

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V EXAMINATION – WINTER 2025

Subject Code:3150109

Date:17-11-2025

Subject Name:Manufacturing Processes And Production Techniques

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS	
Q.1	(a) What is gusset? How is it useful to give strength to airframes?	03	
	(b) What are the components of wooden wing ribs? Explain each in brief.	04	
	(c) Discuss factors affecting sheet metal parts and joint design.	07	
Q.2	(a) What is punching process?	03	
	(b) Shortly explain sheet metal bending tools for aircraft construction.	04	
	(c) Explain sheet metal fuselage construction with neat sketch of a pressurized aircraft.	07	
OR			
Q.3	(c) Draw and explain Blanking, Punching and piercing of sheet metal.	07	
	(a) How CNC machining is different from conventional machining.	03	
	(b) How inspection of steel tube structures is carried out?	04	
Q.3	(c) Draw different types of rivet and explain its nomenclatures.	07	
	OR		
	(a) List different types of rivets.	03	
Q.4	(b) If there is damage to steel tubes how will it be repaired in aircraft structure?	04	
	(c) Explain the Factors affecting sheet metal parts and joints design.	07	
	(a) What is general principle of adhesive bonding?	03	
Q.4	(b) What is template? Explain with respect to aircraft painting and marking.	04	
	(c) Explain different methods for manufacturing of wings and tails of plane.	07	
	OR		
Q.4	(a) List spray paint equipments.	03	
	(b) Classify glues. Explain their applications.	04	
	(c) How fabrication of fuselage is done?	07	
Q.5	(a) How honey comb structure is stronger than other structure?	03	
	(b) List and explain in brief about the reinforcement material for composite material.	04	
	(c) Explain different types of aircraft composite materials used for airframes.	07	
OR			
Q.5	(a) What is wrap orientation techniques?	03	
	(b) Explain FRP, its manufacturing and machining.	04	
	(c) Write advantages and disadvantages of composite material over aluminum sheet metal.	07	
