

End Semester Examinations - 2015-16 Even Semester - May 2016

14ME3021 Composite Materials

Set B

Time : 3 hrs
Total Marks: 100

1. Explain a Hybrid composite. List the classification of Hybrid composites. Explain about manufacturing of any one type of polymer matrix hybrid composite.
OR
 2. List the methods used to test a composite material. Explain the procedure of any one in detail test in detail including the ASTM standards for the test.
 3. What are the advanced characterization techniques employed for nano-composites? Explain how a test sample is prepared for a TEM analysis.
OR
 4. Explain the importance of composites over monolithic alloys in terms of material properties. Which are the properties that can be improved through manufacturing composites?
 5. Why is corrosion resistance of MMCs poor? Explain how the property can be improved and the method that can be employed for improving the property.
OR
 6. What is a nano-composite? List the manufacturing methods employed to produce nano-materials. Explain the construction and working principle of Ball Mill, its application, advantages and disadvantages.
 7. Define fatigue failure. Explain about low cycle fatigue and high cycle fatigue. How will a composite be tested for its fatigue strength? State the importance of the fatigue strength in composites.
OR
 8. List the different types of ply used in laminates. Explain each type in detail.
 9. Write about Ashby's Chart. Explain how it is used to specify the Strength of various materials and methods to select a material for the right application.
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Wishing you All the Best
