Seat No.:	Enrolment No
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Subject Code:2130106

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III(New) EXAMINATION - SUMMER 2016

Date:31/05/2016

	S	ubject Name: Aircraft Science and Manufacturing Processes		
			Marks: 70	
	In	structions:		
		1. Attempt all questions.		
		 Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 		
		2. Figures to the right material run marins.	MARKS	
Q.1		Short Questions	14	
	1	What is beading?		
	2	What is Standard rivet diameter?		
	3	Define aircraft centre of gravity.		
	4	Define geometric aerodynamic centre.		
	5	Define retractable landing gear.		
	6	Which are primary control surfaces?		
	7	Which are secondary control surfaces?		
	8	Define angle of attack.		
	9	Define stalling of airfoil.		
	10	Define supersonic speed.		
	11	Which are three axis of aircraft?		
	12	For which purpose rudder is used?		
	13	Which component drives axial fan in aircraft engine?		
7 2	14	Define tricycle landing gear.	0.3	
Q.2	(a)	Enlist sheet metal manufacturing processes.	03	
	(b)	What are general principles of adhesive bonding?	04	
	(c)	Draw and very shortly explain hand tools used for sheet metal fabrication.	07	
		OR		
	(c)	Draw and explain wooden wing structure.	07	
Q.3	(a)	Only draw tail wheel geometry of aircraft?	03	
	(b)	Enlist and very shortly explain any two equipments or tools used for fall	oric 04	
		covering of aircrafts.		
	(c)	Draw and explain different components of sheet metal semi monocoque fusel structure.	age 07	
		OR		
Q.3	(a)	Why planking is required on the leading edges of wooden wing?	03	

	(b)	Draw welded steel tube fuselage structure with nomenclature.	04
	(c)	Explain fabric covering techniques on wooden wings.	07
Q.4	(a)	What is need of reinforcement taps in fabric covering?	03
	(b)	How will you mark aircraft registration on painted surfaces?	04
	(c)	How will you fabricate wing tip fairing of wooden wing?	07
		OR	
Q.4	(a)	Why silver color is more preferable on wing rather than black?	03
	(b)	Only draw neat sketches of any four types of beading dyes.	04
	(c)	Draw and explain standard rivet geometry.	07
Q.5	(a)	Only draw different types of heads of different types of rivets.	03
	(b)	Which precautions should be taken to choose wood for aircraft?	04
	(c)	Draw and explain different types of sheet metal shearing techniques.	07
		OR	
Q.5	(a)	Classify different types of aircrafts with respect to applications.	03
	(b)	Draw and very shortly explain any two types of wood cutting equipments.	04
	(c)	How will you select different types of materials for different purposes?	07
