Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII EXAMINATION – WINTER 2015

Subject Code:182304 **Date:12/12/2015**

Subject Name: Fiber Reinforced Plastics and Composites

Time: 2:30pm to 5:00pm **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 composites. Give classification of composites and also give advantages of fiber reinforced plastics (FRP).	**07**
	(b)	What is the role of styrene in unsaturated polyester resin (UPR)? Explain curing reaction of UPR.	**07**
Q.2	**(a)**	Explain filament winding process along with winding patterns, advantages and applications.	**07**
	(b)	List various types of molds used in FRP. Explain single stage casting epoxide mold.	**07**
		OR	
	(b)	Discuss Plaster mold with neat diagram.	**07**
Q.3	**(a)**	Write about (1) Surfacing Tissues (2) Reduced flammability resins.	**07**
	(b)	Which precursors are used to prepare carbon fiber? Explain manufacturing of carbon fiber with neat flow diagram.	**07**
		OR	
Q.3	**(a)**	Explain with neat diagram manufacturing of corrugated roof sheets using continuous sheet process.	**07**
	(b)	List various raw materials used to prepare unsaturated polyester resin and explain them in detail.	**07**
Q.4	**(a)**	Which process is used to prepare profiles? Explain in detail with neat diagram.	**07**
	(b)	Write notes on: (1) DMC/ BMC (2) Aramid fibers	**07**
		OR	
Q.4	**(a)**	What is the role of fillers? Give various types of fillers used in FRP and explain them in brief.	**07**
	(b)	Which factors are needs to be considered for material and process selection in FRP? Discuss.	**07**
Q.5	**(a)**	Explain vacuum bag molding with neat diagram.	**07**
	(b)	Write about accelerators and inhibitors for unsaturated polyester resin.	**07**
		OR	
Q.5	**(a)**	Explain (1) Gelcoat (2) Low shrinkage /low profile resins.	**07**
	(b)	Give various types and form of Glass fibers along with advantages and disadvantages of glass fibers.	**07**

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