

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – SUMMER 2014

Subject Code: 182304**Date: 27-05-2014****Subject Name: Fiber Reinforced Plastics and Composites****Time: 10:30 am TO 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) Define Reinforcement, Matrix & Coupling Agent. Explain role of each in Polymer Matrix Composites. **07**
(b) Short Note :(1) Natural Fiber (2) Boron Fibers **07**

- Q.2** (a) List the advantages and disadvantages of FRP. **07**
(b) List the types of Fibers used in Polymer Matrix Composites Explain manufacturing process of Carbon Fibers with neat sketch, advantages & application. **07**

OR

- (b) List the factors influence design of FRP. Explain about how material selection influence design in FRP. **07**

- Q.3** (a) Explain application of Reinforced Plastics in Aircraft, Military & Automotive. **07**
(b) List mold materials used for manufacturing FRP. Explain about any two in detail. **07**

OR

- Q.3** (a) Explain application of Reinforced Plastics in Marine, Sporting goods & Infrastructures. **07**
(b) List and Explain about types of Glass Fibers according to their application and commercial forms of availability. **07**

- Q.4** (a) Explain manufacturing process of Glass Fibers with neat sketch, advantages, disadvantages & application. **07**
(b) What is Gel-coat? List purpose of Gel-Coats in FRP. Explain about formulations of Gel-Coats. **07**

OR

- Q.4** (a) Explain about Sheet Molding Compound (SMC) in detail. **07**
(b) Explain Resin Transfer Molding process (RTM). **07**

- Q.5** (a) Explain about Bulk Molding Compound (BMC) in detail. **07**
(b) Explain Pultrusion process with neat sketch. **07**

OR

- Q.5** (a) Explain Hand-layup technique for manufacturing FRP product with neat sketch. **07**
(b) Explain Filament winding process in detail. **07**
