

Code: 20ME4501C

III B.Tech - I Semester – Regular Examinations - DECEMBER 2022

**MODERN MACHINING METHODS
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Classify various Modern machining processes and mention the advantages and Limitations of modern machining processes.	L2	CO1	7 M
	b)	Explain the USM machine setup and discuss various feed mechanisms.	L2	CO1	7 M
OR					
2	a)	What are the major considerations in the process selection and write down the applications of various kinds of modern machining processes in detail.	L2	CO1	7 M
	b)	Write the different types of abrasives used in USM.	L2	CO1	7 M

UNIT-II					
3	a)	Write the names of various elements of Abrasive Water Jet Machining (AWJM) and explain them in brief.	L2	CO1	7 M
	b)	Mention the applications and limitations of AJM.	L2	CO1	7 M
OR					
4	a)	Explain the method of AJM with help of schematic diagram.	L2	CO1	7 M
	b)	Explain the process parameters in WJM process.	L2	CO1	7 M
UNIT-III					
5	a)	Briefly discuss Electro chemical deburring process.	L2	CO2	7 M
	b)	With the help of a simple schematic diagram, explain the working of Electro chemical machining process.	L3	CO2	7 M
OR					
6	a)	Discuss about the electro chemical honing and electro chemical grinding.	L2	CO2	7 M
	b)	With a neat sketch explain shaped tube electrolytic machining.	L3	CO2	7 M
UNIT-IV					
7	a)	What are the basic requirements of tool materials in EDM process? Name any four tool materials with their specific applications.	L2	CO3	7 M

	b)	With a neat sketch, describe the mechanism of material removal in EDM.	L3	CO3	7 M
OR					
8	a)	What is flushing in EDM process? Explain about various flushing techniques.	L2	CO3	7 M
	b)	Explain the different types of control circuits used in EDM process.	L3	CO3	7 M
UNIT-V					
9	a)	Sketch the electron beam gun and explain the function of each part.	L2	CO4	7 M
	b)	Discuss the factors that affect the quality of the product machined using plasma machining process.	L3	CO4	7 M
OR					
10	a)	With a neat sketch, explain the process of LBM along with the effect of all the process parameters.	L2	CO4	7 M
	b)	Explain the working principle involved in plasma machining method and discuss the surface finish and tolerances obtained in PAM.	L3	CO4	7 M