Code No.: ME511PE	R20	H.T.No.			8	R						

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - June- 2025
UNCONVENTIONAL MACHINING PROCESSES
(MECH)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1.	a)	Classify different unconventional machining processes.	[2M]
	b)	Name the important factors that should be considered in the selection of an unconventional machining process for a given job.	[2M]
	c)	List out the applications of water jet machining.	[2M]
	d)	List the common abrasives used in abrasive jet machining.	[2M]
	e)	Enumerate the advantages of electric discharge machining (EDM).	[2M]
	f)	Mention the role of dielectric fluid in EDM.	[2M]
	g)	Can you machine electrically non -conducting materials using electron beam machining process?	[2M]
	h)	Differentiate between thermal and non-thermal processes in electron beam machining.	[2M]
	i)	List out the advantages of plasma arc machining.	[2M]
	j)	What do you mean by plasma?	[2M]

PART-B **(50 Marks)**

2.	Give the complete classification of modern machining processes and give their applications.	[10M]
	OR	
3.	Discuss the recent developments in ultrasonic machining.	[10M]
4.	Explain the basic working principle of abrasive jet machining with suitable diagram.	[10M]
	OR	
5.	Explain the working principle of electro chemical Grinding and write its applications.	[10M]
6.	Explain the applications of wire electric discharge machining and compare with electric discharge machining.	[10M]
	OR	
7.	Describe the mechanism of material removal in EDM process with the neat sketch.	[10M]
8.	Explain about the generation of electron beam and how it is controlled during machining process.	[10M]
	OR	
9.	Discuss the process parameters of electron beam machining and their influence on machining quality.	[10M]
10.	Discuss the applications of plasma for machining and also manufacturing industries.	[10M]
	OR	
11.	Explain the process parameters, accuracy and surface finish of plasma in manufacturing industry.	[10M]

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