



Department	: Mechanical Engineering
Year & Semester	: III & VI
Sub Code & Sub Name	: 23MEC364T & Unconventional Machining Processes

Unit-I

S.No	Part-A Questions
1.	What is meant by unconventional machining processes?
2.	Write any four advantages of unconventional machining process.
3.	Write any four limitations of unconventional machining process.
4.	List the unconventional machining process which uses mechanical energy.
5.	What is meant by conventional machining processes?
6.	What are the characteristics of unconventional machining process?
7.	State the working principle of Abrasive Jet Machining.
8.	What is the transfer medium in Abrasive Jet Machining?
9.	List the applications of Water Jet Machining process.
10.	What are the abrasives used in Ultrasonic Machining process?

S.No	Part-B Questions
1.	Explain the need for non-traditional machining processes with suitable examples.
2.	With a neat sketch, explain the principle, equipment, and working of Abrasive Jet Machining (AJM).
3.	Explain the applications and limitations of Abrasive Jet Machining.
4.	Describe the working principle of Abrasive Water Jet Machining (AWJM) with neat diagram.
5.	Compare Abrasive Water Jet Machining (AWJM) and Water Jet Cutting (WJC) with respect to applications and limitations.
6.	Explain the mechanics of metal removal in Ultrasonic Machining (USM) with a neat sketch.
7.	List and explain the process parameters affecting Ultrasonic Machining performance.



Unit-II

S.No	Part-A Questions
1.	State the working principle of EDM process
2.	What is the purpose of dielectric in EDM?
3.	What are the basic requirements of tool material for EDM?
4.	Name the common tool material used in EDM.
5.	What are the factors affecting metal removal rate in EDM?
6.	List the applications of EDM.
7.	Name the common dielectric fluids used in EDM
8.	List the advantages of Wire Cut EDM process
9.	List the limitations of Wire Cut EDM process.
10.	List the applications of Wire Cut EDM process.

S. No	Part-B Questions
1.	Explain the working principle of Electric Discharge Machining (EDM) with a neat sketch.
2.	Explain the working principle of Wire EDM with neat diagram.
3.	Compare EDM and Wire EDM in terms of process, applications, and characteristics
4.	With a circuit diagram, explain the electrode system and servo control in EDM.
5.	Write a detailed note on the applications and limitations of EDM.



Unit-III

S.No	Part-A Questions
1.	State the principle of Chemical machining Process.
2.	What is the purpose of etchants in chemical machining?
3.	Name the etchants used in chemical machining process.
4.	What is the use of maskants in chemical machining
5.	Name some of the maskants used in CHM.
6.	Write principle of ECM process.
7.	What are the requirements of tool materials in ECM process?
8.	State the principle of Electro Chemical Grinding Process
9.	List the applications of ECG process.
10.	What is the difference between ECG and Conventional Grinding?

S.No	Part-B Questions
1.	Explain the working principle of Chemical Machining (CHM). Discuss different types of etchants and maskants used in CHM.
2.	Explain the working principle of Electro Chemical Machining (ECM) with a neat diagram. Discuss its applications, advantages and limitations.
3.	Explain the working principle of Electro Chemical Grinding (ECG). Write its applications, advantages and limitations.
4.	Describe the working principle of Electro Chemical Honing (ECH). Compare it with conventional honing process.
5.	List the applications of Electrochemical Grinding.
6.	Discuss the advantages and limitations of ECM.



Unit-IV

S.No	Part-A Questions
1.	State the working principle of EBM process.
2.	Explain why EBM process is performed usually in a vacuum chamber
3.	What are the limitations of EBM process?
4.	What is the acronym of LASER?
5.	What materials can be machined by using Laser Beam?
6.	List any four advantages of LBM.
7.	What are the applications of LBM?
8.	What is Plasma?
9.	State the working principle of Plasma Arc Machining.
10.	What are the gases used in PAM?

S.No	Part-B Questions
1.	Explain the working principle of Laser Beam Machining (LBM). Discuss its process parameters, applications, advantages and limitations.
2.	Describe Laser Beam Drilling. Explain its working principle and list its industrial applications.
3.	Explain the working principle of Plasma Arc Machining (PAM) with a neat sketch. Discuss its process parameters.
4.	Discuss the applications, advantages and limitations of Plasma Arc Machining (PAM).
5.	Explain the working principle of Electron Beam Machining (EBM) with a neat diagram. Discuss its process parameters.
6.	Compare Laser Beam Machining (LBM), Plasma Arc Machining (PAM), and Electron Beam Machining (EBM).



Unit-V

S.No	Part-A Questions
1.	Write advantages of Rapid Prototyping.
2.	State the principle of Electro stream drilling.
3.	List the applications of Electro stream drilling.
4.	List the applications of Rapid Prototyping.
5.	Briefly describe about Stereo Lithography.
6.	Mention limitations of Electro Stream Drilling.
7.	State the principle of Magnetic Abrasive Finishing.
8.	Write classification of Magnetic Abrasive Finishing.
9.	List any four advantages of Magnetic Abrasive Finishing process.
10.	Write applications of Selective Laser Sintering.

S. No	Part-B Questions
1.	Explain the principle and working of Magnetic Abrasive Finishing.
2.	Discuss the mechanism of material removal and surface finish in Magnetic Abrasive Finishing.
3.	Write short notes on applications of Magnetic Abrasive Finishing.
4.	Explain the principle and working of Abrasive Flow Finishing.
5.	Discuss the process performance of Abrasive Flow Finishing.
6.	Explain the principle of Electro Stream Drilling with neat sketch.
7.	Discuss process performance and limitations of Electro Stream Drilling.
8.	Explain the working principle of Shaped Tube Electrolytic Machining.
9.	Discuss applications of Shaped Tube Electrolytic Machining.
10.	Compare Abrasive Flow Finishing and Magnetic Abrasive Finishing.