GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII EXAMINATION – WINTER 2015

S	ubjeo	et Code: 170104 Date: 16/12/2015	
T In	ime:	10:30am to 1:00pm Total Marks: 70	
		 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a)	 List out different types of missiles. Draw load factor vs Altitude graph for air to air missile. Write an equation of rate of climb for long range cruise missile trajectory. Define Interference drag. Define Aspect ratio. Write an advantage of wing control. 	07
	(b)	Write a short note on classes of missiles.	07
Q.2	(a) (b)	Explain with neat sketch "Ogival forebody". Write a short note on Biconvex and Double wedge airfoil sections.	07 07
		OR	07
	(b)	Explain Boost sustain trajectory for missile configurations design.	07
Q.3	(a)	Explain desirable physical properties such as 1. Low freezing point, 2. High specific gravity and 3. Heat transfer properties for liquid propellant.	07
	(b)	Explain Liquid oxidizers for liquid propellant.	07
Q.3	(a)	OR Explain desirable physical properties such as 1.stability, 2. Pumping properties, 3. Temperature variation for liquid propellant.	07
	(b)	Explain Liquid Fuels for liquid propellant.	07
Q.4	(a) (b)	Explain with neat sketch solid propellant rocket motor. Write a short note on Flat turns and pull-ups for maneuvering flight.	07 07
		OR	
Q.4	(a) (b)	Explain Reentry body design considerations for free flight dispersions. Explain Propellant inventory.	07 07
Q.5	(a) (b)	Write a short note on ground launch. Explain induced flow field in pitch of wing-pylon missile combination for low speed and high speed.	07 07
05	(a)	OR Make a relation between mixture ratio loaded and mixture ratio burned	07
V •2	(a) (b)	Explain Optimum Bias in Outage control.	07
