CBCS SCHEME

USN | | | | | | | | | | |

BME405A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2026
Non Traditional Machining

ACHARYA INSTITUTE OF TECHNOLOGY * LIBRARY * BANGALORE *

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.

		Module – 1	M	L	C
Q.1	a.	Define Non Traditional Machining Process. Give complete classification of NTM.	10	L2	CO1
	b.	Justify the need of unconventional manufacturing process in today's industries.	06	L2	CO1
	c.	List the application of NTM.	04	L1	CO1
		OR			
Q.2	a.	List and explain the various factors to be considered for selection of machining process in NTM.	10	L2	CO1
	b.	Differentiate between Conventional and Non Conventional Machining process with examples.	06	L1	CO1
	c.	List any 4 advantages and limitation of NTM.	04	L1	CO1
		Module – 2			
Q.3	a.	Describe the effect of following process parameters on Ultrasonic Machining: (i) Amplitude and Frequency of vibration of the tool (ii) Grain size (iii) Slurry concentration (iv) Viscosity (v) Static load	10	L2	CO2
	b.	With neat sketch explain the working principle of USM with application of USM.	10	L2	CO2
		OR			
Q.4	a.	Explain the effect of following variables that influence the MRR in AJM with neat sketch: (i) Standoff distance (ii) Type of abrasive (iii) Carrier gas (iv) Velocity of abrasive jet (v) Work material	10	L2	CO2
	b.	Sketch and explain AJM.	10	L2	CO2

		Module – 3			
Q.5	**a.**	Explain the following in Chemical Machining Process: (i) Maskants (ii) Etchants	**08**	**L2**	**CO3**
	b.	With a neat sketch explain the ECG.	**08**	**L2**	**CO3**
	c.	Differentiate between Chemical Milling and Chemical Blanking.	**04**	**L2**	**CO3**
		OR			
Q.6	**a.**	Describe various process parameters affecting ECM.	**10**	**L2**	**CO3**
	b.	With a neat sketch explain the working principle of Chemical Machining Process.	**10**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	With a neat sketch explain the working principle of PAM with advantages.	**10**	**L2**	**CO4**
	b.	Distinguish between Non Transferred and Transferred Plasma torch mode of operation.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	With a neat sketch explain the working principle of EDM.	**10**	**L2**	**CO4**
	b.	With a neat sketch explain Travelling Wire EDM.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Elucidate process parameters and process capabilities of EBM.	**10**	**L2**	**CO5**
	b.	Illustrate the working principle of EBM with a neat sketch.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain the working principle of LBM. List application of LBM.	**10**	**L2**	**CO5**
	b.	What are the characteristics of CO_2 and Nd-YAG (Neodymium Yttrium – Aluminium Garnet) Lasers?	**06**	**L2**	**CO1**
	c.	What are process parameters of LBM and also mention limitation of LBM.	**04**	**L2**	**CO5**

* * * * *