

(Pages : 3)

K – 4120

Reg. No. :

Name :

Seventh Semester B.Tech. Degree Examination, September 2020.

(2013 Scheme)

13.706.6 NON CONVENTIONAL MACHINING TECHNIQUES (MPV)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions, each carries 2 marks.

1. Distinguish traditional and non-traditional machining process.
2. Analyse the industrial needs for unconventional machining process.
3. Describe a few unique benefits of WJM.
4. Define the Electrolytes used in ECM.
5. Point out the application of electro chemical honing.
6. Classify the population inversion between energy levels in LBM.
7. Access the characteristics of good suspension media of the USM process.
8. What do you know about nodal point clamping?
9. Give the applications of water jet machining process.
10. Classify the Process parameters of WJM.

(10 × 2 = 20 Marks)

P.T.O.



PART- B

Answer any **one full** questions, each carries 20 marks.

Module I

11. (a) Describe the different dielectric breakdown mechanisms in EDM.
(b) Demonstrate the EDM, LBM, USM, WJM and AJM in terms of the energies employed.

(2 × 10 = 20 Marks)

OR

12. (a) Assess the various Process parameters of wirecut EDM process.
(b) Describe the process of EDM. its process parameters, advantages, disadvantages and applications.

(2 × 10 = 20 Marks)

Module II

13. (a) Describe the characteristics of electrolyte used in ECM. What are the different process parameters in ECM?
(b) Explain the various factors that affect the MRR in case of ECG process.

(2 × 10 = 20 Marks)

OR

14. (a) What are the features of LBM? Discuss the factors that affect the performance of LBM.
(b) Describe EBM with neat sketch. What are the process parameters the affects its performance.

(2 × 10 = 20 Marks)



Module III

15. (a) What are the functions of the transducer and horns used in USM? List the tool materials.
- (b) Explain construction and working of USM and compare traditional abrasive machining and USM.

(2 × 10 = 20 Marks)

OR

16. (a) Explain the effect of abrasive grain size on the machining rate in USM.
- (b) Elaborate the needs for the development of USM.

(2 × 10 = 20 Marks)

Module IV

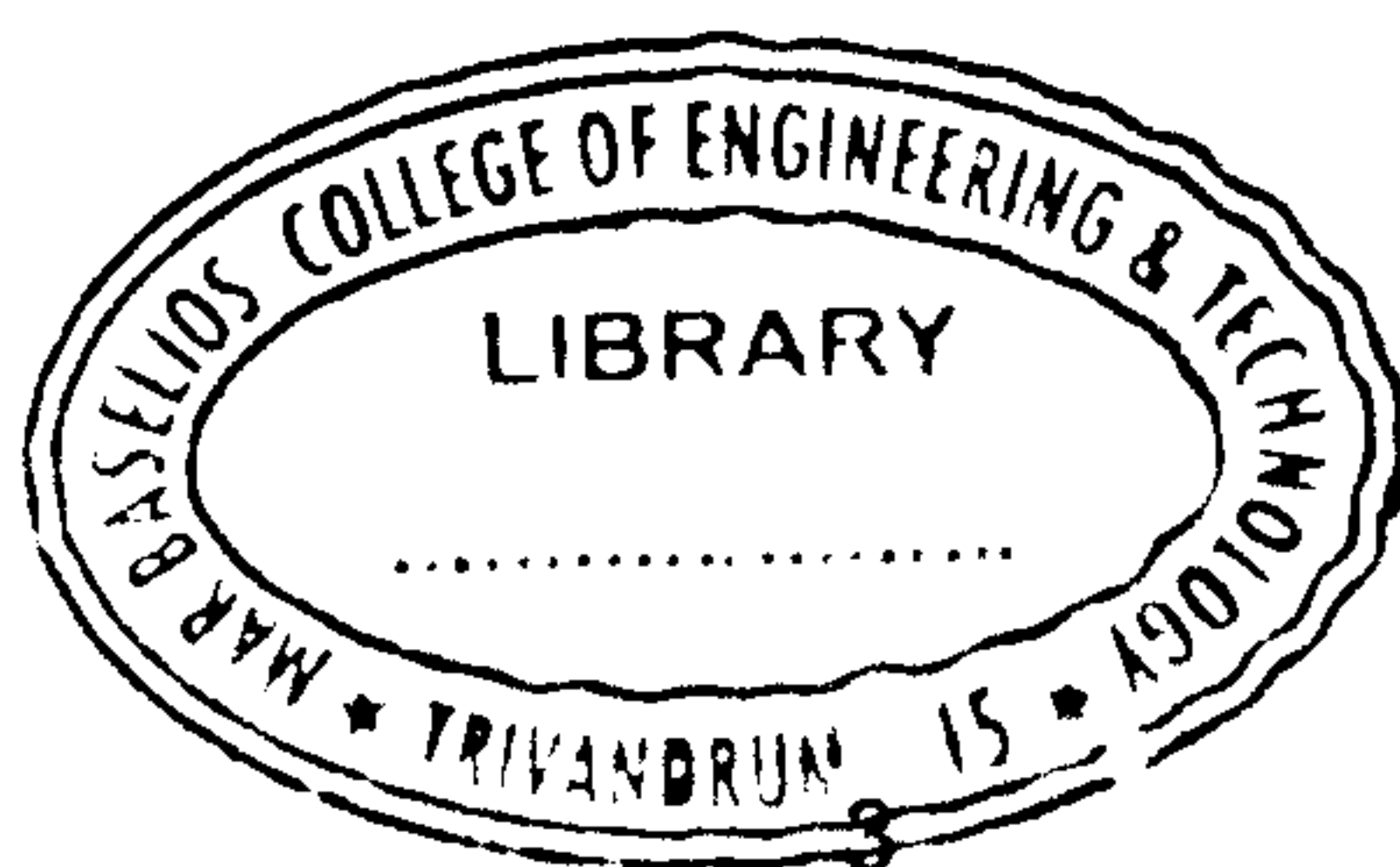
17. Explain in detail about the following terms of AJM and WJM process:
- (a) Process characteristics
- (b) Metal removal rate

(2 × 10 = 20 Marks)

OR

18. (a) Discuss various elements of water jet machining process with neat diagram.
- (b) Elaborate the working principle of AJM in terms of process capabilities and also write its advantages and limitations.

(2 × 10 = 20 Marks)



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