Printed Pages: 3

NME - 034

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2012236

Roll No. | | | | | | | | | | |

B.TECH

Regular Theory Examination (Odd Sem - VII),2016-17

COMPOSITE MATERIALS

Time : 3 Hours *Max. Marks : 100*

Section - A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (10×2=20)

a) Define a composite material.

b) List various ceramic matrices.

c) Write down the advantages of Carbon fibers.

d) What are the metallic fibers that are commonly used?

e) Name few ceramics used as matrices for CMCs.

f) Name a few recreational applications of Carbon Matrix Composites.

g) State the applications of hand layup method.

h) What is a release film?

i) What is objective of the mechanical testing of composites?

j) Compare Intra-laminar shear and Inter-laminar shear testing.

Section - B

Note: Attempt any five questions from this section. **(5×10=50)**

2. Elaborately discuss the benefits and applications of composites.

3. What are Aramid fibers? Discuss fabrication, structure, properties and applications of Aramid fiber?

4. What is MMC? Highlight the advantages and drawbacks of MMC over PMC.

5. Compare Carbon matrix Composites and Ceramic matrix composites.

6. List the characteristics of FRP that are of significance for industrial application.

7. Explain the various production techniques used for Metal matrix composites (MMC)

8. Describe the autoclave bag moulding process with a neat sketch and give its application.

9. How are the following tests carried out on composites.

a) Tensile test b) Fatigue test.

Section - C

Note: Attempt any two questions from this section. **(2×15=30)**

10. a) Differentiate between fiber, whisker and particle. **(8)**

b) List down the important characteristics of composite material. **(7)**

11. a) Explain any one of the interfacial shear strength test method in detail. **(10)**

b) Write short notes on compression molding used in manufacturing of composites **(5)**

12. Give a detailed account of fiber materials and matrix materials by giving their properties and the type of matrix materials. **(15)**

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