



**SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**

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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Modern Machining Methods (19ME0326)

Course & Branch: B.Tech - MECH

Regulation: R19

Year & Sem: IV-B.Tech & I-Sem

UNIT –I

1		Discuss the Modern Machining Methods with their advantages in the current industry.	L2	CO1	12M
2	(a)	Explain the need and characteristics for Modern Machining Methods.	L2	CO1	6M
	(b)	What are the advantages, disadvantages and applications of Non-Traditional Machining Methods.	L1	CO1	6M
3		Explain the differences between Conventional and Non-Conventional machining are used.	L2	CO1	12M
4		Discuss the classification of Non-Traditional Machining Processes and their machining tools.	L2	CO1	12M
5	(a)	Illustrate a neat sketch, and explain the working process of the Ultrasonic Machining Process (USM).	L4	CO1	6M
	(b)	Mention the advantages, disadvantages, and applications of the Ultrasonic Machining Process.	L2	CO1	6M
6		Analyze the effects of the following parameters on MRR as applied to the Ultrasonic Machining Process (USM). (i) Amplitude & Frequency of Vibrations, (ii) Grain Size (iii) Applied Static Load (iv) Effect of Slurry	L3	CO1	12M
7		Explain the working principle of Abrasive Jet Machining (AJM) and also describe its parts briefly.	L2	CO1	12M
8	(a)	Explain the working principle of water jet machining (WJM).	L4	CO1	6M
	(b)	What are the advantages, disadvantages and applications of water jet machining (WJM).	L1	CO1	6M
9	(a)	List out the Machining techniques and write a short note need for MRR in Industrial sectors.	L1	CO1	6M
	(b)	What are the advantages, disadvantages and applications of MRR.	L1	CO1	6M
10	(a)	Illustrate the Constriction parts of Ultrasonic Machining.	L2	CO1	6M
	(b)	What are the advantages, disadvantages and applications of Abrasive Jet Machining (AJM).	L2	CO1	6M

UNIT –II

1	(a)	Discuss about Process Parameters of MRR, Power Circuits, Tool Wear in EDM machining process	L4	CO2	6M
	(b)	Write a short note on optimization of Wire Electrical Discharge Machining and its applications.	L2	CO2	6M
2		Explain the parts and working principle of EDM (Electrical Discharge machining) with a neat sketch.	L2	CO2	12M
3	(a)	List out Types and Mechanisms of tool wear.	L2	CO2	6M
	(b)	List the advantages, disadvantages and applications of EDM (Electrical Discharge Machining).	L2	CO2	6M
4	(a)	What is flushing, and explain any two methods of flushing in the EDM process.	L3	CO2	6M
	(b)	What are the functions of dielectric fluid in EDM (Electrical Discharge Machining).	L3	CO2	6M
5	(a)	Explain the working principle of wire cut EDM.	L2	CO2	6M
	(b)	With a neat sketch, explain the working of a Wire Electrical Discharge Machining Process (WEDM).	L1	CO2	6M
6	(a)	List the advantages, disadvantages and applications of WIRE Electrical Discharge machining.	L2	CO2	6M
	(b)	What are the functions and properties of Dielectric.	L2	CO2	6M
7		Explain the parameters for improved the Electrical Discharge Machining (EDM) process.	L5	CO2	12M
8		With a neat sketch, explain the construction and working of an electrical discharge grinding (EDG) process.	L1	CO2	12M
9	(a)	Give a brief note on the advantages, disadvantages, and applications of the Electrical Discharge Grinding (EDG) process.	L4	CO2	6M
	(b)	List out the Parameters that effect EDG and limitations	L2	CO2	6M
10		Differentiate between EDM (Electrical Discharge Machining) and Electrical Discharge Grinding (EDG) process.	L5	CO2	12M

UNIT-III

1		Discuss the need for Electro Chemical Machining (ECM) and its applications.	L4	CO3	12M
2	(a)	Discuss the function of electrolytes in this process of ECM.	L1	CO3	12M
	(b)	What are the advantages, disadvantages and applications of Electro Chemical Machining?			

