

Seat No.: \_\_\_\_\_

Enrolment

No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION – WINTER • 2014

**Subject Code: 143605**

**Date: 02-01-2015**

**Subject Name: Composite Materials**

**Time: 02:30 pm - 05:00 pm**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Write in detail the classification of polymers. **07**  
(b) Explain the preparation method of polyvinyl chloride (PVC) and polycarbonate (PC). **07**
- Q.2** (a) Describe briefly the resin transfer molding. **07**  
(b) What do you mean by matrix? Explain in detail about reinforcement used in composites. **07**
- OR**
- (b) Write in detail about pultrusion method and explain the role of filler in the composite material. **07**
- Q.3** (a) Name the test used for the testing of composite material and explain in detail the izod impact and dart impact. **07**  
(b) Describe in detail the how do we evaluate the composite material. **07**
- OR**
- Q.3** (a) Explain in detail the stress-strain relations and engineering constants. **07**  
(b) Describe briefly about synthesis of stiffness matrix. **07**
- Q.4** (a) Write in detail about advanced composite using Nanomaterials. **07**  
(b) Describe the emerging areas where the composite material can be used for end application. **07**
- OR**
- Q.4** (a) Explain in detail how we do analysis of laminates after initial failure. **07**  
(b) Write in short about the analysis of laminates of composites material. **07**
- Q.5** (a) Explain the manufacturing process of nylon with its properties. **07**  
(b) Describe in detail the process of extrusion. **07**
- OR**
- Q.5** (a) Write in detail how the manufacturing of unsaturated polyester and phenolic resin is done. **07**  
(b) How the Poly ether ether ketone (PEEK) and polyurethanes is manufactured or prepared. **07**

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