

CBCS SCHEME - Make-Up Exam

USN

BME405A

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Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025

Non - Traditional Machining



Date: 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.

Module - 1			M	L	C
Q.1	a.	Define Non-Traditional Machining. Why it is necessary? Explain briefly.	08	L2	CO1
	b.	Classify the non-traditional machining based on the nature of energy employed in machining.	06	L2	CO1
	c.	List the factors influencing for selection of NTM process and explain any two.	06	L2	CO1

OR

Q.2	a.	Distinguish between conventional and non-conventional machining processes.	10	L2	CO1
	b.	List any four applications of NTM.	04	L1	CO1
	c.	List any three advantages and limitations of NTM.	06	L1	CO1

Module - 2

Q.3	a.	What is Ultrasonic Machining (USM)? Explain the ultrasonic machining (USM) process with schematic diagram.	10	L2	CO2
	b.	List the applications, advantages and disadvantages of ultrasonic (USM) process.	10	L1	CO2

OR

Q.4	a.	Explain the working principle of Abrasive Jet Machining (AJM) with the help of neat sketch.	10	L2	CO2
	b.	Explain any five process parameters of Abrasive Jet Machining (AJM).	10	L2	CO2

Module - 3

Q.5	a.	What are the elements of Electro Chemical Machining (ECM) process? Explain any three.	08	L2	CO3
	b.	Explain with neat sketch Electro Chemical Horning (ECH).	06	L2	CO3
	c.	Explain the following Electro Chemical Machining (ECM) process parameters : (i) Current Density (ii) Tool Feed Rate (iii) Gap between Work piece and tool	06	L2	CO3

OR

Q.6	a.	What are the elements of Chemical Machining Process? Explain.	08	L2	CO3
	b.	Explain with neat sketch of Chemical Blanking Process.	06	L2	CO3
	c.	List the advantages and disadvantages of Chemical Machining Process.	06	L1	CO3

Module – 4

Q.7	a.	Explain with sketch, the mechanism of metal removal in electric discharge machining (EDM).	10	L2	CO4
	b.	List the advantages , disadvantages and applications of Electric Discharge Machining (EDM).	10	L2	CO4

OR

Q.8	a.	Explain with neat sketch working principle of Plasma Arc Machining (PAM).	10	L2	CO4
	b.	Discuss some of the important considerations in design of plasma torch in Plasma Arc Machining (PAM).	10	L2	CO4

Module – 5

Q.9	a.	With a neat sketch, explain working principle of Laser Beam Machining (LBM).	10	L2	CO5
	b.	Explain with neat sketch types of LASER used in Laser Beam Machining (LBM).	10	L2	CO5

OR

Q.10	a.	Explain with the help of neat sketch working principle of Electron Beam Machining (EBM).	10	L2	CO5
	b.	List the advantages, disadvantages and applications of Electron Beam Machining (EBM).	10	L1	CO5

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