3		Explain the parts and working principle of chemical machining with a neat sketch.	L2	CO3	12M
4		Draw the schematic layout of the Electro Chemical Machining (ECM) setup and explain the major parts in it.	L2	CO3	12M
5	(a)	Write the advantages, disadvantages and applications of Electro Chemical Machining (ECM).	L2	CO3	6M
	(b)	Discuss the types and significant techniques used for Chemical Machining Operations	L3	CO3	6M
6	(a)	Explain the working principle of Electro Chemical Machining (ECM) process.	L5	CO3	6M
	(b)	List out the major techniques used in the Chemical machining process.	L2	CO3	6M
7		Explain the parts and working principle of the Electro Chemical Grinding (ECG) process with a schematic diagram.	L1	CO3	12M
8	(a)	Write short note on electrolytes used in Electro Chemical Machining (ECM).	L1	CO3	6M
	(b)	Discuss the surface finish, accuracy and economic aspects of Electro Chemical Machining (ECM).	L1	CO3	6M
9	(a)	Write the advantages, disadvantages and applications of Electro Chemical Grinding (ECG).	L4	CO3	6M
	(b)	Write a short note on electrochemical honing (ECH) and the tool construction process	L1	CO3	6M
10	(a)	Explain the working principle of the Electro-Chemical Honing (ECH) process with a schematic diagram and specify the parameters.	L2	CO3	6M
	(b)	Write the advantages, disadvantages and applications of Electro Chemical Honing (ECH).	L2	CO3	6M

UNIT-IV

1		Draw the schematic layout of the Electron Beam Machining (EBM) set-up and explain the major parts in it.	L1	CO4	12M
2	(a)	Explain the working principle of the Electron beam machining process	L2	CO4	6M
	(b)	Write the advantages, disadvantages Electron Beam Machining (EBM).	L2	CO4	6M
3		Explain the working principle of the Ion Beam Machining (IBM) process with a schematic diagram.	L1	CO4	12M
4	(a)	Draw the schematic layout of Laser Beam Machining (LBM) set-up and explain briefly.	L4	CO4	6M
	(b)	Write the advantages, disadvantages, and applications of Laser Beam Machining (LBM).	L2	CO4	6M
5		Differentiate between Electron Beam Machining (EBM) and Laser Beam Machining (LBM).	L3	CO4	12M

6	(a)	Write the advantages, disadvantages, and applications of Ion Beam Machining	L2	CO4	6M
	(b)	Differentiate between Ion Beam Machining and Electron Beam Machining.	L2	CO4	6M
7		Draw the schematic layout of Plasma Arc Machining (PAM) set-up and explain its parts.	L2	CO4	12M
8	(a)	Write the advantages, disadvantages, applications of Plasma Arc Machining (PAM).	L1	CO4	6M
	(b)	Explain the parts of Laser Beam Machining (LBM) briefly.	L1	CO4	6M
9		Differentiate between Plasma Arc Machining and Ion Beam Machining.	L2	CO4	12M
10.		Differentiate between Plasma Arc Machining (PAM) and Laser Beam Machining (LBM).	L1	CO4	12M

UNIT-V

1		Discuss briefly about the need of Micro fabrication Techniques, its advantages, disadvantages, and applications.	L2	CO5	12M
2		Explain about the Micro Fabrication Technique - Lithography with neat Lithography flow diagram.	L1	CO5	12M
3		Explain about the Micro Fabrication Technique of Thin-Film Deposition and show classifications in the form of layout.	L1	CO5	12M
4	(a)	Discuss about the Micro Fabrication Technique-Doping.	L2	CO5	6M
	(b)	Write a short note on doping technique of Sol-gel method.	L1	CO5	6M
5		Explain about the Micro Fabrication Technique of Chemical vapor deposition with neat diagram.	L1	CO5	12M
6		Explain about the Micro Fabrication Technique of Physical vapor deposition with a neat diagram.	L1	CO6	12M
7		Discuss briefly about the need of Nano fabrication Techniques and specify advantages and disadvantages.	L2	CO6	12M
8		Explain about Nanofabrication Techniques-E-Beam Nanofabrication.	L1	CO6	12M
9		Explain about Nanofabrication Techniques- Scanning Probe Technique with neat diagram.	L1	CO6	12M
10	(a)	Explain the types of microfabrication techniques used in Industrial sectors.	L2	CO6	6M
	(b)	Discuss briefly about the its advantages, disadvantages and applications of Scanning Probe Microscopy.	L2	CO6	6M

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