



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

Siddharth Nagar, Narayanavanam Road – 517583

**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code: MMM(18ME0341)**

**Course & Branch: B.Tech - MECH**

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

**Regulation: R18**

**UNIT -I**

1		Discuss about the following			
		i. List the important requirements of modern machining methods.	L2	CO1	2M
		ii. Write down any two applications of USM.	L2	CO1	2M
		iii. Write down any two applications of AJM Machining.	L2	CO1	2M
		iv. Write down any two applications of WJM Machining.	L2	CO1	2M
	v. List the advantages of Ultrasonic Machining.	L2	CO1	2M	
2	a	Explain the need of Modern Manufacturing Methods.	L2	CO1	5M
	b	What are the advantages of Non-Traditional Machining Methods?	L1	CO1	5M
3		Explain the basic differences Between Traditional And Non-Traditional Manufacturing Processes are used.	L2	CO1	10M
4		With block diagram, discuss the classification of Non-Traditional Machining Processes.	L2	CO1	10M
5	a	With a neat sketch, explain the working process of Ultrasonic Sonic Machining Process (USM).	L2	CO1	5M
	b	Mention advantages and disadvantages of Ultrasonic Machining Process.	L2	CO1	5M
6		Analyze the effects of the following parameters on MRR as applied to Ultrasonic Machining Process (USM). a) Amplitude & Frequency of Vibrations b) Grain Size c) Applied Static Load d) Effect of Slurry	L3	CO1	10M
7		Explain the working principle of Abrasive Jet Machining (AJM) and also process characteristics.	L2	CO1	10M
8	a	What are the applications, advantages and disadvantages of water jet machining (WJM)?	L4	CO1	5M
	b	What are the advantages and disadvantages of water jet machining (WJM)?	L1	CO1	5M
9		What are the applications, advantages and disadvantages of Abrasive Jet Machining (AJM)?	L1	CO1	10M
10		Discuss the effect of stand of distance (or) nozzle tip distance, water pressure, nozzle material on MRR and surface finish in	L2	CO1	10M

		Water Jet Machining (WJM).			
--	--	----------------------------	--	--	--

### UNIT –II

1	Discuss about the following				
		i. List the important requirements of EDM Process.	L2	CO2	2M
		ii. Write down any two applications of EDM.	L2	CO2	2M
		iii. Write down any two applications of WIRE EDM Machining.	L2	CO2	2M
		iv. Write down any two applications of EDG Machining.	L2	CO2	2M
	v. List the advantages of EDG Process.	L2	CO2	2M	
2		Explain the working principle, machining process of EDM (Electrical Discharge machining) with neat sketch.	L2	CO2	10M
3	a	List the advantages and disadvantages of EDM (Electrical Discharge Machining).	L2	CO2	5M
	b	Lists the Applications of EDM (Electrical Discharge machining).	L2	CO2	5M
4	a	What is flushing and explain any two methods of flushing in EDM process.	L3	CO2	5M
	b	What are the functions of dielectric fluid in EDM (Electrical Discharge Machining)?	L3	CO2	5M
5	a	Explain the working principle of wire cut EDM.	L2	CO2	5M
	b	With a neat sketch explain the construction and working of a Wire Electrical Discharge Machining Process (WEDM).	L1	CO2	5M
6	a	List the advantages and disadvantages of WEDM (WIRE Electrical Discharge machining).	L2	CO2	5M
	b	List the Applications of WEDM (WIRE Electrical Discharge machining).	L2	CO2	5M
7		Explain the choice of parameters for improved surface finish and accuracy of Electrical Discharge Machining (EDM) process.	L5	CO2	10M
8		With a neat sketch explain the construction and working of an electrical discharge grinding (EDG) process.	L1	CO2	10M
9	a	Give a brief note on advantages and limitations of Electrical Discharge Grinding (EDG) process.	L4	CO2	5M
	b	Give a brief note on applications of Electrical Discharge Grinding (EDG) process.	L2	CO2	5M
10		Differentiate between EDM (Electrical Discharge Machining) and Electrical Discharge Grinding (EDG) process.	L5	CO2	10M

