

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
ADVANCED MANUFACTURING PROCESS
(MECHANICAL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Note : Answer ONE question from each unit (5 × 14 = 70 Marks)

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UNIT-I

1. a) How the modern machining process classified based on source of energy, and shapes to be machined? [7M]
- b) What are various types of transducers used in USM? Explain their working principles and compare them. [7M]

(OR)

2. a) Compare and contrast the various unconventional machining processes on the basis of the transfer media and economical aspects. [7M]
- b) Explain Ultrasonic Machining process with a neat sketch. List out its applications. [7M]

UNIT-II

3. a) Discuss any four power circuits used for EDM process. [7M]
- b) Explain the mechanism of material removal during ECG and how is different from ECM? [7M]

(OR)

4. a) Briefly explain the Electro Chemical deburring with a figure. [7M]
- b) What are the materials commonly used for making a tool in ECM? Briefly explain. [7M]

UNIT-III

5. a) State the mechanism of metal removal, merits and demerits of electron beam machining process. [7M]
- b) List out the materials of abrasives and nozzles used in Abrasive jet machining process. [7M]

(OR)

6. a) Describe the process parameters of EBM and influence on machining quality. [7M]
- b) Illustrate the material removal mechanism of AJM process with suitable diagram. [7M]

**UNIT-IV**

7. a) Differentiate between Additive Manufacturing and Conventional Manufacturing. [7M]  
b) With a neat sketch explain the working principle of Stereo Lithography (SLA). [7M]

(OR)

8. a) Discuss the advantage of Additive manufacturing over conventional manufacturing with an example. [7M]  
b) Illustrate the construction and working of Multi Jet Printing (MJP). [7M]

**UNIT-V**

9. a) Explain the LOM with a neat sketch. [7M]  
b) With a neat sketch illustrate Direct Metal Laser Sintering process. State its advantages, disadvantages and applications. [7M]

(OR)

10. a) Discuss the construction and working of Fused Deposition Modeling (FDM) process [7M]  
b) Differentiate between SLS and DMLS. [7M]

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