

Code: ME7T5B

**IV B.Tech - I Semester – Regular/Supplementary Examinations
March - 2021**

**ADVANCED MACHINING PROCESSES
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) Write the desirable properties of abrasives used in ultrasonic machining system.
- b) Classify the advanced machining techniques.
- c) Mention different types of abrasives used in abrasive jet machining.
- d) What is the principle involved in abrasive jet machining.
- e) Write the major applications of shaped tube electrolytic machining.
- f) What is the function of maskants in chemical machining process.
- g) Distinguish between chemical machining process and Electrochemical machining process.
- h) Write the working principle of EDM process.
- i) What is the function of vacuum chamber in EBM process.
- j) Write the desirable properties of laser beam.
- k) Write the working principle of plasma arc machining.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Discuss the influence of process parameters on the performance of Ultrasonic machining. 8 M
- b) Explain magnetostriction transducer and ultrasonic transducer in ultrasonic machining system. 8 M
3. a) Write the working principle, applications and limitations of AJM, WJM and AWJM processes. 8 M
- b) Explain the mechanism of magnetic abrasive finishing. 8 M
4. a) Explain the working of electrochemical grinding process with a neat sketch. 8 M
- b) Discuss the working principle of electrochemical deburring process with the help a of neat sketch. 8 M
5. a) Discuss the working principle and basic elements of Wire EDM machining process. 8 M
- b) Explain electron beam gun power supply, vacuum system and machining chamber in EBM. 8 M

6. a) Explain in brief the production of laser beam and working principle of LBM. 8 M
- b) Write the working principle of plasma arc machining (PAM) and explain the process parameters that govern PAM. 8 M