U.S.N.										

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Program: B.E. **Semester: III**

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

Course Code: 22AS3PCMNT **Max Marks: 100**

Course: Manufacturing Technology

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)		With a neat sketch explain the casting terms in the sand-casting process. Also state advantages and disadvantages of casting.	*CO 1*	*PO 1*	**10**
	b)		Discuss the casting defects occurring due to high pouring temperature of the molten metal.	*CO 1*	*PO 1*	**10**
			OR			
2	a)		Explain in detail the step-by-step procedure involved in the working principle of investment casting.	*CO 1*	*PO 1*	**10**
	b)		Explain briefly the various manufacturing processes.	*CO 1*	*PO 1*	**10**
			UNIT - II			
3	a)		Write a short note on drop forging explaining the various passes a material undergoes during drop forging.	*CO 2*	*PO 1*	**10**
	b)		Which is the most suitable primary manufacturing process for producing the cross-sections or products shown in the figure below? Explain each of them in brief.  (a) Bevel Gear, (b) Gear Rods, (c) I-sections, (d) Jewelry, (e) Crankshaft	*CO 2*	*PO 2*	**10**
			OR			
4	a)		Discuss Compound and Progressive dies with illustration. State its limitations.	*CO 2*	*PO 1*	**10**
	b)		Briefly explain any two types of forging operations.	*CO 2*	*PO 1*	**10**
			UNIT - III			
5	a)		Differentiate between traditional machining and non-traditional machining.	*CO 3*	*PO 1*	**6**
	b)		Write a short note on single point and multi edge cutting tools.	*CO 3*	*PO 1*	**4**

		c)	Write a short note on abrasive water jet machining stating its working principle, advantages and disadvantages.	*CO 3*	*PO 1*	**10**
			OR			
	6	a)	Write a short note on the following surface finishing process stating its working principle. i) Lapping ii) Honing iii) Buffing iv) Super finishing	*CO 3*	*PO 1*	**10**
		b)	Write a short note on water jet machining stating its working principle, advantages and disadvantages.	*CO 3*	*PO 1*	**10**
			UNIT - IV			
	7	a)	Differentiate between Computer Numerical Control (CNC) and Direct Numerical Control (DNC).	*CO 4*	*PO 1*	**10**
		b)	State the difference between Rapid Prototyping (RP) and Rapid tooling (RT).	*CO 4*	*PO 1*	**10**
			OR			
	8	a)	Write a short note on Numerical Control (NC) machines and Computer Numerical Control (CNC) machines?	*CO 4*	*PO 1*	**10**
		b)	Explain the fundamental principle behind RP manufacturing.	*CO 4*	*PO 1*	**10**
			UNIT - V			
	9	a)	Describe the nomenclature of gear in detail with a neat sketch.	*CO 5*	*PO 1*	**10**
		b)	What is additive manufacturing? Discuss its advantages and disadvantages and name various additive manufacturing processes.	*CO 5*	*PO 1*	**10**
			OR			
	10	a)	Explain powder metallurgy for the manufacturing of gears.	*CO 5*	*PO 1*	**10**
		b)	State the benefits of Quality Management System in Aerospace Industry.	*CO 5*	*PO 2*	**10**

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