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

Autonomous Institute Affiliated to VTU

April 2024 Semester End Main Examinations

Programme: B.E.

Branch: Aerospace Engineering

Course Code: 19AE3DCMTA

Course: Manufacturing Technology for Aerospace Engineers

Semester: III

Duration: 3 hrs.

Max Marks: 100

Instructions:

1. Draw figures wherever necessary.
2. Assume suitable data wherever necessary

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

1	a) Explain and draw a flowchart classifying manufacturing processes.	08
	b) What is the difference between true centrifugal casting and semi centrifugal casting?	04
	c) Explain the required properties of casting sand.	08

UNIT - II

2	a) Explain with neat diagrams the direct and indirect extrusion process.	06
	b) Explain with neat diagrams of the wire and bar drawing.	05
	c) Explain with neat diagrams the three major categories of sheet metal processes.	09

UNIT - III

3	a) Explain the seven elements of tool geometry for a single-point cutting tool with a neat diagram.	10
	b) Explain various mechanisms of cutting tool wear.	05
	c) Explain with a neat diagram of Laser beam machining.	05

OR

4	a) Explain with a neat diagram of Plasma arc machining.	07
	b) Explain with a neat diagram of electric discharge machining.	07
	c) Explain the types of cutting fluids.	06

UNIT - IV

5	a) Discuss the solid-state welding process used for joining two different metals.	07
	b) Explain the concepts of Rapid prototyping.	08
	c) What is a numerical control? Explain the concept of CNC and DNC.	05

OR

6	a) Explain the solid ground curing-based Rapid prototyping process with a neat sketch. 05
	b) Classify and explain the CNC control systems. 12
	c) List out the advantages of CNC. 03

UNIT - V

7	a) Explain the gear sintering manufacturing techniques with their advantages and neat sketch. 07
	b) Classify and explain the different types of gear with neat diagrams. 06
	c) Explain the processes used for manufacturing various components of a typical jet engine. 07