### UNIT-III

1	Discuss about the following				
		i. List the important requirements of Chemical machining Process.	L2	CO3	2M
		ii. Write down any two applications of Chemical machining Process.	L2	CO3	2M
		iii. Write down any two applications of ECM Machining.	L2	CO3	2M
	iv. Write down any two applications of ECH Machining.	L2	CO3	2M	

		v. List the advantages of ECG Process.	L2	CO3	2M
2		Give brief note on metal removal in maskants, etchants and process variables of a Chemical Machining Process.	L1	CO3	10M
3		What are the advantages, disadvantages and applications of Chemical Machining?	L2	CO3	10M
4		Draw the schematic layout of Electro Chemical Machining (ECM) set up and explain the major elements in it.	L2	CO3	10M
5		Write the advantages, disadvantages and applications of Electro Chemical Machining (ECM).	L2	CO3	10M
6		Explain the principle of metal removal in Electro Chemical Machining (ECM) process. Discuss the function of electrolyte in this process.	L5	CO3	10M
7		Explain the working principle of Electro Chemical Grinding (ECG) process with a schematic diagram and specify the parameters.	L1	CO3	10M
8	a	What are the different types electrolytes used in Electro Chemical Machining (ECM)?	L1	CO3	5M
	b	Discuss the surface finish, accuracy and economic aspects of Electro Chemical Machining (ECM).	L1	CO3	5M
9		Write the advantages, disadvantages and applications of Electro Chemical Grinding (ECG).	L4	CO3	10M
10	a	Explain the working principle of Electro Chemical Honing (ECH) process with a schematic diagram and specify the parameters.	L2	CO3	5M
	b	Write the advantages, disadvantages and applications of Electro Chemical Honing (ECH).	L2	CO3	5M

#### UNIT-IV

1		Discuss about the following			
	a	List the Major elements of Electron Beam Machining (EBM).	L2	CO4	2M
	b	List the Major elements of Laser Beam Machining (LBM).	L2	CO4	2M
	c	Define the Principle of Electron Beam Machining (EBM).	L1	CO4	2M
	d	Define the Principle of Laser Beam Machining (LBM).	L1	CO4	2M
	e	List the advantages of Plasma Arc Machining.	L2	CO4	2M
2		Draw the schematic layout of Electron Beam Machining (EBM) set up and explain the major elements in it.	L1	CO4	10M
3		Write the advantages, disadvantages Electron Beam Machining (EBM).	L2	CO4	10M
4		Differentiate between Electron Beam Machining (EBM) and Laser Beam Machining (LBM).	L1	CO4	10M
5		Draw the schematic layout of Laser Beam Machining (LBM) set up and explain the major elements in it.	L4	CO4	10M

6		Write the advantages, disadvantages Laser Beam Machining (LBM).	L4	CO4	10M
7		Discuss the applications and limitations of Laser Beam Machining (LBM).	L2	CO4	10M
8		Draw the schematic layout of Plasma Arc Machining (PAM) set up and explain the major elements in it.	L2	CO4	10M
9		Write the advantages, disadvantages Plasma Arc Machining (PAM).	L1	CO4	10M
10	a	Discuss the applications and limitations of Plasma Arc Machining (PAM).	L2	CO4	5M
	b	Discuss the applications and limitations of Electron Beam Machining (EBM).	L2	CO4	5M

## UNIT-V

1		Discuss about the following			
	a	Define Micromachining.	L1	CO5	2M
	b	Define Nano machining.	L1	CO5	2M
	c	List the Nano fabrication techniques.	L2	CO5	2M
	d	List the Applications of Micromachining.	L2	CO5	2M
	e	What are the advantages of Micro & Nano machining?	L1	CO5	2M
2		Briefly discuss about the Conventional Micro machining Processes.	L1	CO5	10M
3		Classify the Conventional Micro machining Processes and Non-Conventional Micro machining Processes.	L2	CO5	10M
4		Briefly discuss about the Non-Conventional Micro Machining Processes.	L2	CO5	10M
5		Discuss about the Abrasive flow machining (AFM) micro machining processes with neat sketch.	L2	CO6	10M
6		Discuss about the Magneto Rheological Finishing (MRF) micro machining processes with neat sketch.	L2	CO6	10M
7	a	Discuss about the Top down Approaches in Nano Manufacturing.	L2	CO5	5M
	b	Discuss about the Bottom-Up Approaches in Nano Manufacturing.	L2	CO5	5M
8		Explain about the Micro Fabrication Techniques. a. Lithography b. Thin-Film Deposition and Doping	L2	CO6	10M
9		Explain about the Nano fabrication techniques. a. E-Beam Nano Fabrication b. Epitaxy and Strain Engineering.	L1	CO5	10M
10		Explain about the Micro-Nano Fabrication Techniques.	L1	CO5	10M