

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
