

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code:3162511

Date:28-05-2025

Subject Name:Advance Material Processing

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) | Explain the concept of pultrusion. | 03 |
| | (b) | Explain filament winding process. | 04 |
| | (c) | Explain Glass melting process in details. | 07 |
| Q.2 | (a) | Give the classification of various glass furnaces. | 03 |
| | (b) | Explain resin transfer molding. | 04 |
| | (c) | Explain Laser Cutting Process in details. | 07 |
| | | OR | |
| | (c) | Explain the process vacuum bagging and filament winding process for manufacturing of composites. | 07 |
| Q.3 | (a) | Give a detailed classification of composites. | 03 |
| | (b) | Explain Liquid phase sintering process. | 04 |
| | (c) | Discuss the application of laser processing for various industries. | 07 |
| | | OR | |
| Q.3 | (a) | Explain application of Laser in Biomedical and nanotechnology. | 03 |
| | (b) | Explain the need for processing aids during ceramic powder processing. | 04 |
| | (c) | Explain concept modelers and the need for the same from industrial perspective. Discuss 3D printer in detail. | 07 |
| Q.4 | (a) | List the types of industrial lasers. | 03 |
| | (b) | Write a short note on: (i) Object Quadra System. (ii) Thermal jet printer | 04 |
| | (c) | Explain the working principle and details of process parameters of an FDM machine. | 07 |
| | | OR | |
| Q.4 | (a) | Write short notes on Genisys Xs printer HP system. | 03 |
| | (b) | Explain the types of glasses along with their properties. | 04 |
| | (c) | Explain in detail about laminated object manufacturing and its application | 07 |
| Q.5 | (a) | Discuss the significance of rapid prototyping with respect to industry. | 03 |
| | (b) | Write a short note on resin film infusion. | 04 |
| | (c) | Explain the injection molding process for processing of ceramic powders. | 07 |
| | | OR | |
| Q.5 | (a) | Explain solid ground curing process and its advantages. | 03 |
| | (b) | Explain the role of binders in ceramic processing. | 04 |
| | (c) | Explain selective laser sintering machine in detail along with its principle and applications. | 07 |
