

Duration: 3 hours

Max. 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.
- Q.1. Explain in brief :- 20  
 (a) Pultrusion process of composite manufacturing.  
 (b) L.B.M.  
 (c) Thread whirling.  
 (d) Superfinishing processes.
- Q2. (a) Explain the process of Abrasive Water Jet Machining with its advantages, limitations and applications. 10  
 (b) Explain the composite manufacturing processes of Resin Transfer Molding and Filament winding. 10
- Q3. (a) Explain the principle of operation, construction and working of a gear hobbing machine. 10  
 (b) Briefly, explain the process of thread rolling with its advantages, limitations, and applications. 10
- Q4. (a) Differentiate between NC and CNC machine tools. With a neat sketch explain the construction, working and applications of CNC turning center. 10  
 (b) Write a short note on centerless grinding machine. Also, explain the I-S marking system for a grinding wheel? 10
- Q5. (a) Explain with a neat sketch the construction, working and applications E.C.M. 10  
 (b) List various characteristics and capabilities of machining centers. 10
- Q6. (a) Which materials are used as abrasives and bonds for manufacturing of grinding wheels? Describe briefly about their properties and areas of application. 10  
 (b) Write a short note on various gear finishing processes. 10

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