GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) - EXAMINATION - SUMMER 2017				
S	ubjec	et Code: 160102 Date: 08/05/20	Date: 08/05/2017	
Subject Name: Fundamentals of Jet Propulsion Time: 10:30 AM to 01:00 PM Instructions: Total			Marks: 70	
II	1	1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.		
Q.1	(a) (b)	Draw and explain Brayton cycle with intercooling. Classify the jet engines in detail.	07 07	
Q.2	(a) (b)	Derive the condition for critical pressure ratio for nozzles. Explain requirements of combustion chamber and needs of it OR	07 07	
	(b)	Derive Mach Area relation for nozzles.	07	
Q.3	(a) (b)	Explain different types of combustion chambers used in jet engines. Draw and explain simple Brayton cycle for jet engines. OR	07 07	
Q.3	(a) (b)	Write a note Requirements of good combustion chamber. Write a short note on effect of back pressure for flow through convergent nozzle.	07 07	
Q.4	(a) (b)	Derive thrust equation for turboprop engines. Write a short note on liquid propellant rocket engines. OR	07 07	
Q.4	(a) (b)	Explain need for subsonic and supersonic inlets. Classify the rocket engines.	07 07	
Q.5	(a) (b)	Explain the factors affecting the performance of turbojet engine. Explain in detail operating conditions for ramjet diffuser. OR	07 07	
Q.5	(a) (b)	Explain flame tube cooling and pressure loss for combustion chamber. Draw h-s diagram for turbojet engine.	07 07	
