

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

**Term-End Examination**

**00541**

**June, 2019**

**BIMEE-001 : UNCONVENTIONAL MANUFACTURING  
PROCESSES**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Answer any **five** questions. All questions carry  
equal marks.*

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1. (a) Explain the various factors that should be considered during the selection of an appropriate unconventional machine for a given job. 7

(b) Compare and contrast the various unconventional machining processes on the basis of type of energy employed, material removal rate, transfer media and economical aspects. 7

2. (a) Explain the working principle of Electro Chemical Machining (ECM) process. 7
- (b) Briefly discuss the effects of high temperature and pressure of electrolyte on the ECM process. Also discuss the economics of ECM. 7
3. (a) Explain the principle of Electro Discharge Machining process. Specify its applications. 7
- (b) Briefly discuss the mechanism involved in material removal by ultrasonic machining. 7
4. (a) Explain the principle of Electron Beam Machining. Mention its applications. 7
- (b) Discuss the factors that influence the quality of the cut in plasma arc machining. 7
5. (a) How can the welding process be used for cladding application ? Discuss. 7
- (b) Describe the working principle of electromagnetic forming. 7
6. (a) Discuss in brief, the ultrasonic machining process. 7
- (b) Explain the process of explosive compaction with a neat sketch and discuss the influences of its process parameters. 7

7. Write short notes on any *four* of the following:

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Metalizing
  - (b) Electrolytes Used in Electro Chemical Machining (ECM)
  - (c) Laser Beam Machining
  - (d) Water Hammer Forming
  - (e) Diffusion
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