

CBCS SCHEME

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22
BAE301

Third Semester B.E./B.Tech Degree Examination, Dec.2023/Jan.2024 Aircraft Materials and Processes

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Write a classification of materials and explain.	10	L2	CO2
	b.	Define the following : i) Resilience ii) Secant modulus iii) Target modulus iv) True stress v) Strain hardening.	10	L1	CO1
OR					
Q.2	a.	Draw stress – strain curve for a ductile material and explain in detail.	10	L2	CO2
	b.	Illustrate the torsion testing of materials and Explain.	10	L2	CO2
Module – 2					
Q.3	a.	Discuss the types of casting and wrought aluminium alloys with respect to the numbering system in detail.	10	L2	CO2
	b.	Write the properties and applications of magnesium alloys.	10	L3	CO3
OR					
Q.4	a.	Write short notes about the titanium alloys and its welding techniques.	10	L2	CO2
	b.	Classify the woods and write about the woods used in aircraft.	10	L2	CO2
Module – 3					
Q.5	a.	Write the types of stress and explain it with applications and examples.	10	L2	CO2
	b.	Discuss the different heat treatment techniques used in the steel alloys.	10	L2	CO2
OR					
Q.6	a.	Write the properties and applications of merging stress.	10	L3	CO3
	b.	Explain the super alloys processing in detail.	10	L3	CO3
Module – 4					
Q.7	a.	Write the classification of ceramics and its applications.	10	L2	CO2
	b.	Discuss the classification of composite materials.	10	L2	CO2
OR					
Q.8	a.	Draw a neat sketch and explain hard layup fabrication process of composite materials.	10	L2	CO2
	b.	Write the properties of the carbon-carbon composites and its applications in aircraft industries.	10	L3	CO3
Module – 5					
Q.9	a.	Write the methods to prevent corrosion in materials.	12	L3	CO3
	b.	Write short notes on destructive testing and non-destructive testing and its needs.	08	L2	CO2
OR2					
Q.10		Explain the following : a. Dye Penetrate Method b. Magnetic Particle Method c. X – ray Inspection d. Eddy Current Technique.	20	L3	CO2