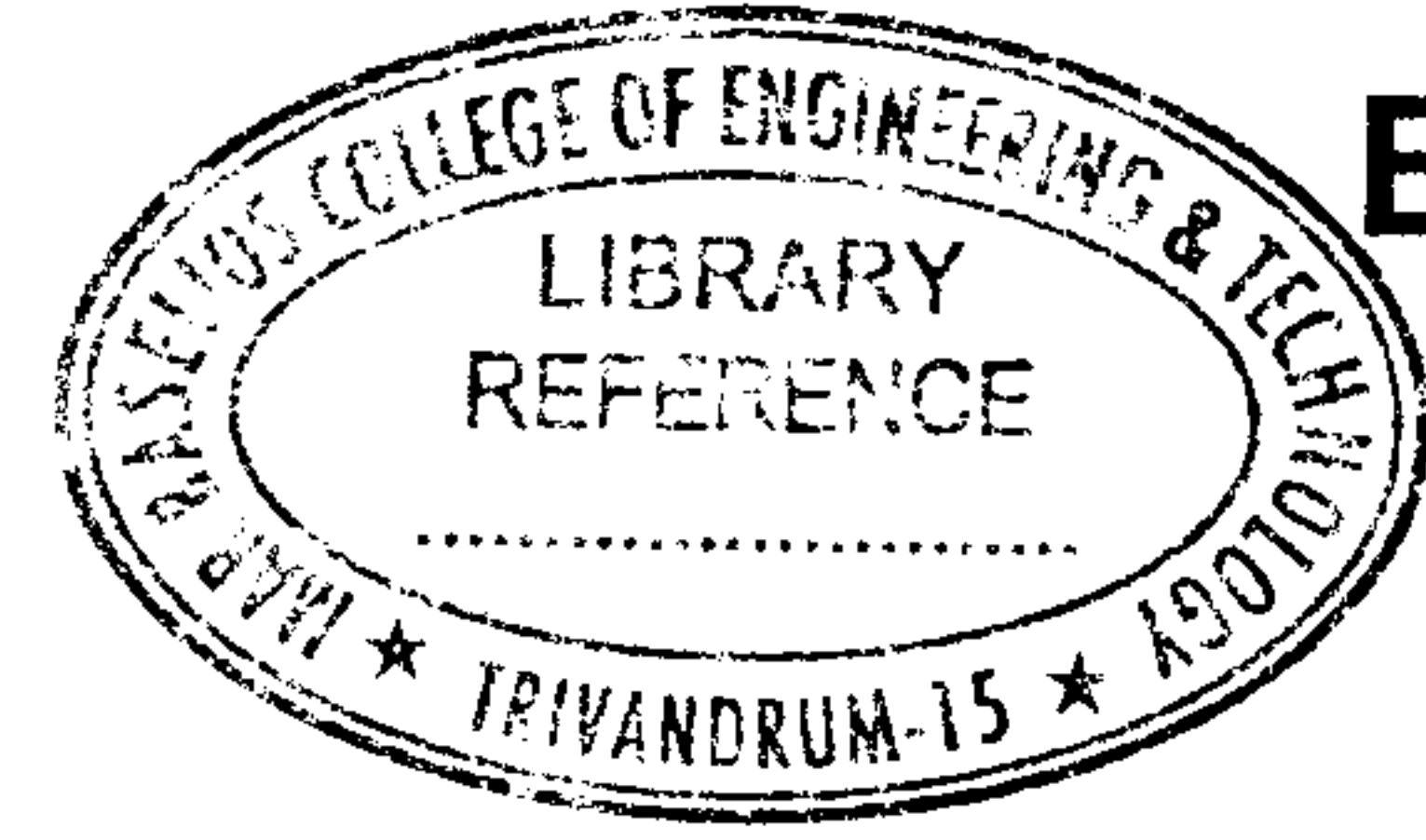




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B- 5273

Reg. No. :

Name :

**Seventh Semester B.Tech. Degree Examination, February 2017
(2008 Scheme)**

08.706.12 : NON CONVENTIONAL MACHINING TECHNIQUES (MPU)

Time : 3 Hours

Max. Marks : 100

Instructions: 1) Part – **A** Answer **all** questions.
2) Part – **B** Answer **any one full** question from **each** Module.

PART – A

(10×4=40 Marks)

1. Enlist the requirements that demand the use of Non-Conventional Machining process.
2. Why the life of the ECG wheel is much higher than the conventional grinding wheel ?
3. What are the desirable properties of the electrolyte used in ECG ?
4. Explain the function of Horn in Ultra Sonic Machining.
5. 'AJM is not recommended to machine ductile materials' – Comment on the statement.
6. What is the effect of Stand-Off-Distance (SOD) on MRR in AJM ?
7. What are the ways of gap-flushing used in EDM ?
8. What are the various process parameters on which the effectiveness of Electro Chemical Grinding Process depends upon ?
9. Name the wire materials which are used in Wire cut EDM.
10. List the limitations of Ultra Sonic Machining (USM).

PART – B

MODULE – I

11. a) What are the basic limitations of Conventional Manufacturing process ? Justify the need of unconventional manufacturing process in today industries. **10**
b) Write a short note on the recent developments in Non-Conventional Machining Techniques. **10**
12. a) Explain the Principles, equipment, dielectric system, electrode, tools, process capabilities and applications of Electro Discharge Machining (EDM). **12**
b) Find the condition for maximum power delivery to the discharging circuit in EDM. **8**

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MODULE – II

13. a) Discuss the Chemistry involved in ECM Process. 8
b) Briefly discuss about the effect of high temperature and pressure of electrolyte on Electro Chemical Machining (ECM) process. 6
c) Discuss about the economics and advantages of ECM. 6
14. a) Discuss in detail about the construction and working of LBM. 10
b) Compare EBM with LBM. 5
c) What are the unique characteristics of LBM process ? 5

MODULE – III

15. a) Make a comparison between Ultra Sonic Machining and conventional grinding. 10
b) What are the actions do the Ultra Sonic vibrations imparted to the fluid medium surrounding the tool have ? What are the process criteria of USM ? What are the various process parameters that govern the process criteria of USM ? 10
16. Write short notes on the following :
- i) Transducers used in Ultra Sonic Machining (USM) Process. 5
 - ii) Effect of amplitude of vibration, frequency of vibration, grain size on MRR in USM. 5
 - iii) Principle and applications of Abrasive Jet Machining (AJM) 5
 - iv) Advantages and Limitations of Water Jet Machining (WJM) 5
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