

# Model Question Paper-1 with effect from 2019-20 (CBCS Scheme)

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## Fourth Semester B.E. Degree Examination Aircraft Material Science

TIME: 03 Hours

Max. Marks: 100

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	List and explain desired characteristics of aircraft materials	L1	6
	b	Describe various methods used in aircraft material testing with neat diagram	L2	7
	c	Write note on any three NDT methods used in the material testing	L2	7
OR				
Q.02	a	Discuss the types of aluminum alloys with application in the aircraft industry	L2	7
	b	Explain the production and manufacturing methods for corrosion resistant and maraging steels	L2	8
	c	Write a note on the heat treatment and surface treatment of materials	L1	5
<b>Module-2</b>				
Q. 03	a	What are super alloys? Classify the super alloys	L1	4
	b	Discuss the production methods and applications of Nickel based super alloys in aerospace industry	L2	8
	c	Explain iron base super alloys and its heat treatment processes	L2	8
OR				
Q.04	a	Define and classify the composites	L1	5
	b	Explain the following fabrication methods of composites i) Hand lay-up ii) Pultrusion	L2	10
	c	Discuss metal matrix and ceramics matrix based composites	L2	5
<b>Module-3</b>				
Q. 05	a	Define polymer and list applications in aerospace industry	L1	5
	b	Discuss the desirable properties of polymers in the aerospace applications	L2	5
	c	Discuss various shaping and production methods of polymers	L2	10
OR				
Q. 06	a	Differentiate between thermosetting and thermoplastic polymers	L1	5
	b	Write a note on glass and its shaping methods with neat sketch	L2	10

	c	What are sealants and adhesives? List them with applications	L2	5
<b>Module-4</b>				
Q. 07	a	What is ablation? discuss the ablative materials used in the aerospace industry	L2	10
	b	Explain various aircraft woods and its seasoning with respect to aircraft construction	L2	10
OR				
Q. 08	a	Explain various types of rubber used in the industry	L1	7
	b	Define dope and explain its classification	L2	6
	c	Discuss the applications of paints and types of aircraft paints	L2	7
<b>Module-5</b>				
Q. 09	a	Define corrosion and discuss types of corrosion	L1	10
	b	Explain various methods used in prevention of corrosion	L2	10
OR				
Q. 10	a	List and explain the desirable properties of rocket propellants	L1	6
	b	Discuss the solid rocket propellant and its types	L2	8
	c	Explain the methods of mechanical characterisation of solid propellant	L2	6