

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME- SEMESTER II- EXAMINATION – SUMMER 2015**

**Subject Code: 2722405****Date: 26/05/ 2015****Subject Name: Composite Material Technology****Time: 2:30 PM – 5:00 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 is the role of accelerators? Give detail description on various accelerators used in resin system. **07**
- (b) What is the function of catalyst? Explain Room Temperature and Elevated Temperature Catalysts. **07**
- Q.2** (a) Why fillers are added in resin system? Explain various types of fillers used in resin system. **07**
- (b) Write short notes on : (a) Coupling agent (b) UV Stabilizers **07**
- OR**
- (b) Explain manufacturing and properties of Unsaturated Polyester Resin used as matrix in composites. **07**
- Q.3** (a) Explain manufacturing and properties of Epoxy resin used as matrix in composites. **07**
- (b) Explain Vinyl ester resin used as matrix in composites. **07**
- OR**
- Q.3** (a) Explain the complete manufacturing process of carbon fibres with its flow diagram. **07**
- (b) Classify Glass fibres and explain manufacturing process of Glass Fibre with neat sketch. **07**
- Q.4** (a) Describe Sheet moulding compounds (SMC) process with sketch. **07**
- (b) Write a note on Aramid fibres. **07**
- OR**
- Q.4** (a) Explain Spray-lay up technique with advantages and disadvantages. **07**
- (b) Explain Hand-lay up technique with advantages and disadvantages. **07**
- Q.5** (a) Explain: Gel-time Test. **07**
- (b) Write a note on Ultrasonic test method for Non-destructive testing of composites. **07**
- OR**
- Q.5** (a) Write a note on Acoustic Emission test method for Non-destructive testing of composites. **07**
- (b) Write short note on: (a) Polyethylene fibres (b) Boron fibres **07**

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