

Code: 19ME4602C

**III B.Tech - II Semester – Regular Examinations – JUNE 2022****MODERN MANUFACTURING METHODS  
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

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- Note: 1. This question paper contains two Parts A and B.  
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.  
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.  
4. All parts of Question paper must be answered in one place.
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**PART – A**

1. a) List different types of modern machining processes.
- b) How does abrasive flow rate affect the depth cut in abrasive water jet machining?
- c) What is electrochemical grinding?
- d) State the principle of electric discharge grinding.
- e) State the principle involved in the Production of LASER.

**PART – B****UNIT – I**

2. a) Write down various applications of Ultrasonic Machining in detail. 6 M
  - b) Write down the model proposed by Shaw to explain the mechanism of metal removal in ultrasonic machining. 6 M
- OR
3. a) Write down various Applications of Modern manufacturing methods. 6 M

- b) Outline the various parameters, which influences the MRR in USM? 6 M

### UNIT – II

4. a) Outline various parameters, which affects the MRR in Abrasive jet machining. 6 M  
b) Write down various applications and limitations of AJM. 6 M

OR

5. a) Describe various process variables of Abrasive water jet machining. 6 M  
b) Explain with neat sketch abrasive flow finishing system. 6 M

### UNIT-III

6. a) Elaborate the different elements of electrochemical machining. 6 M  
b) Explain the working principle of electrochemical machining with neat sketch. 6 M

OR

7. a) Give a detailed description of three zones of electrochemical grinding. 6 M  
b) Explain the working principle of electrochemical honing and deburring process. 6 M

### UNIT – IV

8. a) Elaborate the mechanism of material removal in EDM. 6 M  
b) Illustrate the different parameters involved in selection of electrode for EDM. 6 M

OR

9. a) Distinguish between thermal and non-thermal processes. 6 M
- b) Write down the various applications of EDM. 6 M

**UNIT – V**

10. a) Write down the various process parameters affecting plasma arc Machining. 6 M
- b) Write down the various applications of EBM. 6 M

OR

11. a) Sketch and explain the process of Plasma Arc Machining. 6 M
- b) Illustrate the working principle of laser beam machining with neat sketch. 6 M