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**BIMEE-001**

# B.Tech. MECHANICAL ENGINEERING (BTMEVI)

## Term-End Examination

## December, 2013

## BIMEE-001 : UNCONVENTIONAL MANUFACTURING PROCESSES

*Time : 3 hours* *Maximum Marks : 70*

***Note :*** *Answer **any five** questions. Each question carries **equal** marks.*

**1.** Make a detailed comparative analysis between conventional and non conventional manufacturing processes. Use features of raw material, process-performance and quality of product to support your answer. **14**

**2.** List all the process parameters of Abrasive Jet Machining (AJM). How do the operating parameters affect the process performance of AJM ? Explain in detail. List its applications and limitations also. **14**

**3.** Discuss using a neat sketch the working principle of main components of an Ultra-sonic drilling machine. Why the ductile materials erod less than the brittle materials in USM ? Give reasons. List out all process parameters of USM. **14**

4. What is a plasma ? How can it be used for material processing ? What are the different types of plasmatrons used in material cutting applications ? Elaborate your answer in detail. **14**

5. How are high energy rate forming (HERF) processes classified ? Give examples of typical products that are made using each type. Explain any one type of HERF process with suitable diagram. **14**

6. A 5 m wide 10 m long 50 mm thick mild steel plate is to be cladded with stainless steel which process do you recommend ? Explain it in detail. **14**

7. Write short notes in the following : **3.5x4=14**
   (a) Electrolytes used in Electro Chemical Machining (ECM)
   (b) Selective Laser Sintering
   (c) Under water welding
   (d) Electrode Materials for Electrical Discharge Machining (EDM)