29/12/2022

Reg. No.												

Question Paper Code	11526

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Seventh Semester

Mechanical Engineering

(Common to Production Engineering)

ME8073 - UNCONVENTIONAL MACHINING PROCESSES

(Regulations 2017)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	What is the need for unconventional machining?	2,K1,CO1
2.	State the working principle of abrasive water jet machining.	2,K2,CO1
3.	List out the process parameters in EDM process.	2,K1,CO2
4.	State the working principle of electron beam machining.	2,K2,CO2
5.	List out the process parameters in chemical machining.	2,K1,CO3
6.	List out the advantages of electro chemical honing.	2,K1,CO3
7.	What are all the applications of magnetic abrasive machining?	2,K1,CO4
8.	List out the advantages of magneto rheological abrasive flow finishing.	2,K1,CO4
9.	List out the most influencing process parameter in unconventional machining process	2,K2,CO6
10.	List out the mechanisms of material removal in unconventional machining processes	2K2,CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Discuss with neat diagram of abrasive water jet machining and its applications.	13,K2,CO1
		OR	
	b)	Explain with neat sketch of ultrasonic machining processes and its applications.	13,K3,CO1
12.	a)	Discuss wire electric discharge machining with neat sketch and also list out the advantages and limitations.	13,K3,CO2
		OR	
	b)	Explain with neat sketch of plasma arc machining and also list out the advantages and limitations.	13,K3,CO2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

13. a) Discuss with neat sketch of electro chemical machining and also list out its advantages and limitations. *13,K2,CO3*

OR

b) Explain with neat sketch of electro chemical grinding and also list out its advantages and limitations. *13,K3,CO3*

14. a) Discuss the working principle, process parameters, applications and its advantages, limitations of magneto rheological finishing. *13,K2,CO4*

OR

b) Discuss with neat sketch of abrasive flow machining and list out the advantages, limitations. *13,K2,CO4*

15. a) Discuss the recent trends in unconventional machining processes. *13,K2,CO6*

OR

b) Predict different products manufactured by 3D Printing machine and explain. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Distinguish between Laser beam machining and Electron beam machining processes in detail. *15,K2,CO5*

OR

b) Explain the working principle of Magnetic field based AFM. *15,K2,CO5*