between solid propellant rocket motor and Liquid propellant rocket 07 motor OR 07 **(b)** Write a short note on ground launch 0.3 Explain Liquid Fuels for liquid propellant 07 **(b)** Explain Different types of Solid Propellant 07 OR Explain induced flow field in pitch of wing-pylon missile combination for low 0.3 (a) 07 speed and high speed Explain Hemispherical forebody with neat sketch 07 **(b)** Explain classes of MISSILES with neat sketch 07 0.4 (a) **(b)** Explain types design and control with neat sketch 07 OR 0.4 Explain Semivertex angle vs length diameter ratio for cones and ogives 07 (a) Define Aspect Ratio. Explain Mach triangle and tip effects for Aspect ratio **(b)** 07 Explain Aerodynamics controls 07 0.5 (a) What is drag? Explain different types of drag with equations 07 Write a short note on BOOST SUSTAIN TRAJECTORY Q.5 **07** (a) (b) Write a short note on LONG RANGE CRUISE TRAJECTORY 07
