U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: 3**
Branch: Industrial Engineering and Management **Duration: 3 hrs.**
Course Code: 23IM3PCMAP / 22IM3PCMAP **Max Marks: 100**
Course: Manufacturing Process

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	A "Through-away" carbide insert was used to machine a steel workpiece with a cutting speed of 60 m/min and a tool life of 40 min. When the speed was increased to 100m/min, the tool life was reduced to 10 min. Using this data, estimate the cutting speed for maximum productivity, if the tool change time is 2 min.	*CO1*	*PO1*	**10**
	b)	Derive Merchant's Circle Diagram, with all necessary assumptions.	*CO1*		**10**
		OR			
2	a)	Discuss about the following i) index plate ii) Simple indexing ii) Compound indexing	*CO1*		**10**
	b)	A carbide tool gave a tool life of 200 min at 20 m/min and 28 min at 80 m/min. Compute the (i) tool life equation, and (ii) cutting speed for minimum life.	*CO1*	*PO1*	**10**
		UNIT - II			
3	a)	Discuss Loose Piece Pattern with the help of neat sketches. Also, mention its applications.	*CO1*		**10**
	b)	Write a brief description of the Squeeze casting process.	*CO1*		**10**
		OR			
4	a)	Brief on the properties of Base Sand.	*CO1*		**10**
	b)	Explain with a neat diagram, the working principle of Continuous Casting process	*CO1*		**10**

			UNIT - III			
	5	a)	Explain the Laser Beam Machining (LBM) process using a neat diagram. Also mention its advantages and disadvantages.	*CO1*		**10**
		b)	Explain the Eddy Current Testing Process used in NDT, with a neat diagram. Also state its applications	*CO1*		**10**
			OR			
	6	a)	Explain the Abrasive Water Jet Machining process using a neat diagram. Also mention its advantages and disadvantages	*CO1*		**10**
		b)	Explain the Ultrasonic inspection method with a neat diagram	*CO1*		**10**
			UNIT - IV			
	7	a)	Explain the Thermit welding process with appropriate diagrams.	*CO1*		**10**
		b)	What is meant by Explosive welding? Describe using a neat sketch.	*CO1*		**10**
			OR			
	8	a)	With a neat sketch, explain the HAZ in welding process and the factors affecting the same.	*CO1*		**10**
		b)	Explain the causes and remedies of Ten casting defects	*CO1*		**10**
			UNIT - V			
	9	a)	Explain with a neat sketch i) Open Die Forging ii) Closed Die Forging	*CO1*		**10**
		b)	Write a note on the type of abrasives used in Grinding.	*CO1*		**10**
			OR			
	10	a)	Discuss about the die design parameters in closed die forging	*CO1*		**10**
		b)	Discuss about the factors that govern the selection of a grinding wheel	*CO1*		**10**

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