

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

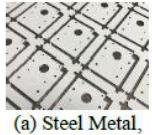
Max Marks: 100

Course: Manufacturing Technology

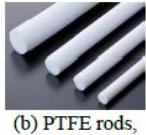
Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

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.	<i>CO 1</i>	<i>PO 1</i>	10
	b)	Discuss the casting defects occurring due to high pouring temperature of the molten metal.	<i>CO 1</i>	<i>PO 1</i>	10
OR					
2	a)	Explain in detail the step-by-step procedure involved in the working principle of investment casting.	<i>CO 1</i>	<i>PO 1</i>	10
	b)	Explain briefly the various manufacturing processes.	<i>CO 1</i>	<i>PO 1</i>	10
UNIT - II					
3	a)	Explain the various roller arrangements along with their purposes.	<i>CO 2</i>	<i>PO 1</i>	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.	<i>CO 2</i>	<i>PO 2</i>	10
OR					
4	a)	Discuss Compound and Progressive dies with illustration. State its limitations.	<i>CO 2</i>	<i>PO 1</i>	10
	b)	Briefly explain any two types of forging operations.	<i>CO 2</i>	<i>PO 1</i>	10
UNIT - III					
5	a)	Briefly explain the different types of grinding.	<i>CO 3</i>	<i>PO 1</i>	10
	b)	Write a short note on Electrical Discharge machining stating its working principle, advantages and disadvantages.	<i>CO 3</i>	<i>PO 1</i>	10
OR					
6	a)	Write a short note on cutting fluids by stating its functions, types, properties and application methods.	<i>CO 3</i>	<i>PO 1</i>	10

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.



(a) Steel Metal,



(b) PTFE rods,



(c) Pipes,



(d) Wrench Tool,



(e) Artwork

	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
