

6E7012

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Total No of Pages: **2****6E7012****B. Tech. VI-Sem. (Main / Back) Exam., October - 2020****Mechanical Engineering****6ME2A Newer Machining Methods****Time: 2 Hours****Maximum Marks: 48****Min. Passing Marks: 16***Instructions to Candidates:**Attempt three questions, selecting one question each from any three unit.**All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.**Units of quantities used/ calculated must be stated clearly.**Use of following supporting material is permitted during examination.**(Mentioned in form No.205)*1. NIL2. NIL**UNIT- I**

- Q.1 (a) Distinguish between conventional and unconventional manufacturing processes. [8]
- (b) Explain the Magnetic Abrasive Finishing (MAF) processes. [8]

OR

- Q.1 (a) Explain the Abrasive Flow Machining (AFM) with a neat sketch. [8]
- (b) Explain the Hybrid machining processes. [8]

UNIT- II

- Q.2 (a) Sketch and explain the schematic diagram of Abrasive Jet Machining. Why different abrasives produce different MRR. [8]
- (b) Briefly explain the construction and working of an ultrasonic machining unit with the help of a neat sketch. [8]

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OR

- Q.2 (a) Describe the working principle of Water Jet Machining process along with its application. [8]
- (b) Explain the functions of 'Horn' in USM. What do you understand by 'transducer' and 'magnetostriction effects'? [8]

UNIT- III

- Q.3 (a) List the product applications of Electron Beam Machining (EBM). Why EBM process is performed usually in vacuum chamber? Explain. [8]
- (b) What is plasma torch in Plasma Arc Machining (PAM) process? Discuss the generation of plasma in PAM. [8]

OR

- Q.3 (a) What are the requirements for the tool material for EDM? Discuss various tool materials. [8]
- (b) Briefly describe the generators in EDM process. [8]

UNIT- IV

- Q.4 (a) Describe the working principle of Electro Chemical Grinding (ECG) process. [8]
- (b) Explain the role of Tool-work gap in Electro Chemical Machining (ECM) with neat sketch. [8]

OR

- Q.4 Describe the working principle of Electro-Chemical machining (ECM) processes along with its advantages, disadvantages and applications. [16]

UNIT- V

- Q.5 (a) Distinguish between Micro – machining and Nano-machining. [8]
- (b) What are the benefits and applications of Laser Micromachining? [8]

OR

- Q.5 Explain in detail the nanoscale cutting process. Also highlight the typical advantages, applications and limitations of the process. [16]
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