

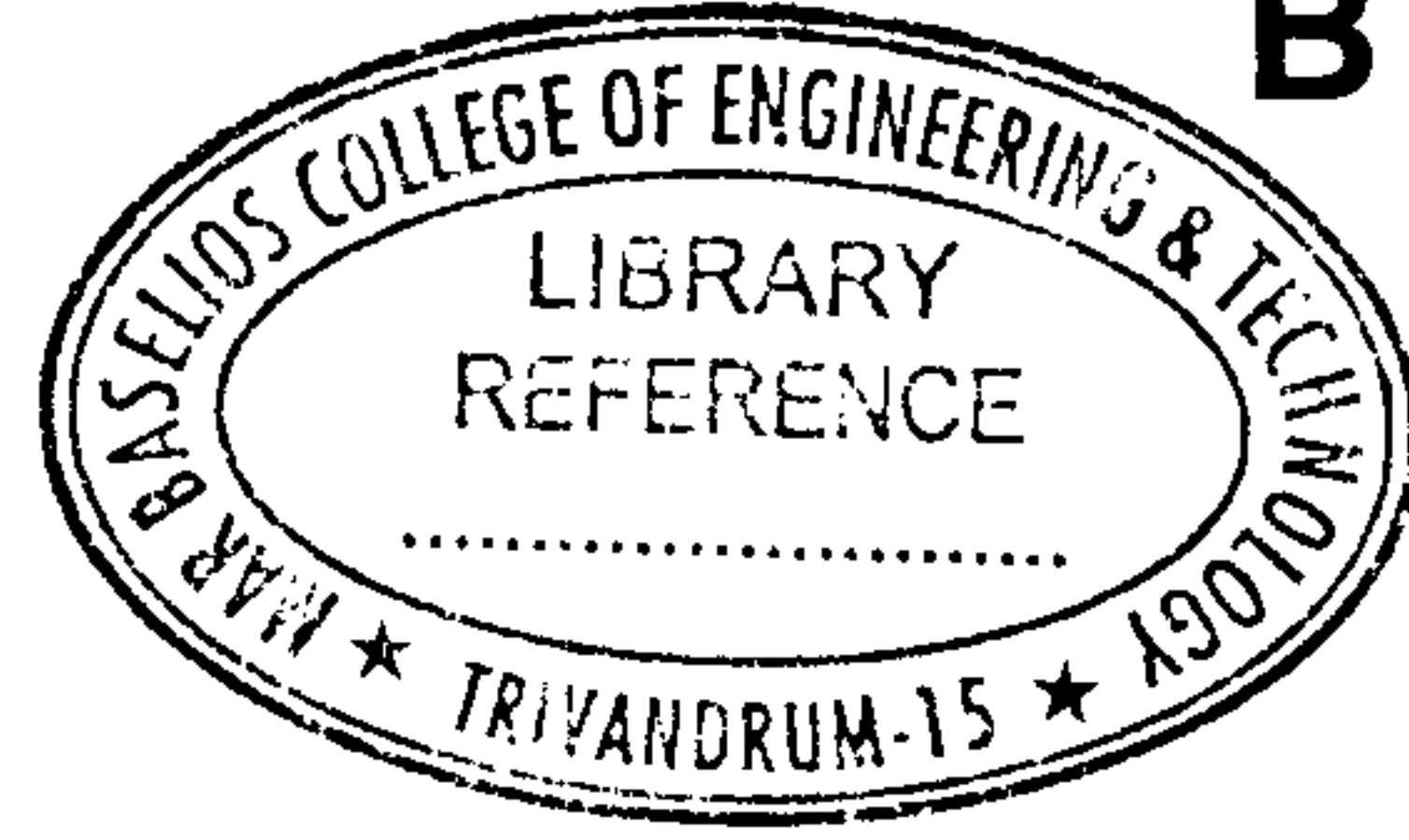


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**B – 3452**

Reg. No. : .....

Name : .....



**Seventh Semester B.Tech. Degree Examination, December 2016**  
**13.706.6 : NON CONVENTIONAL MACHINING TECHNIQUES (MPU)**  
**(2013 Scheme)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** carries **two** marks.

1. Examine how non-traditional machining processes are classified.
2. Illustrate and compare various non traditional machining processes.
3. List the types of work materials for USM.
4. Define the principle of ECM.
5. Identify the limitations of ECM.
6. Show how EBM is different from LBM.
7. Demonstrate the need for transducer in USM.
8. List any two applications of USM.
9. What are the advantages of water jet machining ?
10. What are the types of operations that can be performed in the AJM ?  
**(10×2=20 Marks)**

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## PART – B

Answer **any one full** question from **each** Module. **Each** carries **20** marks.

**Module – I**

11. Classify and discuss the unconventional machining processes based on basic mechanism involved in the processes, source of energy required for the material removal, medium for transfer of energies and type of energy required to shape materials.

**20**

OR

12. a) Analyse the process of EDM and describe the role of each the process parameter on the MRR.  
b) Collect the process of Wire cut EDM and list its advantages and disadvantages, applications, limitations. **(2×10=20 Marks)**

**Module – II**

13. a) Quote ECM process with sketch and discuss influences of process parameters in machining output.  
b) Name ECG process with sketch and state the process capabilities and applications. **(2×10=20 Marks)**

OR

14. a) Explain the process parameters of EBM and influence on machining quality.  
b) Demonstrate the thermal features of LBM. Discuss the performance of various types of lasers. **(2×10=20 Marks)**

**Module – III**

15. Explain in detail about the following USM process parameters :

- i) Metal removal rate
- ii) Tool material
- iii) Tool wear rate
- iv) Surface finish.

**(4×5=20 Marks)**

OR



16. a) Integrate the major elements of the USM equipment. Describe the role of each.
- b) What are the various process parameters affecting the MRR of USM process ?  
(2×10=20 Marks)

**Module – IV**

17. a) Draw the schematic lay out of abrasive jet machining and explain its operational characteristics.
- b) Sketch the water jet cutting unit and also explain the mechanism of jet cutting.  
(2×10=20 Marks)

OR

18. a) Explain the working of water jet machining process with neat diagram.
- b) Compare and discuss the various process parameters of WJM and AJM.  
(2×10=20 Marks)

