

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- V EXAMINATION-SUMMER 2023****Subject Code: 3150109****Date: 23/06/2023****Subject Name: Manufacturing Processes And Production Techniques****Time: 02:30 PM TO 05:00 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 types of glues are used in airframe construction? Explain any three types of glues in one sentence for each.	03
	(b) List out different types of adhesive bonded joints	04
	(c) Explain inspection techniques for aircrafts having wood structures.	07
Q.2	(a) What is gusset? How is it useful to give strength to airframes?	03
	(b) Explain characteristics of fabric materials used for airframe covering.	04
	(c) What types of woods are used to build flying aero models and gliders?	07
	OR	
	(c) What is riveting? Explain Rivet terminology in detail with sketch.	07
Q.3	(a) With neat sketch explain zigzag rivet geometry.	03
	(b) Explain sheet metal rolling technique with neat sketch.	04
	(c) Explain the Factors affecting sheet metal parts and joints design.	07
	OR	
Q.3	(a) Explain blanking process with neat sketch.	03
	(b) Explain difference between punching and drilling process with neat sketch	04
	(c) Briefly explain heat treatment process of parts of aluminum alloy like 2024 T3.	07
Q.4	(a) Explain application of primer.	03
	(b) What is difference between NC and CNC machine?	04
	(c) Write advantages and disadvantages of composite materials over aluminum sheet metal use in aircraft construction.	07
	OR	
Q.4	(a) Why planking is required on the leading edge of wooden wing?	03
	(b) Explain Straight turning, Taper turning, Facing, Knurling operation with neat sketch.	04
	(c) Draw and explain geometry of welded steel tube fuselage structure.	07
Q.5	(a) Define welded joint. Name the type of welding joints.	03
	(b) Write the difference between soldering and brazing.	04
	(c) Explain the process for preparation of surface of an airframe for painting.	07
	OR	
Q.5	(a) Define Rolling, Pitching, Yawing	03
	(b) Write difference between lap and butt joint.	04
	(c) Explain honeycomb sandwich construction by the Fabrication, Machining and forming of FRP.	07
