

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

Term-End Examination

December, 2012

**BIMEE-001 : UNCONVENTIONAL
MANUFACTURING PROCESSES**

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions.

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1. (a) What is the difference between conventional and unconventional manufacturing processes. Also write the merits of the latter. 7
 - (b) List down the mechanism of material removal and applications of EDM (Electro Discharge Machining). 7
 2. (a) Explain the principle of ECM (Electrochemical Machining) 7
 - (b) Briefly describe parameters affecting "Metal Removal Rate" in ECM. 7
 3. (a) Explain setup used in Laser Beam Machining (LBM). 10
 - (b) Enumerate various types of Laser sources. 4

4. (a) Draw the schematic layout of Abrasive Jet Machining (AJM) with main parts. 7
- (b) Write down the applications, limitations and advantages of Ultrasonic Machining Process. 7
5. (a) What is Hydroforming ? Briefly describe different types of Hydroforming. 7
- (b) Estimate the thermal velocity acquired by an electron of the work material due to electron bombardment, if the vaporisation temperature of the work material concerned is 3327°C . 7
6. (a) Describe the Electron Beam Machining (EBM). 7
- (b) Explain the process of "Photo Fabrication". 7
7. Answer *any two* of the following : $2 \times 7 = 14$
- (a) Laser Drilling.
- (b) Advantages of waterjet cutting over traditional punching and cutting.
- (c) Characteristics of AJM.
- (d) Plasma Arc Machining (PAM).
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