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BAE601

Visvesvaraya Technological University

Model Question Paper with effect from 2022-23(CBCS Scheme)

Sixth Semester B.E. Degree Examination

Composite Materials & Structures

TIME:03 Hours

Max.Marks:100

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

Q.No	Module-1	Marks	CO	BTL
1.a	Define composite, Give brief Classification	10	CO1	L1
b	Enumerate the various applications of composites in aircrafts	10	CO1	L3
	OR			
2.a	Obtain an expression for generalized Hooke's law	08	CO1	L3
b	Give elastic constants for Isotropic, orthotropic and anisotropic materials	12	CO2	L2
	Module-2			
3.a	Differentiate between micro and macro mechanics in composites	10	CO3	L2
b	Explain the elasticity approach to find material properties	10	CO2	L2
	OR			
4.a	Discuss the fundamentals of macro mechanics in composite materials	10	CO3	L3
b	Derive stress-strain relationship in materials for natural axis	10	CO2	L4
	Module-3			
5.a	Explain the significance of laminate mechanism in directing the properties of composites	10	CO3	L1
b	Derive the Governing differential equation for a general laminate	10	CO2	L3
	OR			
6.a	Define the term stacking and explain the stacking sequence mechanism in composites	10	CO2	L3
b	List the various Failure criteria for composites and explain any 2	10	CO3	L2
	Module-4			
7.a	Discuss the Basic design concepts in sandwich construction	10	CO4	L3
b	Enumerate the various failure modes of sandwich panels	10	CO3	L4
	OR			
8.a	Explain about types testing conducting on sandwich structures	10	CO3	L3
b	Discuss in detail about various application of sandwich structures in aircraft	10	CO4	L2
	Module-5			
9.a	Sketch and explain handlay-up process in fabrication of composite	10	CO3	L2
b	With a neat sketch explain filament winding process	10	CO4	L4
	OR			
10.a	Explain injection moulding process with neat sketch	10	CO3	L2
b	Discuss the post processing operations carried out in composites	10	CO4	L4