

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

Term-End Examination

June, 2014

**BIMEE-001 : UNCONVENTIONAL
MANUFACTURING PROCESSES**

Time : 3 hours

Maximum Marks : 70

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

1. List atleast five different products which cannot be manufactured by conventional manufacturing processes. List the unconventional process which would be suitable for their manufacture. Explain in detail the process to manufacture any one of the cited product. 14

2. (a) Discuss the working principle of Electro Chemical Machining (ECM). Explain the ECM process with various components of its setup. 10
(b) Describe the potential profile across machining gas in ECM. 4

3. (a) What are the types of lasers used for material processing application ? Describe how the system can be used for machining purpose. 10
(b) List down advantages and disadvantages of Laser Beam Machining (LBM). 4

4. (a) What are the advantages of Electro Beam Machining (EBM) over LBM ? 7
(b) With a neat sketch of the setup explain the principle of operation on EBM. 7
5. (a) What is explosive forming? Briefly describe different types of explosive forming. 7
(b) Describe Electromagnetic forming. Enumerate its applications. 7
6. (a) Make a comparison between Oxyacetylene Cutting and Plasma Arc Cutting (PAC). 5
(b) Describe direct arc and indirect arc PAC process in brief. 9
7. Write short notes on the following : 3.5x4=14
(a) Rapid Prototyping
(b) Underwater Welding
(c) Ultrasonic Machining
(d) Laser Beam Machining
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