

# CBCS SCHEME

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15ME554

## Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Non Traditional Machining

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. How do you classify Non-traditional machining processes? Discuss briefly. (08 Marks)  
b. Compare the traditional and non-traditional machining processes. (08 Marks)

OR

- 2 a. Explain the need for non-traditional machining processes. (08 Marks)  
b. Write in brief note on the selection of non traditional machining processes. (08 Marks)

### Module-2

- 3 a. With a neat sketch, explain the working principle and operation of USM process. (08 Marks)  
b. Discuss the influence of the following parameters on USM process: (08 Marks)  
(i) Amplitude and frequency of vibration.  
(ii) Abrasive grain size.  
(iii) Effect of slurry.  
(iv) Applied static load.

OR

- 4 a. Explain the process variables that influence the metal removal rate in abrasive jet machining. (08 Marks)  
b. Mention any two advantages, disadvantages and applications of water jet machining process. (08 Marks)

### Module-3

- 5 a. Briefly explain the electrolytes used in ECM process. (08 Marks)  
b. With a schematic diagram, explain the Electro Chemical Honing process. (08 Marks)

OR

- 6 a. List out the various process parameters and briefly explain their effects on chemical machining process. (08 Marks)  
b. Write a short note on chemical blanking. (08 Marks)

### Module-4

- 7 a. With a neat sketch, briefly explain the Feed control in EDM process. (08 Marks)  
b. What are the requirements of Dielectric fluid? Mention any two dielectric fluids used in EDM process. (08 Marks)

OR

- 8 a. With a neat sketch, briefly explain PAM process. (08 Marks)  
b. Discuss some of the important considerations in the design of plasma Torch in PAM. (08 Marks)

### Module-5

- 9 a. With a neat sketch, briefly explain the principle and working of laser beam machining. (08 Marks)  
b. What are the advantages and limitations of LBM process? (08 Marks)

OR

- 10 a. With a neat sketch, briefly explain working of electron beam machining. (08 Marks)  
b. Write the applications and limitations of Electron Beam Machining (EBM). (08 Marks)

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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.