

Code: ME7T5B

**IV B.Tech - I Semester – Regular / Supplementary Examinations
JANUARY - 2022**

**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) What are the basic components of ultrasonic machining system?
- b) How does the metal removal takes place in ultrasonic machining process?
- c) Write short notes on the effect of abrasive grain size on MRR in USM.
- d) Reuse of abrasives is not recommended in AJM. Why?
- e) Discuss the effect of nozzle orifice diameter on performance of WJM process.
- f) Explain the terms maskants and etchants.
- g) Discuss about electro chemical honing and deburring Processes.
- h) Explain the working Principle of Electron Beam machining Process.
- i) What are the Process parameters of Electric Discharge Machining process?
- j) What are the applications of Laser Beam machining (LBM) Process?

k) Discuss about metal removal mechanism in Plasma arc machining Process.

PART – B

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

3 x 16 = 48 M

2. a) Explain the classification of modern machining Process.

10 M

b) Discuss the advantages and limitations of ultrasonic machining process.

6 M

3. a) Illustrate the WJM system and locate various elements in it and discuss the significance of important process parameters in WJM process.

8 M

b) Discuss the process parameters affecting material removal in AJM.

8 M

4. a) Explain the working principle of Chemical machining process with neat sketch.

8 M

b) Discuss how Process parameters of ECM Process effect the Material Removal Rate.

8 M

5. a) Describe the working principle of Wire-EDM process with neat sketch. 8 M
- b) Discuss advantages and limitations of Electron Beam Machining process. 8 M
6. a) Describe the working principle of Laser beam Machining process with neat sketch. 8 M
- b) Discuss about advantages and limitations of Plasma Arc Machining process. 8 M