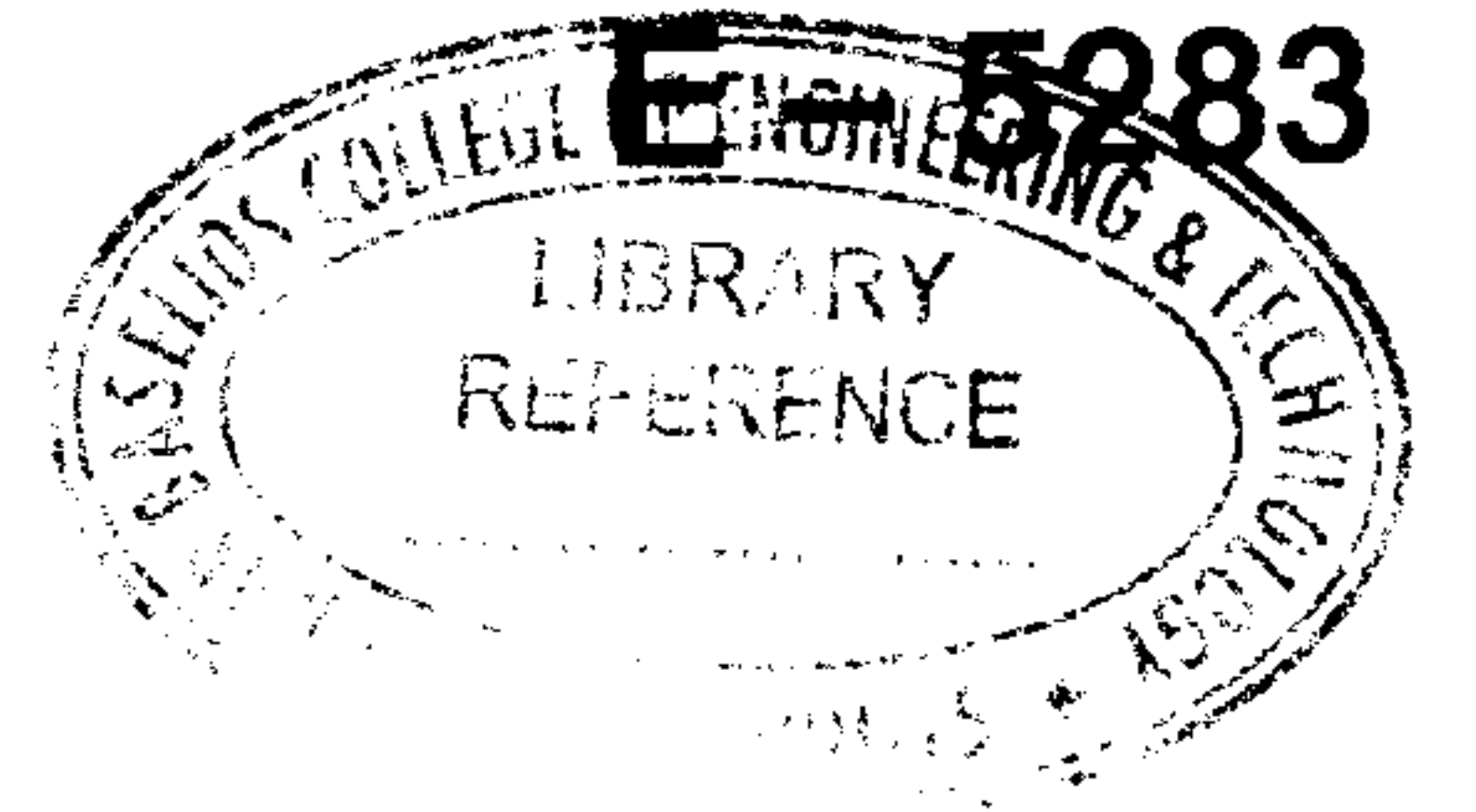




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Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, October 2018  
(2013 Scheme)**

**13.706.6 : NON CONVENTIONAL MACHINING TECHNIQUES (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carries **2** marks.

1. What is the importance of servo mechanism in EDM process ?
2. Differentiate between EDM and Wire Cut EDM.
3. Why we usually use tool electrode as cathode and work piece as anode in non conventional machining processes ?
4. What are the basic requirements of tool material in ECM ?
5. Explain why vacuum is necessary in Electron Beam Machining Process.
6. What is LASER ? Explain how LASER is produced.
7. List the various factors that depend on the Material Removal Rate in USM.
8. What do you mean by nodal point clamping in USM ?
9. Explain how MRR of AJM varies with nozzle tip clearance or SOD.
10. What are the factors that influence the surface finish of the machined surface in WJM ? (10×2=20 Marks)

**PART – B**

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

**Module – 1**

11. a) What are the main requirements of tool materials in EDM process ? Explain different tool material that are used in EDM.  
b) Draw a neat diagram of Wire Cut EDM arrangement and explain the working of Wire Cut EDM process. (2×10=20 Marks)

OR

P.T.O.



12. a) With the help of neat sketches, explain the construction and working of EDM process.
- b) Explain advantages, disadvantages and applications of Wire Cut EDM process. **(2×10=20 Marks)**

### Module – 2

13. a) Explain the chemical analysis of metal removal in ECM process. Give any four examples of electrolyte used in ECM.
- b) Discuss various characteristics of EBM. Also give the advantages and disadvantages of EBM. **(2×10=20 Marks)**

OR

14. a) With the help of neat diagram, explain the working of Electron Beam Machining Process.
- b) Discuss in detail about the advantages and disadvantages of LBM. Also explain the pumping processes in connection with LBM. **(2×10=20 Marks)**

### Module – 3

15. a) With the help of neat diagram, explain the construction and working of magnetostriction transducer in a VSM process.
- b) Give the advantages and the disadvantages of USM. Also discuss about the characteristics of USM. **(2×10=20 Marks)**

OR

16. a) Draw a neat sketch of USM arrangement and explain the working of USM process.
- b) Discuss about the feed mechanism in USM process. Also explain different types of feed mechanism employed in USM. **(2×10=20 Marks)**

### Module – 4

17. a) With the help of neat diagram, explain the working of Water Jet Machining process.
- b) Discuss in detail about the characteristics of AJM. Also give the advantages and specific applications of AJM. **(2×10=20 Marks)**

OR

18. a) Discuss in detail about various process parameters in AJM and explain how they influence the Metal Removal Rate.
- b) Give advantages and disadvantages of WJM. Also explain various characteristics of WJM. **(2×10=20 Marks)**
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