Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII • EXAMINATION – SUMMER 2013

Subject Code: 182304 Date: 09/05/2013

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 fiber reinforced plastics (FRP) and describe its advantages and disadvantages over conventional plastics.	**07**
	(b)	Define the following 1) Surfacing tissue 2) chopped strand mat 4) woven fabrics 4) continuous fibers 5) low styrene resin 6) low shrinkage resin 7) gel coat	**07**
Q.2	**(a)**	Explain in detail the design parameters for any one type of FRP mold.	**07**
	(b)	Describe major types of polyester resins used in FRP, giving its structure, properties and applications.	**07**
		OR	
	(b)	Describe major types of epoxy resins used in FRP, giving its structure, properties and applications.	**07**
Q.3	**(a)**	Give in detail the curing mechanism of polyester resin and explain the role of inhibitors in it.	**07**
	(b)	Explain the role of accelerators in curing reactions of polyester resin.	**07**
		OR	
Q.3	**(a)**	Describe the role of fillers in FRP with suitable examples.	**07**
	(b)	Compare aliphatic and aromatics amide fibers used in FRP.	**07**
Q.4	**(a)**	Compare and contrast Dough moulding and sheet moulding with suitable sketches.	**07**
	(b)	Describe contact moulding Processes like hand lay up and spray lay up techniques.	**07**
		OR	
Q.4	**(a)**	Describe in detail the Hoechst process for FRP vacuum moulding.	**07**
Q.4	**(b)**	Describe the filament winding process with neat sketches and its significance.	**07**
Q.5	**(a)**	What is meant by Pultrusion? explain with suitable sketches.	**07**
	(b)	List out the major trouble shooting in vacuum assisted resin transfer moulding.	**07**
		OR	
Q.5	**(a)**	Define the centrifugal moulding technique and describe its applications.	**07**
	(b)	List out the major trouble shooting in closed cavity bag moulding.	**07**

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