

Roll No. 

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Total No. of Pages : 01

Total No. of Questions : 08

M.Tech(ME) (2019 Batch) (Sem.-2,3)

**COMPOSITE MATERIALS**

Subject Code : MTME-221

M.Code : 74997

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT question.
2. Each question carries TWENTY marks.

1.
  - a. Discuss the factors that affects the degree of crystallinity of polymers.
  - b. Give comparison between crystalline and amorphous polymers.
2.
  - a. What is polypropylene and what is its repeat structural unit.
  - b. What is natural rubber?
3.
  - a. Define the term bulk density as associated with ceramics and polymers.
  - b. Give a comparison between elastomers and plastics.
4.
  - a. How do porosity and grain size affect the tensile strength of ceramics materials?
  - b. Define the term dielectric strength of a material. How its units expressed?
5. What is the criterion of using discontinuous fibers in the fiber reinforced composites? What should be the aspect ratio for discontinuous fibers?
6. What are the various techniques used to make polymer composites. Explain any one in details
7.
  - a. What is hybrid composites in metal matrix
  - b. What kind of advantages or disadvantages we have in hybrid composites
8. Write short notes on the following :
  - a. Natural composites
  - b. Role of composites in development of defense and aerospace applications.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**