

## IV B.Tech II Semester Regular/Supplementary Examinations, July - 2021

**UNCONVENTIONAL MACHINING PROCESSES**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Write the applications of ultrasonic machining. [2]
- b) Compare the CHM with ECM with respect to their process parameters. [3]
- c) Define over cut in EDM process? [2]
- d) What are the characteristics of laser used in laser beam machining? [2]
- e) What is the basic heating phenomenon that takes place in plasma arc welding? [2]
- f) Whether abrasive flow machining process has capability to correct large surface irregularities such as deep scratches or large bumps"? Comment [3]

**PART-B (4x14 = 56 Marks)**

2. a) How will you analyses the applicability of different machining processes to different types of materials, namely metals, alloys, and non metals? [7]
- b) Discuss the effects of various process parameters of ultrasonic machining on MRR. [7]
3. a) Write short notes on
  - (i) the economics of electrochemical machining
  - (ii) applications of electrolytic grinding process [10]
- b) What are the specific advantages of using chemical machining over electrochemical machining? [4]
4. a) Discuss the factors influencing the choice of electrode material in EDM. [7]
- b) Briefly explain flushing. Enumerate any two methods of flushing used in EDM. [7]
5. a) Explain the process of EBM with a neat diagram. [7]
- b) Explain the lasing process in Gas Laser process giving neat sketch. [7]
6. a) List the general guidelines for designing the plasma torch. [6]
- b) List the safety precautions, advantages, limitations and applications of PAM process. [8]
7. a) In AJM, how is material removal rate increased? State how nozzle life is improved in such a machining process [6]
- b) Describe the elements of abrasive flow machining giving a neat sketch [8]