CBCS SCHEME

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BME755A

Seventh Semester B.E/B.Tech. Degree Examination, Dec.2025/Jan.2026
Non-Traditional Machining

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
1	a.	Define Non-Traditional Machining (NTM) and explain its need.	5	L1	CO1
	b.	Classify NTM processes based on the type of energy used, giving one example each.	5	L2	CO1
	c.	Discuss the selection criteria for choosing on NTM process for a given job.	10	L3	CO1
		OR			
2	a.	Compare traditional and non-traditional machining processes.	10	L1	CO1
	b.	List advantages, limitations and applications of NTM processes.	10	L2	CO1
		Module – 2			
3	a.	Explain with neat sketch the construction and working of Ultrasonic Machining (USM).	8	L2	CO2
	b.	Describe process parameters affecting MRR and surface finish in USM.	8	L3	CO2
	c.	List advantages, limitations and applications of USM.	4	L1	CO2
		OR			
4	a.	Explain the working principle and construction of Abrasive Jet Machining (AJM) with neat sketch.	8	L2	CO2
	b.	Discuss the effect of process parameters such as carrier gas pressure, abrasive type and stand – off distance.	8	L3	CO2
	c.	State advantages and applications of AJM.	4	L1	CO2
		Module – 3			
5	a.	Explain with neat sketch the construction and working of Electro Chemical Machining (ECM).	8	L2	CO3
	b.	Discuss process parameters affecting performance of ECM.	8	L3	CO3
	c.	Differentiate between Electrochemical Grinding (ECG) and Electrochemical Honing (ECH).	4	L2	CO3

		OR			
6	a.	Explain with neat sketch the working of Chemical Machining (CHM) process.	8	L2	CO3
	b.	Describe Maskants and Etchants used in CHM.	6	L3	CO3
	c.	Write advantages, limitations and applications of CHM.	6	L1	CO3
		Module – 4			
7	a.	Explain the construction and working of Electrical Discharge Machining (EDM).	8	L2	CO4
	b.	Describe functions of dielectric fluid and flushing methods in EDM.	6	L3	CO4
	c.	Explain the principle and working of Wire EDM (WEDM).	6	L2	CO4
		OR			
8	a.	Explain the set up and working of Plasma Arc Machining (PAM) with neat sketch.	8	L2	CO4
	b.	Discuss process parameters and safety precautions in PAM.	8	L3	CO4
	c.	Mention advantages and limitations of PAM.	4	L1	CO4
		Module – 5			
9	a.	Explain the principle, setup, working of Laser Beam Machining (LBM).	10	L2	CO5
	b.	Write advantages, limitations and applications of LBM.	5	L1	CO5
	c.	Explain how laser parameters influence machining accuracy and surface quality.	5	L2	CO5
		OR			
10	a.	Explain the principle and working of Electron Beam Machining (EBM).	10	L2	CO5
	b.	Compare LBM and EBM based on principle, Equipment and applications.	5	L2	CO5
	c.	Write advantages, limitations and applications of EBM.	5	L1	CO5

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