Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER 2013

Subject Code: 163406 **Date: 04-06-2013**

Subject Name: Composite Technology

Time: 10.30 am - 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)**	What are composites? Give advantages and disadvantages of composites.	**07**
	(b)	Explain manufacturing of carbon fibres with flow diagram.	**07**
Q.2	**(a)**	Describe Sheet molding compounds (SMC) process with neat sketch.	**07**
	(b)	What is the role of accelerators? Give detail description on various accelerators used in resin system.	**07**
		OR	
	(b)	Write a note on Aramid fibres.	**07**
Q.3	**(a)**	Explain Hand lay-up process with neat sketch.	**07**
	(b)	Discuss Resin transfer molding process along with advantages and applications.	**07**
		OR	
Q.3	**(a)**	Explain manufacturing of Epoxy resin used as matrix in composites.	**07**
	(b)	Describe Filament winding process with neat sketch and give its applications.	**07**
Q.4	**(a)**	Explain manufacturing of Unsaturated polyester resin used as matrix in composites.	**07**
	(b)	Define: Resin, Gel time, Cure time, Shelf life, Pot life, C-stage resin, catalyst.	**07**
		OR	
Q.4	**(a)**	Explain Vaccum bag molding process with neat and advantages.	**07**
	(b)	Classify Glass fibres and explain manufacturing process of glass fibre with neat sketch.	**07**
Q.5	**(a)**	Explain Pultrusion process used for the manufacturing of profiles.	**07**
	(b)	Explain: Gel-time test.	**07**
		OR	
Q.5	**(a)**	Describe Ultrasonic test method for non-destructive testing of composites.	**07**
	(b)	Give various applications of FRP products in marine and automotive.	**07**

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