

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:3150109****Date:05-12-2023****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 Taper Turning? Explain any one with Neat Sketch. | 03 |
| | (b) | Carry out the comparison of composite material with metals in detail. | 04 |
| | (c) | What types of woods are used to build flying aero models and gliders? | 07 |
| Q.2 | (a) | Why silver color is more preferable on wing rather than black? | 03 |
| | (b) | What is welded joint? And how is it different than riveted joint? | 04 |
| | (c) | How will you store aircraft wood before construction? | 07 |
| OR | | | |
| | (c) | Draw and explain different types of sheet metal shearing techniques. | 07 |
| Q.3 | (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) | Discuss factors affecting sheet metal parts and joint design. | 07 |
| OR | | | |
| Q.3 | (a) | Very shortly explain how will you take care wooden airframes? | 03 |
| | (b) | What types of glues are used in airframe construction? Explain any four types of glues in one sentence for each. | 04 |
| | (c) | What is riveting? Explain Rivet terminology in detail. | 07 |
| Q.4 | (a) | Explain soldering process. | 03 |
| | (b) | Explain usage of hand tools for sheet metal work. | 04 |
| | (c) | What type of wooden material is used to manufacture airframes? | 07 |
| OR | | | |
| Q.4 | (a) | What is difference between NC and CNC machine? | 03 |
| | (b) | Explain application of Fabric covers for Aircraft. | 04 |
| | (c) | Explain the geometry of welded steel tube fuselage structure with neat sketch in detail. | 07 |
| Q.5 | (a) | Explain the Aircraft tubing repair briefly. | 03 |
| | (b) | Define Turning, Taper turning, Facing, Knurling. | 04 |
| | (c) | Explain different types of aircraft composite materials used for airframes. | 07 |
| OR | | | |
| Q.5 | (a) | Briefly explain the Aircraft tubing repair. | 03 |
| | (b) | Explain Extrusion process. | 04 |
| | (c) | Explain advantages and disadvantages of using composite materials. | 07 |
