

GBCS SCHEME



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17ME554

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 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. List and explain the various factors to be considered for selection of machining process. (10 Marks)
b. Distinguish between conventional and unconventional manufacturing process. (10 Marks)

OR

- 2 a. Explain how the non-traditional machining processes are classified. (10 Marks)
b. Justify the need of unconventional manufacturing process in today's industries with suitable examples. (10 Marks)

Module-2

- 3 a. Sketch and explain the working principle of ultrasonic machining process. (10 Marks)
b. Explain with neat sketch various tool feed mechanisms used in ultrasonic machining process. (10 Marks)

OR

- 4 a. Explain in details the process parameters that effect the performance of abrasive jet machining process. (10 Marks)
b. With neat sketch, explain the working of water jet machining process. (10 Marks)

Module-3

- 5 a. Explain the process parameters of electro-chemical machining process. (10 Marks)
b. With neat sketch, explain the working principle of electro chemical machining. Also list the advantages and disadvantages of electrochemical machining. (10 Marks)

OR

- 6 a. Explain with neat block diagram, process steps for chemical milling. (10 Marks)
b. Explain with block diagram steps involved in chemical blanking. (10 Marks)

Module-4

- 7 a. Explain with neat sketch plasma arc machining process. (10 Marks)
b. What are the factors that govern the performance of plasma arc machining? Explain in detail any two factors. (10 Marks)

OR

- 8 a. Explain with the help of neat sketches, the mechanism of metal removal in EDM process and mention its advantages and disadvantages. (10 Marks)
b. Explain with sketch the electrode feed control in electric discharge machining process. Also, explain any two methods of flushing used in EDM. (10 Marks)

Module-5

- 9 a. With neat sketch, explain laser beam machining process. (10 Marks)
b. Discuss various process parameters of LBM process. Also, list the advantages and disadvantages of LBM. (10 Marks)

OR

- 10 a. Explain with neat sketch the working principle of electron beam machining process. (10 Marks)
b. Describe the apparatus used to generate the laser. (05 Marks)
c. Discuss the parameters influencing MRR in EBM. (05 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.