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

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester : III**

Branch: Mechanical Engineering **Duration: 3 hrs.**

Course Code: 19ME3DCMAP **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.

			CO	**PO**	**Marks**
		UNIT - I			
1	a)	Define manufacturing process and classify it.	*CO1*	*PO1*	**10**
	b)	State the functions of pattern in the casting process.	*CO1*	*PO1*	**05**
	c)	State the factors to be considered in core design and making.	*CO2*	*PO1*	**05**
		OR			
2	a)	Discuss the various pattern materials used to create molds for casting processes.	*CO1*	*PO1*	**07**
	b)	Highlight the various desirable properties of molding sand used in metal casting.	*CO2*	*PO1*	**08**
	c)	Mention the applications of Manufacturing process.	*CO1*	*PO1*	**05**
		UNIT - II			
3	a)	Point out the causes and remedies of various defects in casting.	*CO3*	*PO1*	**10**
	b)	Explain the key components of a gating system with a neat sketch.	*CO2*	*PO1*	**10**
		OR			
4	a)	Elaborate on shell molding process with a neat sketch.	*CO1* *CO4*	*PO1*	**10**
	b)	Write a note on progressive and directional solidification.	*CO2*	*PO1*	**04**
	c)	State the advantages and disadvantages of continuous casting.	*CO1* *CO4*	*PO1*	**06**
		UNIT - III			
5	a)	Explain the principle of Friction stir welding process with a neat sketch. State its advantages.	*CO1* *CO4*	*PO1*	**10**

		b)	Describe the distinct features of weld zones formed during the welding process. Illustrate.	*CO3*	*PO1*	**10**
			OR			
	6	a)	Discuss the different types of weld joints used in welding. Illustrate.	*CO1* *CO4*	*PO1*	**10**
		b)	Explain the principle of TIG welding process with a neat sketch. State its advantages.	*CO1* *CO4*	*PO1*	**10**
			UNIT - IV			
	7	a)	Explain the step-by-step procedure to create metal parts using powder metallurgy.	*CO1* *CO4*	*PO1*	**10**
		b)	Explain the process of powder extrusion with a neat a sketch. State its advantages.	*CO4*	*PO1*	**10**
			OR			
	8	a)	State the advantages, limitations and applications of powder metallurgy.	*CO1* *CO4*	*PO1*	**10**
		b)	Sketch and elaborate on the process of powder forging. State its applications.	*CO4*	*PO1*	**10**
			UNIT - V			
	9	a)	Highlight the advantages, limitations and applications of rapid prototyping.	*CO1* *CO4*	*PO1*	**10**
		b)	Explain the working of a selecting laser sintering process with a neat sketch.	*CO4* *CO5*	*PO1*	**10**
			OR			
	10	a)	Explain the process of Stereolithography with a neat sketch.	*CO4* *CO5*	*PO1*	**10**
		b)	Explain the process of Laminated Object Manufacturing (LOM) with a neat sketch.	*CO4* *CO5*	*PO1*	**10**

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