

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

Term-End Examination

December, 2016

00313

**BIMEE-001 : UNCONVENTIONAL MANUFACTURING
PROCESSES**

Time : 3 hours

Maximum Marks : 70

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

1. (a) Compare and contrast various unconventional machining processes on the basis of type of energy employed, material removal rate, surface finish, material properties, transfer media and economical aspects. 7
- (b) Make a comparison among various non-traditional machining processes in terms of the following : 7
- (i) Mechanics of material removal
 - (ii) Contouring a surface

2. (a) Explain the principle of Abrasive Jet Machining (AJM). Mention all its specific applications. 7
- (b) Briefly discuss the effects of temperature and pressure of electrolytes on the ECM process. Also discuss the economics of ECM. 7
3. (a) Explain the principle of Electro Discharge Machining process and specify its applications. 7
- (b) Briefly discuss the mechanism involved in material removal by Ultrasonic Machining. 7
4. (a) Explain the principle of Electron Beam Machining and mention its applications. 7
- (b) Write the advantages, disadvantages and applications of metallizing. 7
5. (a) Explain the process of explosive welding with neat sketch. 7
- (b) What is meant by 'optical pumping' ? Briefly explain the 'population inversion' with respect to Laser Beam Machining. 7
6. (a) How can welding process be used for cladding application ? Discuss. 7
- (b) Explain the principle of water hammer forming. State its applications. 7

7. (a) Describe the working principle of Plasma Arc Welding. 7
- (b) Differentiate between Electro Discharge Machining and Electro Discharge Forming. 7
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