Reg. No. : | | | | | | | | | | | | |

Question Paper Code: 1107238

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024
Seventh Semester
Aerospace Engineering
U20AS732 - COMPOSITE MATERIALS AND STRUCTURES
(Regulation 2020)

Time: Three Hours Maximum: 100 Marks

Answer ALL questions

PART – A (10 x 2 = 20 Marks)

1. What is density of composites?

2. Define micromechanics.

3. What is an anisotropic material?

4. What is meant by orthogonally isotropic material? Give an example.

5. What are the merits and demerits of Tsai-hill failure theory?

6. Define cross ply laminate and angle ply laminate.

7. Distinguish between open mould and closed mould processes.

8. What is pre-preg?

9. List out the materials used for sandwich construction.

10. List down the modes of failure in a sandwich structure.

PART – B (5 x 16 = 80 Marks)

11. (a) What are the advantages of composite material and explain its application? (16)

(OR)

(b) Show the reduction of anisotropic material stress- strain equations to those of monoclinic material stress-strain equations. (16)

12. (a) Explain the Hooke's law for different materials? (16)

(OR)

(b) Explain Hooke's law for a two dimensional Uni-directional lamina. (16)

13. (a) Derive classical laminate theory. (16)

(OR)

(b) Explain about inter laminar stresses. (16)

14. (a) Classify and Explain any two methods of glass fiber manufacturing process with neat sketch. (16)

(OR)

(b) Write short notes on vacuum bag moulding and continuous pultrusion. (16)

15. (a) Explain the basic design concept of sandwich construction. (16)

(OR)

(b) Describe how the honeys comb processes work. (16)

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