

CBCS SCHEME



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17ME554

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Non Traditional Machining

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define Non Traditional machining. Differentiate between traditional and non traditional machining process. (12 Marks)
- b. Explain the need for non traditional machining process. (08 Marks)

OR

- 2 a. Classify the NTM process on the basis of type of energy, mechanism of metal removal, transfer media, energy sources. (12 Marks)
- b. Write a note on selection of NTM process. (08 Marks)

Module-2

- 3 a. Sketch and explain the principle equipment and operation of USM. (12 Marks)
- b. Discuss the influence of the following parameter on USM process:
 - i) Effect of slurry
 - ii) Abrasive grain size. (08 Marks)

OR

- 4 a. Explain the process variables that influence the metal removal rate in AJM (Abrasive Jet Machining). (10 Marks)
- b. What are advantages and disadvantages of AJM? (10 Marks)

Module-3

- 5 a. Explain with neat sketch, the Electrochemical Machining (ECM) process. (08 Marks)
- b. Explain the effect of following parameters on ECM process:
 - i) Current density
 - ii) Type of electrolyte
 - iii) Tool feed rate. (12 Marks)

OR

- 6 a. Explain with neat sketch, the sequence of process steps involved in chemical blanking. (10 Marks)
- b. Explain the process characteristics in chemical machining process. (10 Marks)

Module-4

- 7 a. Explain with neat sketches the different types of flushing used in EDM-Process. (10 Marks)
- b. What are the advantages, disadvantages and applications of EDM-process? (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. With neat sketch, explain the construction and working of PAM process. (10 Marks)
b. What are the advantages and disadvantages of PAM? (10 Marks)

Module-5

- 9 a. Draw a neat sketch of LBM and explain briefly. (12 Marks)
b. Explain LBM parameters and characteristics. (08 Marks)

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OR

- 10 a. Explain with neat sketch working of Electron Beam Machining (EBM). (12 Marks)
b. What are the advantages and applications of EBM? (08 Marks)
