Seat No.: _____ Enrolment No._____

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**

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