K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year: 2025-2026	Semester: V
Class: TY	Program: B.Tech
Branch Code: MEC	Pattern: 2022
Name of Course: Machining Technology	Course Code: MEC223006A
Max. Marks: 60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 02 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

		Marks	**CO**
Question No. 1			
1a)	A tool life of 80 minutes is obtained at a cutting speed of 30 m/min, and a tool life of 10 minutes is obtained at a speed of 50 m/min. Calculate: 1. The values of n and C. 2. The tool life equation. The **cutting speed** corresponding to a tool life of **6 minutes**	(6)	CO1
Question No. 2			
2a)	Set the dividing head to mill 35 teeth on a spur wheel blank using simple indexing	(6)	CO2
Question No. 3			
3a)	Analyze the given grinding wheel specification 25 – C – 60 – M – 7 – V – 40, and explain how each component of the nomenclature influences the wheel's performance	(8)	CO3
	OR		
3b)	Classify different grinding machines and explain Planetary internal grinders with sketches	(8)	CO3
3c)	What is polishing? Demonstrate the buffing process with heat sketch.	(8)	CO3
	OR		
3d)	Compare and analyze the performance of cylindrical grinding and centerless grinding operations. Explain the key functions and distinguishing features of each process.	(8)	CO3

Question No. 4

4a)	Define Jigs and fixture. Apply the principles of locating element to ensure stability of the workpiece during machining	(8)	CO4
	OR		
4b)	Write the function of clamping elements and explain in detail the working of any one clamp with a neat sketch.	(8)	CO4
4c)	Classify the types of drill bushes and explain in detail press fit bush with a neat sketch	(8)	CO4
	OR		
4d)	State the various types of jigs and illustrate the Template jig with a neat sketch.	(8)	CO4

Question No. 5

5a)	Illustrate Electro Discharge Machining (EDM) along with advantages and disadvantages of the process.	(8)	CO5
	OR		
5b)	Describe the principle and working of Laser Beam Machining (LBM) with a neat diagram. Discuss how variations in process parameters such as laser power, pulse duration, and beam focus affect machining performance and accuracy**.**	(8)	CO5
5c)	Illustrate Abrasive Jet Machining along with advantages and disadvantages of the process.	(8)	CO5
	OR		
5d)	Analyze the operational and performance differences between conventional and non-conventional machining processes with suitable examples, emphasizing their influence on tool wear, surface finish, and material removal rate	(8)	CO5

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