

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. Sem. – IInd - Examination – June/July- 2011****Subject code: 1722405****Subject Name: Composite Material Technology****Date: 27/06/2011****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) Explain the merits and demerits of Plastic composites over metals for structural applications. **07**
 (b) Briefly explain the role of matrix and reinforcements in the composites. **07**
- Q.2** (a) Give a brief account of preparation, properties and applications of Unsaturated Polyester resins. **07**
 (b) Discuss open molding process and its advantages and disadvantages. **07**
- OR**
- (b) Discuss continuous process and its advantages and disadvantages for plastics composites manufacturing. **07**
- Q.3** (a) Classify the natural fibers according to their origin. What are the advantages and disadvantages of natural fiber reinforced composites? **07**
 (b) Discuss the uses of sizing agents and coupling agents and distinguish between them. **07**
- OR**
- Q.3** (a) Why are very short fibers used for making thermoplastic composites and long fibers for thermoset composites? **07**
 (b) Thermoset resins can not be processed without additives-- Justify with reasons **07**
- Q.4** (a) Discuss non destructive testing methods for composite materials. **07**
 (b) Write short notes on the following: **07**
 I. Resin transfer Moulding II. Carbon fiber
- OR**
- Q.4** (a) Write short notes on the following: **07**
 I. Gel time II. Accelerators
 (b) Describe the basic description of making BMC and SMC compounds. **07**
- Q.5** (a) Write down the applications of FRP products in marine and space applications. **07**
 (b) Explain the manufacturing process and properties of Epoxy resins **07**
- OR**
- Q.5** (a) Write down the applications of FRP products in electrical and electronics and robotics applications. **07**
 (b) Define the followings: **07**
 I. Whiskers II. Nanocomposites III. Prepregs
