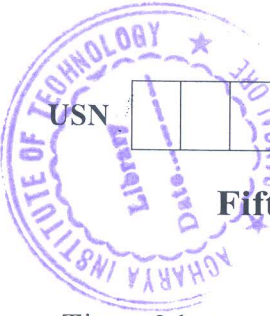


CBCS SCHEME



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17ME554

Fifth Semester B.E. Degree Examination, Aug./Sept. 2020 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. Discuss briefly the classification of Non-Traditional Machining process based on different sources of energy. (08 Marks)
- b. Explain the need for Non-Traditional Machining process. (06 Marks)
- c. List any 3 advantages and limitation of NTM. (06 Marks)

OR

- 2 a. Explain various parameters to be considered for selecting modern machining processes. (08 Marks)
- b. Differentiate between traditional and Non-Traditional Machining process. (06 Marks)
- c. List the applications of NTM. (06 Marks)

Module-2

- 3 a. Explain with graph the effect of various process parameters on Material Removal Rate in USM process. (10 Marks)
- b. Explain with a neat sketch the principle, equipment and operation of USM process. (08 Marks)
- c. List the advantages of Water Jet Machining processes. (02 Marks)

OR

- 4 a. Explain various process variables that influence the MRR in Abrasive Jet Machining process. (10 Marks)
- b. Explain with neat sketch, water jet machining process. (08 Marks)
- c. List any 4 applications of USM process. (02 Marks)

Module-3

- 5 a. Explain various process characteristics in ECM. (06 Marks)
- b. Explain with neat sketch, Electro Chemical Honing Process. (08 Marks)
- c. Explain in brief about Echant, and list the factors to be considered in selecting an echants. (06 Marks)

OR

- 6 a. Explain with neat sketch the sequence of operation in chemical milling using cut and peel maskant. (08 Marks)
- b. Explain the process characteristics of Chemical Machining Process. (06 Marks)
- c. List any 6 applications of ECM process. (06 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.

Module-4

- 7 a. Explain the mechanism of metal removal in Electro Discharge Machining (EDM). (06 Marks)
b. Explain dielectric medium, its function and desirable properties in EDM process. (10 Marks)
c. Explain in brief the 2 modes of operation of DC plasma torches. (04 Marks)

OR

- 8 a. Explain Non-Thermal generation of plasma with a neat sketch and mechanism of metal removal. (10 Marks)
b. Explain briefly plasma arc surfacing and spraying. (06 Marks)
c. Explain with sample sketch Heat Affected Zone (HAZ) in EDM showing all the 3 regions. (04 Marks)

Module-5

- 9 a. Explain with neat sketch Electron Beam Machining Process (EBM). (10 Marks)
b. Explain in brief machining of metal removal in EBM. (04 Marks)
c. List the advantages, limitations and application of Laser Beam Machining (LBM) (06 Marks)

OR

- 10 a. Explain with simple sketch principle of generation of Laser. (06 Marks)
b. Explain with neat sketch Laser Beam Machining Process. (10 Marks)
c. List the advantages and limitation of Electron Beam Machining (EBM). (04 Marks)
