

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014

Subject code: 1722405

Date: 04-12-2014

Subject Name: Composites Material Technology

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) Explain about the vacuum bag and pressure bag moulding for FRP with neat sketch. **07**
(b) Describe the RTM process in detail with some applications. **07**
- Q.2** (a) Describe in detail about the filament winding process and give the advantages and disadvantages of FRP over metal. **07**
(b) Describe in detail about pultrusion process and write down their applications. **07**
- OR**
- (b) Write a short note on: 1. DMC **07** 2. TMC **07**
- Q.3** (a) Give a brief account of preparation, properties and applications of vinyl ester resins. **07**
(b) What is Non- Destructive Technique? Explain the Ultrasonic Technique used for testing of composites. **07**
- OR**
- Q.3** (a) Write a short note on manufacturing, properties and applications of the following materials: 1. Carbon fibre 2. Aramid Fibre **07**
(b) Explain the types of glass fibre and its manufacturing process in detail. **07**
- Q.4** (a) Explain in brief **07**
 i. Shelf life of resins
 ii. Room and elevated temperature catalysts
(b) Write down the applications of FRP in marine and aerospace field. **07**
- OR**
- Q.4** (a) Write a notes on **07**
 1. Boron fibres
 2. Natural fibres
(b) Explain the manufacturing process and properties of alkyd resins. **07**
- Q.5** (a) Describe the testing methods used to study the mechanical properties of composites. **07**
(b) Define and explain the following terms **07**
 i. Prepregs
 ii. Nanocomposites
- OR**
- Q.5** (a) What is whisker? Explain the manufacturing process of any one type of whisker. **07**
(b) Write down the applications of FRP in manufacturing of chemical storage tank and railway coach. **07**
