

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3173411****Date:14-12-2023****Subject Name: Composite Technology****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Give classification of Engineering Materials.	03
	(b) Write short note on composite materials.	04
	(c) Give detailed classification of fibres with examples.	07
Q.2	(a) Enlist desired properties of a matrix.	03
	(b) Give difference of Thermosets and Thermoplastics.	04
	(c) Discuss in detail about material properties that can be improved by forming a composite material in detail.	07
	OR	
	(c) What is a Matrix material? Explain function and desired properties of Matrix materials.	07
Q.3	(a) Explain carbon matrix composite	03
	(b) Enlist application of Laminar Composites in different sectors with example.	04
	(c) Explain fiber reinforced polymer in detail.	07
	OR	
Q.3	(a) Write the difference between metal vs composite	03
	(b) Write Advantages & limitations of composites.	04
	(c) What is reinforcement in composite? Give classification of composites on the basis of reinforcement	07
Q.4	(a) Explain Resin-Transplant method used for manufacturing of composite.	03
	(b) Enlist and explain factors to be considered for processing of composite materials	04
	(c) Explain Manufacturing Techniques of Composite Materials.	07
	OR	
Q.4	(a) Explain volume and weight fraction.	03
	(b) How to determine stiffness and strength of unidirectional composite?	04
	(c) Enlist different properties of the composite with detailed explanation.	07
Q.5	(a) Explain flexure and shear in composite material.	03
	(b) Explain Inter-laminar shear testing	04
	(c) Enlist different mechanical testing of composite and explain any two testing in detail.	07
	OR	
Q.5	(a) Write short note on woven reinforcements	03
	(b) Explain Intra-laminar shear testing	04
	(c) Explain continuous fibre and discontinuous fibers with their applications.	07