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15ME554

Fifth Semester B.E. Degree Examination, June/July 2019
Non-Traditional Machining

Time: 3 hrs.

Max. Marks: 80

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

Module-1

1 a. Explain the need for development of non-traditional machining. **(08 Marks)**
   b. Differentiate between conventional and non-conventional machining processes. **(08 Marks)**

OR

2 a. Explain the various parameters to be considered for the selection of modern machining process. **(08 Marks)**
   b. Classify the modern machining process based on various factors. **(08 Marks)**

Module-2

3 a. With the help of neat sketch, explain the working principle of USM. **(08 Marks)**
   b. What are the advantages, disadvantages and applications of USM process? **(08 Marks)**

OR

4 a. Explain any two tool feed mechanism in USM. **(08 Marks)**
   b. With the help of schematic diagram explain the abrasive jet machining process. **(08 Marks)**

Module-3

5 a. Explain the electrochemical machining process with the help of diagram. **(08 Marks)**
   b. What are the functions of an electrolyte? Mention any two types of electrolytes used in ECM process. **(08 Marks)**

OR

6 a. Explain the different elements of chemical machining process. **(08 Marks)**
   b. What are the advantages and disadvantages of chemical machining process? **(08 Marks)**

Module-4

7 a. Explain the working principle of EDM with a neat sketch. **(08 Marks)**
   b. What are the basic requirements of dielectric fluid used in EDM? **(08 Marks)**

OR

8 a. What is plasma are machining? Explain mechanism of the metal removal. **(08 Marks)**
   b. Mention the advantages, disadvantages and applications of PAM process. **(08 Marks)**

Module-5

9 a. With neat sketch, explain the mechanism of metal removal in laser beam machining process. **(08 Marks)**
   b. Comment on the parameters influencing MRR in EBM. **(08 Marks)**

OR

10 a. Sketch and explain electron beam machining. **(08 Marks)**
   b. Briefly discuss the merits and demerits of EBM. **(08 Marks)**

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