

**B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

00346

June, 2016

**BIMEE-001 : UNCONVENTIONAL MANUFACTURING
PROCESSES**

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. What are the considerations to decide the economics of a machining process ? Compare the process capabilities and economic parameters of conventional and all types of non-conventional machining. 14

2. (a) Explain photochemical machining with the help of neat sketches. 7
(b) Discuss electrochemical grinding with a suitable sketch. 7

3. (a) Discuss the advantages and limitations of Electron Beam Machining (EBM) over Laser Beam Machining (LBM). 7
(b) With a neat sketch of the set-up explain the principle and operation of Laser Beam Machining. 7

4. (a) Explain the requirements of electrode material used in EDM (Electrical Discharge Machining). 6
- (b) Derive the expression for Material Removal Rate (MRR) in case of electrochemical machining while defining each term appearing in the expression. 8
5. (a) What is explosive forming? Briefly describe different types of explosive forming. 8
- (b) Describe the process of water hammer forming. 6
6. Explain the principle and operation of plasma arc cutting. Also describe the components and process parameters used in it with a neat sketch. 14
7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Rapid Prototyping
- (b) Photolithography
- (c) Cladding
- (d) Abrasive Jet Machining
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