EPCET LIBRARY BANGALORE-49

CBCS SCHEME

USN | | | | | | | | | | |

21ME751

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2026
Non Traditional Machining

Time: 3 hrs. Max. Marks: 100

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

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-1

1 a. Define Non-Traditional Machining. Give complete classification of NTM. **(10 Marks)**

b. Distinguish between Conventional Machining and Non-Traditional Machining. **(10 Marks)**

OR

2 a. Justify the need for NTM. Mention the specific applications of NTM process. **(10 Marks)**

b. Describe the physical parameters and process capability of NTM process. **(10 Marks)**

Module-2

3 a. Characterize the equipment used for Ultrasonic Machining (USM). **(10 Marks)**

b. Describe the effect of following process parameters of Abrasive Jet Machining.

i) Abrasive flow rate.
ii) Nozzle tip distance or stand off distance.
iii) Abrasive Grain Size.
iv) Nozzle design. **(10 Marks)**

OR

4 a. Characterize the tool feed mechanism used in Ultrasonic Machining. **(10 Marks)**

b. Describe the working principle of Abrasive Jet Machining. **(10 Marks)**

Module-3

5 a. Describe the working of Electro Chemical Grinding (ECG) with neat sketch. **(10 Marks)**

b. Illustrate the Chemistry of ECM process. **(10 Marks)**

OR

6 a. Describe the following elements of Chemical Machining: **(10 Marks)**

i) Etchants.

ii) Maskants.

b. Illustrate the Chemical Blanking process with a neat schematic representation. **(10 Marks)**

Module-4

7 a. Describe travelling wire EDM process with schematic representation. **(10 Marks)**

b. Describe the four types of Flushing methods used in Electric Discharge Machining. **(10 Marks)**

OR

8 a. Describe non thermal generation of plasma in Plasma Arc Machining. **(10 Marks)**

b. Distinguish between Transferred and Non Transferred Arc Plasma torch mode of operation. **(10 Marks)**

Module-5

9 a. Describe CO_2 Laser used in the Laser Beam Machining. **(10 Marks)**

b. Illustrate process parameters of Electron Beam Machining. **(10 Marks)**

OR

10 a. Discuss the equipment used for Electron Beam Machining with schematic representation. **(10 Marks)**

b. Enumerate the advantages, limitations and applications of Laser Beam Machining. **(10 Marks)**

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