M18002014

Registration No: | | | | | | | | | | |

Total Number of Pages : 01 **M.TECH**

M.TECH 2ND SEMESTER REGULAR EXAMINATIONS, MAY 2018
MECHANICS OF COMPOSITE MATERIALS
Branch: MD, Subject Code:MMDPC2010
Time: 3 Hours
Max Marks : 70

PART-A (10 X 2=20 MARKS)

1. Answer the following questions.

a) What is composite and its application? [CO1]
b) Write the role of a matrix and reinforcement. [CO1]
c) Differentiate between dispersion strengthened and particle strengthened composites. [CO1]
d) Explain the properties of glass fibers. [CO2]
e) List the characteristics of FRP. [CO2]
f) Define the term 'wettability'. [CO3]
g) Define the terms filament, strand, yarn. [CO3]
h) What is sharp memory alloy? [CO2]
i) Write the difference between fiber reinforced and laminated composites. [CO4]
j) Define strength ratio. [CO4]

PART-B (5 X 10=50 MARKS)

Answer any five questions from the following.

2. a)List the desired properties of matrix and the reinforcement in a composite material.(05) [CO1]
b)Define aspect ratio. Explain its significance. (05) [CO1]
3. a) Differentiate between open and closed mold techniques, with simple figures. (05) [CO2]
b) What are the different arrangements' used in filament welding? list of some of its applications. (05) [CO2]
4. a) Discuss the applications of fiber reinforced composites in automobiles. (05) [CO1]
b) What is "curing" of FRPs? Explain clearly. (05) [CO2]
5. a)What is laminate? Describe in brief. (05) [CO3]
b) A thermoplastic matrix contains 40% glass fiber. If the density of the matrix pm is 1.1gr/cc while that of glass fiber pr is 2.5 gr/cc. what is the density of the composite? Assume that no voids are present and the mass of composite =100gm (05) [CO3]
6. a) write the stress-strain relationship in matrix form for a lamina and explain terms involved [CO4] (05)
b) Explain the relation between engineering constant reduced stiffness and compliances. [CO4] (05)
7. a) write the different techniques used for MMC production? List them. (05) [CO3]
b) Describe the production of MMCs by using the stir casting technique. (05) [CO3]
8.Write short notes on the following
a) Polymer matrix composites [CO1]
b) Assumptions in lamination theory [CO4]

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