Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

Su	bject	BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2017 Code: 2182103 Date: 02/05/20	17
Subject Name: Composite Materials Time: 10:30 AM to 01:00 PM Instructions: Total Marks		: 70	
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Define composite material. Discuss detailed classification of composite materials.	07
	(b)	What are the Fiber reinforced composites? Discuss the factors affecting Mechanical Properties of Fiber reinforced composites.	07
Q.2	(a)	Write Properties & Application of Carbon-fiber, Glass Fiber and Aramid fiber reinforced composites.	07
	(b)	Explain Ex- PAN method of carbon fiber manufacturing process in detail OR	07
	(b)	Explain Ex- Cellulose method of carbon fiber manufacturing process in detail	07
Q.3	(a)	Explain Pultrusion Process of fabricating Polymer matrix composite with schematic diagram	07
	(b)	Discuss in detail the strengthening mechanism in composites. OR	07
Q.3	(a)	What is critical fiber length? Distinguish between Optimal, Short & Continuous size fibers.	07
	(b)	What are the particle reinforcement composites? Give examples and describe their properties and applications	07
Q.4	(a) (b)	Illustrate the boron fiber with its application Derive an expression of rule of mixture to calculate stresses on composites.	07 07
0.4	. ,	OR	
Q.4	(a)	Explain Dry jet wet spinning process of producing aramid fibers	07
	(b)	What is interface? Explain the role of interfaces in composites.	07
Q.5	(a)	Briefly describe Sandwich Panels and explain prime reason for fabricating these structural composites	07
	(b)	Compare Properties of Metal Matrix composite & Ceramic Matrix composites OR	07
Q.5	(a) (b)	Describe the hand lay-up processes of fabricating polymer composites Draw a layout of synthesis of "Nano-composites" and explain unique properties exhibited by Nano-composites.	07 07
