CBCS 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)**

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