

REG. NO:

NAME :

VII SEMESTER B.TECH DEGREE EXAMINATION

13.706.6 NON CONVENTIONAL MACHINING TECHNIQUES (MPU)

Time: 3 Hours

Max. Marks: 100

Part A

(Answer all questions; each carries 2 marks)

1. Enlist the requirement that demands the use of advanced machining process.
2. Why unconventional machining process is not so effective on soft metals like Aluminum?
3. What are functions of dielectric fluid used in EDM and explain its basic requirements.
4. Why vacuum is necessary in Electron Beam machining process?
5. What is the difference between high voltage & low voltage gun used in EBM?
6. What are the special characteristics of laser beam that make it suitable for machining/cutting operations?
7. What do you mean by the term “pumping” related to laser beam production?
8. Explain the feed mechanisms used in Ultrasonic Machining System.
9. What are the characteristics of AJM?
10. What is the principle of WJM?

(10 X 2= 20Marks)

Part B

(Answer any ONE FULL questions; each carries 20 marks)

11. (a) Explain the working principle, elements and characteristics of wire EDM
(b) Explain the different tool materials that are used in EDM

(2X 10 = 20Marks)

OR

12. (a) Explain briefly the advantages of wire EDM process
(b) Explain the classification and characteristics of various spark erosion generators.

(2X 10 = 20Marks)

13. (a) What are the specific advantages of using chemical machining over electro chemical machining? Give some of the practical applications of chemical machining process .

- (b) Explain the process of LBM and PAM with neat sketches **(2X 10 = 20Marks)**

OR

14. (a) Describe the chemistry involved in ECM process
(b) What is EBM? Sketch its set up and indicate its main parts and explain the principle of operation

(2x10=20 Marks)

15. (a) Briefly explain the 2 types of transducers used in ultrasonic machining process.
(b) With a neat sketch explain Ultrasonic Machining

(2x10=20 Marks)

OR

16. (a) Explain the factors affecting MRR in ultrasonic machining process
(b) Explain the different feed mechanisms employed in USM

(15 Marks)

(5 Marks)

17. (a) Explain the method of AJM with help of schematic diagram.
(b) Explain the process parameters in WJM processes.

(2x10=20 Marks)

OR

18. (a) Discuss in detail about the AJM process variables that influence the rate of material removal and accuracy in the machining.
(b) Briefly discuss the application and limitation of WJM.

(15 Marks)

(5 Marks)
