Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VIII.EXAMINATION – WINTER 2016

Subject Code: 182103 Date: 22/10/2016

Subject Name: Composite Materials (Department Elective - II)

Time: 02:30 PM to 05:00 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 classification of composites. Describe importance of composites over other conventional materials.	**07**
	(b)	Explain the functions of Matrix & Reinforcements in composite materials. Discuss properties of the materials making them suitable for use as Matrix & Reinforcement.	**07**
Q.2	**(a)**	With suitable examples describe about Dispersion strengthening and particle fiber reinforcement composites.	**07**
	(b)	Describe about Sandwich Panels. Discuss the advantages of these structural composites.	**07**
		OR	
	(b)	What is critical fiber length? Distinguish between Short & Continuous size fiber.	**07**
Q.3	**(a)**	What is a "Hybrid" composite? Compare the hybrid composites and normal fiber composites.	**07**
	(b)	Describe about Fiber reinforced composites. Enlist the factors governs Mechanical Properties of Fiber reinforced composites.	**07**
		OR	
Q.3	**(a)**	Describe with neat sketch the following reinforcements (i) Particulates (ii) Flakes (iii Prepegs	**07**
	(b)	Compare the discontinuous and continuous fiber composites.	**07**
Q.4	**(a)**	Explain the strengthening Mechanisms in composites.	**07**
	(b)	What are Polymer matrix composites? Explain the characteristics of fibers & resin materials in Polymer matrix composites.	**07**
		OR	
Q.4	**(a)**	Explain the Toughening mechanisms in Metal Matrix composites.	**07**
	(b)	Compare Polymer Matrix composites & Ceramic Matrix composites.	**07**
Q.5	**(a)**	Explain the role of interfaces in composites.	**07**
	(b)	Explain with schematic Pultrusion Process of fabricating Polymer matrix composite.	**07**
		OR	
Q.5	**(a)**	Describe the process of synthesis of Nano-composites. Discuss unique properties exhibited by them.	**07**
	(b)	Explain with Schematic Filament Winding process of manufacturing of composite.	**07**

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