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DEPARTMENT OF MECHANICAL ENGINEERING

Question Bank

SUBJECT CODE AND TITLE	21ME751 Non Traditional Machining		
SCHEME	2021	BATCH	2021-25
SEMESTER& SECTION	VII AI&ML		
FACULTYNAME	Ms. Annapoorna K		

Q.No.	Question	Marks	RBT *	COs
Module 1				
1	Define Non Traditional Machining process. Explain the need for nontraditional Machining process.	6	L2	CO1
2	Differentiate between traditional and non-traditional machining	8	L2	CO1
3	Briefly explain the general classification of Non-traditional machining processes	5	L2	CO1
4	Discuss briefly the classification of NTM based on nature of energy employed in machining	6	L2	CO1
5	Write a brief note on selection of non-traditional machining processes	10	L2	CO1
6	What are the advantages, limitations and applications of non-traditional machining processes	10	L2	CO1
7	Explain the following selection parameters of Non-Traditional machining process: i. Physical parameters ii. Process capability iii. Economics of the process iv. Capability to shape	10	L2	CO1
Module 2				
1	With a neat sketch explain the construction and working principal of Ultrasonic Machining (USM).	10	L2	CO2
2	Discuss the effect of the following process parameters on MRR and surface finish obtained in ultrasonic machining. i. Effect of amplitude and frequency ii. Effect of abrasive grain diameter iii. Effect of slurry, tool & work material.	10	L2	CO2
3	Explain the influence of process parameters on Material removal rate in USM	10	L2	CO2
4	Briefly explain the Process characteristics of Ultrasonic Machining (USM),Material removal rate, tool wear, accuracy, surface finish	10	L2	CO2
5	What are the advantages, limitations and applications of Ultrasonic Machining (USM)	10	L2	CO2
6	With a neat sketch briefly explain the construction and working principal of Abrasive Jet Machining (AJM).	10	L2	CO2

7	Briefly explain the process parameters of Abrasive Jet Machining (AJM)- Carrier gas, type of abrasive, work material, stand-off distance (SOD).	10	L2	CO2
7	Briefly explain the Process characteristics of Abrasive Jet Machining (AJM), Material removal rate, Nozzle wear, accuracy & surface finish.	10	L2	CO2
8	Briefly explain the advantages, limitations and applications of Abrasive Jet Machining (AJM).	10	L2	CO2
Module 3				
1	With a neat sketch briefly explain the construction and working principal of Electrochemical machining (ECM) with Chemistry of ECM.	10	L2	CO3
2	Briefly explain the process parameters of Electrochemical machining (ECM) listed below. Current density, Tool feed rate, Gap between tool & work piece, velocity of electrolyte flow, type of electrolyte, its concentration temperature, and choice of electrolytes.	10	L2	CO3
3	Briefly explain on ECM Tooling: ECM tooling technique & example, Tool & insulation materials.	10	L2	CO3
4	Briefly explain the advantages, limitations and applications of Electrochemical machining (ECM)- ECG and ECH	10	L2	CO3
5	With a neat sketch briefly explain the construction and working principal of Chemical Machining (CHM) with resist and etchant.	10	L2	CO3
6	Briefly explain on the Types of chemical machining process-chemical blanking process, chemical milling process	10	L2	CO3
7	Briefly explain the Process characteristics of A Chemical Machining (CHM), material removal rate, accuracy, surface finish	10	L2	CO3
8	Briefly explain the advantages, limitations and applications of Chemical Machining (CHM).	10	L2	CO3
Module 4				
1	With a neat sketch briefly explain the construction and working principal of Electrical Discharge Machining (EDM).	10	L2	CO4
2	Briefly explain on Flushing types; pressure flushing, suction flushing, side flushing, pulsed flushing of EDM.	10	L2	CO4
3	Briefly explain on dielectric medium-its functions & desirable properties, electrode feed control system.	10		
4	Briefly explain on EDM process parameters: Spark frequency, current & spark gap, surface finish, Heat Affected Zone	10	L2	CO4
5	Briefly explain the advantages, limitations and applications of Electrical Discharge Machining (EDM).	10	L2	CO4
6	Briefly explain on Electrical discharge grinding, Traveling wire EDM.	10		
7	With a neat sketch briefly explain the construction and working principal of Plasma Arc Machining (PAM).	10	L2	CO4
8	Briefly explain on Plasma torch and non-thermal generation of plasma	10		
9	Briefly explain the process parameters of Plasma Arc Machining (PAM).	10	L2	CO4
10	Briefly explain the Process characteristics and Safety precautions of Plasma Arc Machining (PAM).	10	L2	CO4
11	Briefly explain the advantages, limitations and applications of Plasma Arc Machining (PAM)	10	L2	CO4

	Module 5			
1	With a neat sketch briefly explain the construction and working principal of Laser Beam Machining (LBM).	10	L2	CO5
2	Briefly explain the process parameters of Laser Beam Machining (LBM).	10	L2	CO5
3	Briefly explain on characteristics of Laser Beam Machining (LBM).	10	L2	CO5
4	Briefly explain the advantages, limitations and applications of Laser Beam Machining (LBM)	10	L2	CO5
5	With a neat sketch briefly explain the construction and working principal of Electron Beam Machining (EBM)	10	L2	CO5
6	Briefly explain on the process parameters of Electron Beam Machining (EBM)	10	L2	CO5
7	Briefly explain the Process characteristics of Electron Beam Machining (EBM)	10	L2	CO5
8	Briefly explain the advantages, limitations and applications of Electron Beam Machining (EBM)	10	L2	CO5

Course Coordinator

Module Coordinator

Program Coordinator/ HOD