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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: III**
Branch: Mechanical Engineering **Duration: 3 hrs.**
Course Code: 23ME3PCMAP / 22ME3PCMAP **Max Marks: 100**
Course: Manufacturing Processes

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)		Define manufacturing process and explain how manufacturing processes are classified?	*CO1*	*PO1*	**10**
	b)		List and explain various pattern allowances in detail used while designing the pattern	*CO2*	*PO1*	**10**
			OR			
2	a)		Highlight functions of a pattern and pattern materials used in casting.	*CO2*	*PO1*	**10**
	b)		Define core. List out its functions and importance in casting.	*CO2*	*PO1*	**10**
			UNIT - II			
3	a)		Explain a typical gating system with a neat sketch and explain why rising is important in casting	*CO2*	*PO1*	**10**
	b)		Explain the concept of solidification in pure materials and alloys with cooling curves.	*CO3*	*PO1*	**10**
			OR			
4	a)		With a neat sketch describe the following with a neat sketch i) Gravity die casting ii) Centrifugal casting iii) Shell Mould	*CO4*	*PO1*	**12**
	b)		Sketch and explain investment casting with a neat sketch	*CO4*	*PO1*	**08**
			UNIT-III			
5	a)		Explain the laser beam and friction stir welding processes with a neat sketch.	*CO4*	*PO1*	**10**
	b)		What is weld corrosion? Explain how it influences the metallurgy of weld.	*CO3*	*PO1*	**10**

			OR			
	6.	a)	Describe the TIG welding process with an illustration	*CO3*	*PO1*	**10**
		b)	List and explain any five defects in welding with remedies.	*CO3*	*PO1*	**10**
			UNIT-IV			
	7	a)	Explain powder extrusion and powder forging with illustration.	*CO4*	*PO1*	**10**
		b)	Explain the steps involved in powder metallurgy.	*CO4*	*PO1*	**10**
			OR			
	8	a)	Explain the electrolysis powder preparation method with an illustration	*CO4*	*P01*	**10**
		b)	Describe the plasma spray powder deposition technique with an illustration	*CO4*	*PO1*	**10**
			UNIT - V			
	9	a)	Explain the FDM method of Rapid prototyping with an illustration	*CO4*	*PO1*	**10**
		b)	Explain the Steps involved in the RP process and its advantages and limitations.	*CO1*	*PO1*	**10**
			OR			
	10	a)	Explain the Selective laser sintering process with a neat sketch	*CO5*	*PO1*	**10**
		b)	Describe the process of LENS with an illustration	*CO5*	*PO1*	**10**

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