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BIMEE-001

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

Term-End Examination

December, 2017

00552

**BIMEE-001 : UNCONVENTIONAL MANUFACTURING
PROCESSES**

Time : 3 hours

Maximum Marks : 70

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

1. (a) Prepare a comparative analysis between conventional and non-conventional manufacturing processes. 7
- (b) Explain the various factors that should be considered during the selection of an appropriate unconventional machining process for a given job. 7
2. (a) Discuss the working principle of Electrochemical Machining (ECM) with a neat sketch. 10

- (b) List down the advantages and disadvantages of Laser Beam Machining (LBM). 4
3. (a) What types of lasers are used for material processing application ? Describe how the system can be used for machining purposes. 7
- (b) Explain the working principle of operation on Electron Beam Machining. 7
4. (a) Discuss in detail, the AJM process parameters that influence the rate of material removal and accuracy in machining. 7
- (b) What are the advantages of Electron Beam Machining (EBM) over Laser Beam Machining? 7
5. (a) What is Explosive Forming ? Briefly describe different types of explosive forming. 7
- (b) Discuss in brief, ultrasonic machining process. 7
6. (a) Describe the working principle of photo-lithography process. 7

- (b) Differentiate between Electro Discharge Machining and Electro Discharge Forming. 7
7. (a) How can welding processes be used for the application of cladding ? Discuss. 7
- (b) Explain the processes of plasma arc cutting. 7
8. Write short notes on any *four* of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Rapid Prototyping
- (b) Metallizing
- (c) Selective Laser Sintering
- (d) High Energy Rate Forming (HERF)
- (e) Electrode Materials for Electrical Discharge Machining (EDM)
- (f) Electrolytes used in Electrochemical Machining (ECM)
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