U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester : V**

Branch: Mechanical Engineering **Duration: 3 hrs.**

Course Code: 23ME5PENTM **Max Marks: 100**

Course: Non-Traditional Machining

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

				CO	PO	Marks
			UNIT - I			
1	a)		Distinguish between Conventional and Non-conventional machining processes.	CO1	PO1	**10**
	b)		Discuss in detail the classification of NTM processes.	CO1	PO1	**10**
			OR			
2	a)		Explain the process parameter in Ultrasonic machining.	CO2	PO1	**10**
	b)		Discuss the working principle of abrasive jet machining with a neat diagram.	CO2	PO1	**10**
			UNIT - II			
3	a)		Discuss the following w.r.t Abrasive waterjet machining i). Effect of abrasive flow rate and grain size on MRR ii). Effect of Mixing ratio on MRR iii). Effect of Nozzle pressure on MRR	CO2	PO1	**10**
	b)		Highlight the applications and limitations of abrasive waterjet machining.	CO2	PO1	**10**
			OR			
4	a)		Discuss the working principle of abrasive flow machining with a neat sketch.	CO2	PO1	**10**
	b)		Discuss the merits, demerits and applications of the abrasive flow machining process.	CO2	PO1	**10**
			UNIT - III			
5	a)		Discuss the working principle of electro chemical machining with a neat sketch.	CO3	PO1	**10**

		b)	Explain the process variables of chemical machining process.	*CO3*	*PO1*	**10**
			OR			
	6	a)	Explain the role of tool electrode and dielectric fluids in EDM.	*CO3*	*PO1*	**10**
		b)	Discuss the applications of Wire EDM.	*CO3*	*PO1*	**10**
			UNIT - IV			
	7	a)	Explain the working principle of electron beam machining process with a neat sketch.	*CO3*	*PO1*	**10**
		b)	Write short notes on i). Applications of laser beam drilling ii). Laser beam welding	*CO3*	*PO1*	**10**
			OR			
	8	a)	Discuss the steps in plasma arc cutting process.	*CO3*	*PO1*	**10**
		b)	What is thermal deburring? Explain the process with its merits.	*CO3*	*PO1*	**10**
			UNIT - V			
	9	a)	Discuss on fused deposition modeling technique.	*CO4*	*PO1*	**10**
		b)	Elaborate the steps involved in laminated object manufacturing.	*CO4*	*PO1*	**10**
			OR			
	10	a)	Explain the working principle of Selective laser sintering with a neat sketch.	*CO4*	*PO1*	**10**
		b)	Explain the three main phases of solid ground curing process.	*CO4*	*PO1*	**10**

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