

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013**

**Subject Code: 163406****Date: 04-06-2013****Subject Name: Composite Technology****Time: 10.30 am - 01.00 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) What are composites? Give advantages and disadvantages of composites. **07**  
 (b) Explain manufacturing of carbon fibres with flow diagram. **07**
- Q.2** (a) Describe Sheet molding compounds (SMC) process with neat sketch. **07**  
 (b) What is the role of accelerators? Give detail description on various accelerators used in resin system. **07**
- OR**
- (b) Write a note on Aramid fibres. **07**
- Q.3** (a) Explain Hand lay-up process with neat sketch. **07**  
 (b) Discuss Resin transfer molding process along with advantages and applications. **07**
- OR**
- Q.3** (a) Explain manufacturing of Epoxy resin used as matrix in composites. **07**  
 (b) Describe Filament winding process with neat sketch and give its applications. **07**
- Q.4** (a) Explain manufacturing of Unsaturated polyester resin used as matrix in composites. **07**  
 (b) Define: Resin, Gel time, Cure time, Shelf life, Pot life, C-stage resin, catalyst. **07**
- OR**
- Q.4** (a) Explain Vacuum bag molding process with neat and advantages. **07**  
 (b) Classify Glass fibres and explain manufacturing process of glass fibre with neat sketch. **07**
- Q.5** (a) Explain Pultrusion process used for the manufacturing of profiles. **07**  
 (b) Explain: Gel-time test. **07**
- OR**
- Q.5** (a) Describe Ultrasonic test method for non-destructive testing of composites. **07**  
 (b) Give various applications of FRP products in marine and automotive. **07**

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