

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

**Term-End Examination**

**June, 2017**

00054

**BIMEE-001 : UNCONVENTIONAL MANUFACTURING  
PROCESSES**

*Time : 3 hours*

*Maximum Marks : 70*

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

1. (a) Explain the various factors that should be considered during the selection of an appropriate unconventional machining process for a given job. 7
  
- (b) What are the limitations of conventional manufacturing processes ? Appreciate the need of unconventional manufacturing process in a manufacturing system. 7

2. (a) Explain the working principle of Electro-Chemical Machining (ECM) process. 7
- (b) Explain how the gap is maintained in Electro Discharge Machining (EDM). Also discuss the importance of flushing the gap. 7
3. (a) Elaborate in detail the Abrasive Jet Machining (AJM) process parameters that influence the rate of material removal and accuracy in machining. 7
- (b) Describe using a neat diagram, the working principle of Laser Beam Machining. 7
4. (a) Explain the working principle of Ultrasonic Machining process describing the features of its set-up. 7
- (b) Why is Electron Beam Machining carried out in vacuum? Describe the above process with a neat sketch. 7
5. (a) Explain the production of plasma and the working principle of plasma arc cutting system. 7
- (b) What are the significant process parameters used in water hammer forming? Explain their effect on process performance. 7



6. (a) Explain the process of explosive compaction with a neat sketch and discuss the influences of its process parameter. 7

(b) Describe the working principle of photo-lithography process with a neat sketch. 7

7. Write short notes on the following :  $4 \times 3 \frac{1}{2} = 14$

(a) Metalizing

(b) Electromagnetic Forming

(c) Underwater Welding

(d) Cladding

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