

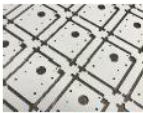




U.S.N.

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

Autonomous Institute Affiliated to VTU

January / February 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)	Explain the various roller arrangements along with their purposes.	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.	CO 2	PO 2	10
			 (a) Steel Metal,  (b) PTFE rods,  (c) Pipes,  (d) Wrench Tool,  (e) Artwork			
			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)	Briefly explain the different types of grinding.	CO 3	PO 1	10
		b)	Write a short note on Electrical Discharge machining stating its working principle, advantages and disadvantages.	CO 3	PO 1	10
			OR			
	6	a)	Write a short note on cutting fluids by stating its functions, types, properties and application methods.	CO 3	PO 1	10

	b)	Write a short note on Laser Arc machining stating its working principle, advantages and disadvantages.	CO 3	PO 1	10
		UNIT - IV			
7	a)	Write a short note on Numerical Control (NC) machines and Computer Numerical Control (CNC) machines?	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)	Explain the processes used for manufacturing various components of a typical jet engine.	CO 5	PO 1	10
	b)	Explain powder metallurgy for the manufacturing of gears.	CO 5	PO 1	10
		OR			
10	a)	What is additive manufacturing? Discuss its advantages and disadvantages and name various additive manufacturing processes.	CO 5	PO 1	10
	b)	State the benefits of Quality Management System in Aerospace Industry.	CO 5	PO 2	10
