

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2022****Subject Code:3150109****Date:04-01-2023****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

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|------------|--|-----------|
| Q.1 | (a) What is general principle of adhesive bonding? | 03 |
| | (b) What are the components of wooden wing ribs? Explain each in brief | 04 |
| | (c) What are the precautions need to take by manufacturer before and after the construction of wooden glider airframe? | 07 |
| Q.2 | (a) Define aircraft centre of gravity | 03 |
| | (b) Explain the function of any four equipments used in Spray Painting | 04 |
| | (c) What types of woods are used to build flying aero models and gliders? | 07 |
| | OR | |
| | (c) How will you store aircraft wood before construction? | 07 |
| Q.3 | (a) Explain any one type of sheet metal bending techniques. | 03 |
| | (b) Enlist factors affecting sheet metal parts and joints design. | 04 |
| | (c) Draw and explain different types of sheet metal shearing techniques. | 07 |
| | OR | |
| Q.3 | (a) Explain sheet metal rolling technique with neat sketch. | 03 |
| | (b) What is general principle of adhesive bonding? | 04 |
| | (c) Classify glues. Explain their applications. | 07 |
| Q.4 | (a) What is punching process? | 03 |
| | (b) Shortly explain sheet metal bending tools for aircraft construction. | 04 |
| | (c) Briefly explain sheet metal beading process of weight reduction holes. | 07 |
| | OR | |
| Q.4 | (a) Explain embossing process with neat sketch. | 03 |
| | (b) What is the difference between cylindrical rolling and taper rolling? | 04 |
| | (c) Briefly explain heat treatment process of parts of aluminum alloy like 2024 T3. | 07 |
| Q.5 | (a) Why planking is required on the leading edge of wooden wing? | 03 |
| | (b) Explain rivet terminology with neat sketch. | 04 |
| | (c) Draw and explain geometry of welded steel tube fuselage structure. | 07 |
| | OR | |
| Q.5 | (a) Explain brazing process. | 03 |
| | (b) What is Taper Turning? Explain any one with Neat Sketch. | 04 |
| | (c) How will you cover and reinforce a wooden wing with fabric covering? | 07 |
