

Q.P. Code : 559602

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. **ONE** is **compulsory**.
 (2) Attempt any **THREE** questions from remaining **FIVE** questions.
 (3) **Support** your answer with sketch wherever **necessary**
 (4) **All** questions carry **equal** marks.

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| 1. Explain in brief :- | 20 |
| (a) Filament winding process of composite manufacturing. | |
| (b) Plasma Arc Machining. | |
| (c) Thread Milling process. | |
| (d) Gear shaving and Gear grinding process. | |
| 2. (a) Explain the process of Ultrasonic Machining with its advantages, limitations and applications. | 10 |
| (b) Explain the composite manufacturing processes of Pultrusion and Hand Lay-up. | 10 |
| 3. (a) Describe various abrasives and bonds used for the production of grinding wheels. How to specify a grinding wheel? | 10 |
| (b) Briefly, explain the process of thread rolling with its advantages, limitations and applications. | 10 |
| 4. (a) Describe the capabilities and characteristics of machining centers. | 10 |
| (b) Explain the terms; Truing, Glazing, loading, and Balancing in reference with grinding wheels? | 10 |
| 5. (a) Explain with a neat sketch WJM. | 10 |
| (b) State the differences between NC and CNC machine tools. | 10 |
| 6. (a) Describe in detail the processes of Lapping and Roller Burnishing. | 10 |
| (b) Differentiate between gear hobbing and gear shaping methods. | 10 |