



Reg. No. :

Name :

Seventh Semester B.Tech. Degree Examination, May 2014
(2008 Scheme)
(Elective – III) 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

1. What are the reasons that lead to the development of non conventional machining processes ?
2. List some advantages of EDM process with respect to metal removal rate and surface finish.
3. What are the requirements of dielectric fluids used in EDM ?
4. Give the applications of Electrochemical machining.
5. Explain the suitability of LBM in industrial applications.
6. Explain the mechanism of metal removal in EBM.
7. What are the disadvantages of AJM process ?
8. What are the various groups of materials that can be machined using ultrasonic machining ?
9. What is mining ratio in AJM ?
10. List some materials which cannot be machined by water jet machining.

(10×4=40 Marks)



PART – B
Module – I

11. Explain the effect of the following parameters on metal removal rate during EDM:
- a) Resistance b) Magnitude of current c) Capacitance. **20**
12. a) Differentiate between electro discharge grinding and wire EDM process. **10**
- b) Discuss the advantages of EDM as compared to other non conventional processes with respect to i) metal removal rate ii) accuracy and surface finish. **10**

Module – II

13. a) With neat sketches explain the principle and operation of Electrochemical Machining. **10**
- b) Differentiate between EBM and LBM considering their field of applications. **10**
14. a) Describe the thermal features of melting and evaporation in LBM process. **10**
- b) Describe the effects of temperature and electron pressure on the quality of machining in EBM process. **10**

Module – III

15. a) What are the important parts of a transducer used in ultrasonic machining process ? **8**
- b) Explain the different parameters that influence ultrasonic machining. **12**
16. a) Explain the effect of the following parameters on the metal removal rate on AJM :
- i) Velocity of fluid
- ii) Design of Nozzle
- iii) Gas pressure. **12**
- b) What are the differences between water jet machining process compared to other conventional machining processes with respect to quality, surface finish and metal removal rate ? **8**