CBCS SCHEME

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BME405A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024
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.

		Module – 1	M	L	C
Q.1	a.	Define Non-traditional machining process. Write the classification of NTM.	8	L1	CO1
	b.	Justify the need of non-traditional machining process.	6	L2	CO1
	c.	List the applications of NTM.	6	L1	CO1
		OR			
Q.2	a.	Differentiate between Traditional and Non-traditional machining processes.	10	L2	CO1
	b.	Explain the physical parameters and process capability of the Non-traditional machining processes.	10	L2	CO1
		Module – 2			
Q.3	a.	With a neat sketch, explain the working principle of ultrasonic machining.	10	L2	CO2
	b.	Explain the effector process parameters of Ultrasonic machining.	10	L2	CO2
		OR			
Q.4	a.	With a neat sketch, explain the working principle of Abrassive Jet Machining (AJM).	10	L2	CO2
	b.	Explain process parameters on Abrasive Jet Machining.	10	L2	CO2
		Module – 3			
Q.5	a.	With a neat sketch, explain the working principle of Electro Chemical Grinding (ECG).	10	L2	CO3
	b.	Explain the following in chemical machining process: (i) Maskants (ii) Etchants	10	L2	CO3
		OR			
Q.6	a.	Explain with flow chart the chemical blanking process. Mention its applications.	10	L2	CO3
	b.	Describe the various process parameters affecting ECM.	6	L2	CO3
	c.	List the advantages and disadvantages of ECM.	4	L2	CO3
		Module – 4			
Q.7	a.	Explain with a neat sketch, the non-thermal generation of plasma and mechanism of metal removal in PAM.	10	L2	CO4
	b.	With a schematic representation, explain the travelling wire EDM processes.	10	L2	CO4

OR					
Q.8	**a.**	Differentiate between transferred and non transferred arc plasma torch mode of operation.	**8**	**L2**	**CO4**
	b.	Explain with a neat sketch, the plasma arc machining.	**8**	**L2**	**CO4**
	c.	What are the advantages and disadvantages of EDM?	**4**	**L1**	**CO4**
Module – 5					
Q.9	**a.**	With a neat sketch, explain Laser Beam Machining (LBM).	**10**	**L2**	**CO5**
	b.	Explain the process parameters of Electron Beam Machining.	**10**	**L2**	**CO5**
OR					
Q.10	**a.**	With a neat sketch, explain Electron Beam Machining.	**10**	**L2**	**CO5**
	b.	Explain with a neat sketch, the ND-YAG laser used in the laser beam machining.	**10**	**L2**	**CO5**

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