

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

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: Aerospace Engineering

Course Code: 19AE3DCMAE

Course: Materials for Aerospace Engineering

Semester: III

Duration: 3 hrs.

Max Marks: 100

Date: 14.09.2023

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

UNIT - I

1	a) Explain the role of matrix, reinforcement and interface in composite material.	8
	b) List the different techniques for processing PMC. Explain any two with neat sketch.	12

OR

2	a) Determine the young's modulus of FRC for <ul style="list-style-type: none"> i) iso stress condition ii) iso strain condition 	12
	b) Write a note on fiber reinforced composite and its application.	8

UNIT - II

3	a) Write a note on magnesium alloys.	8
	b) Explain about the casting of aluminum alloy by taking a suitable example.	12

OR

4	a) List the advantages and disadvantages of titanium and its alloys.	8
	b) Write a note on cast and wrought alloys.	4
	c) Explain about the heat treatment process of aluminum and its alloys.	8

UNIT - III

5	a) Explain the heat treatment process of ferrous materials.	6
	b) Explain about the steel used in aerospace industry.	6
	c) Explain the various corrosion phenomenon occurring in an aircraft and its preventions.	8

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 - IV

6	a)	Explain any two fabrication process involved in metal matrix composite with a neat sketch.	12
	b)	Write a note on radar absorbing materials and methods to achieve stealth.	8

UNIT - V

7	a)	Explain about linear and non-linear elastic properties in a material.	12
	b)	Explain about slip and twinning with a neat sketch.	8

SUPPLEMENTARY EXAMS 2023