

B

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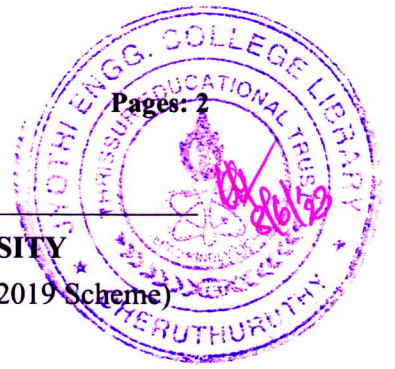
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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Eighth Semester B.Tech Degree Regular Examination June 2023 (2019 Scheme)



**Course Code: MET464**

**Course Name: MICRO AND NANO MANUFACTURING**

**Duration: 3 Hours**

**Max. Marks: 100**

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | Discuss the differences between macro and micro machining.             | (3) |
| 2  | Describe the features of micro grinding process.                       | (3) |
| 3  | List the applications of Water abrasive jet micro machining.           | (3) |
| 4  | Explain Hot embossing process.   | (3) |
| 5  | Describe Magneto rheological finishing process.                        | (3) |
| 6  | Discuss Chemical mechanical polishing.                                 | (3) |
| 7  | Describe CVD diamond technology.                                       | (3) |
| 8  | Explain LIGA process   | (3) |
| 9  | Describe the working principle of Scanning white light interferometry. | (3) |
| 10 | Explain the merits and demerits of On-machine metrology                | (3) |

**PART B**

*Answer any one full question from each module, each carries 14 marks.*

**Module I**

- |    |   |      |
|----|---|------|
| 11 | With a neat sketch, discuss the process of Diamond micro turning. | (14) |
|----|---|------|

**OR**

- |    |  |      |
|----|--|------|
| 12 | With a neat sketch, explain the process of Micro milling. Mention four applications. | (14) |
|----|--|------|

**Module II**

- |    |   |      |
|----|---|------|
| 13 | With a neat sketch, explain micro electric discharge machining and discuss the merits and demerits. | (14) |
|----|---|------|

**OR**

- |    |   |      |
|----|---|------|
| 14 | Discuss micro injection molding and its applications. | (14) |
|----|---|------|

**Module III**

- 15 Explain the process of Magneto rheological abrasive flow finishing with a neat sketch. (14)

**OR**

- 16 Discuss about Ion beam machining with a neat sketch and list the process parameters. (14)

**Module IV**

- 17 Explain the significance of Carbon Nano tubes. List the properties and applications. (14)

**OR**

- 18 Discuss Laser Beam Micro Welding and its applications. (14)

**Module V**

- 19 Discuss the principle and working of Confocal microscope. (14)

**OR**

- 20 With a neat sketch, explain the principle and working of Scanning probe microscopy. (14)

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