Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

		BE – SEMESTER V • EXAMINATION – WINTER - 2012	
Subj	ect c	ode: 150105 Date: 22-01-2013	
•		Name: Operation & Maintenance of Aircraft	
		:30 pm to 05:00 pm Total Marks: 70	
nstr	uctio	ons:	
		Attempt all questions. Make suitable assumptions wherever necessary.	
		Figures to the right indicate full marks.	
Q.1	(a)	What is thrust augmentation, requirements and methods of augmentations? Explain general electric engineJ85 after burner and nozzle system with figure.	07
	(b)	Explain lubricating system and requirements. Explain Allison engine company 501-D13 lubricating system, operation and components with figures.	07
Q.2	(a) (b)	Describe turbine engine starting procedure and sequence of with figure. Give introduction and basic principles of V.H.F omnidirectional range (VOR).	07 07
	(b)	OR Explain types of compressors and operation of gas turbine engine.	07
Q.3	(a) (b)	Describe Hazardous materials and explain "FACTOR" stand for what? Explain load factors, aircraft loads and aircraft categories with their load limit factors OR	07 07
Q.3	(a)	What do you understand by maintenance and overhaul procedures of gas turbine engine? Explain stage wise in brief.	07
	(b)	Explain bonded fuselage structure with figure and show advantages over conventional mechanical fasteners and other physical properties.	07
Q.4	(a)	Explain transport aircraft wing structure with figure showing spars, skin, ribs, truniouns and tanks fitted with types. Explain doublers and their purpose.	07
	(b)	Explain welding repairs of exhaust units of aircraft engine and fuel tanks. OR	07
Q.4	(a) (b)	Explain different types of welding methods and different types of weld joints. Explain solid state voltage regulator of alternator with circuit diagram. How Zener diode acts in the circuit?	07 07
Q.5	(a)	Explain usage, principle and operation of engine rpm indicator (tachometer). Draw schematic diagram of Autosyn synchro system of Tachometer and explain how and where it is installed?	07
	(b)	Explain thermocouple temperature indicator as exhaust gas temperature indicator. What is thermocouple's principle? Draw schematic diagram and thermocouple installation. OR	07
Q.5	(a)	Explain basic principle of V.H.F communication and installation with typical diagram figure.	07
	(b)	Explain rectified power supply of alternator with circuit diagram in brief.	07

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