Seat No.:		: Enrolment No	Enrolment No	
Sul Tir	bjec me: (tructi 1 2	GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2017 t Code: 2170101 Date: 29/04/20 t Name: Aircraft Design I 02.30 PM to 05.00 PM Total Marks: ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q-1	A B	Briefly explain three phases of aircraft design with block diagram. How will you determine usable fuel required for particular flight?	07 07	
Q-2	A B	Discuss effects of wing loading on flight performance. With neat sketch explain how you will design T tail configuration. OR	07 07	
	В	Shortly explain conceptual design procedure.	07	
Q-3	A B	Discuss effects of power loading on flight performance. How will you locate retractable under carriage on aircraft layout? OR	07 07	
	A B	How will you estimate drag for your require design? Explain swash plate mechanism of main rotor of a conventional helicopter.	07 07	
Q-4	A B	Briefly explain considerations to choose tail plane configurations. Explain structure factor? Explain how basic empty weight affects payload carrying capacity.	07 07	
	Α	OR Briefly explain phases of flight.	07	
	В	Discuss the factors affecting selection of engine type. Explain with diagram.	07	
Q-5	A	Discuss what type of loads will be created over pressurized high altitude aircraft fuselages.	07	

B Discuss factors affecting selection of numbers of engines.

A How will you select tail airplane airfoil?

OR

B Which aerodynamic considerations will you take to design a supersonic jet fighter's fuselage?

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