

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3172919****Date:14-12-2023****Subject Name: Textile Reinforced Composites****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 the classification of Composites based on dispersed phase.	03
	(b) Enlist the disadvantages of Composites.	04
	(c) Discuss function of the matrix and reinforcement in composite.	07
Q.2	(a) Give the disadvantages of natural fibres being used in Composites.	03
	(b) Which are the important advantages of using carbon fibers in composites.	04
	(c) With the help of neat sketch, explain the Hand lay up method for manufacturing PMC.	07
	OR	
	(c) Discuss the applications of Composites.	07
Q.3	(a) What are the principal reasons for highly improved properties of Polymer nanocomposites?	03
	(b) Differentiate between thermosetting and thermoplastic polymers.	04
	(c) Discuss in brief Compression molding.	07
	OR	
Q.3	(a) Discuss in brief about Hybrid Composites.	03
	(b) Discuss in brief Bag moulding process.	04
	(c) Discuss applications of Fiber-reinforced Polymers in Sporting Good.	07
Q.4	(a) With a schematic diagram show the use of fiber-reinforced polymer composite in Airbus 380.	03
	(b) Draw schematic of Autoclave molding.	04
	(c) Discuss problems encountered during the filament winding process and special care that should be taken to overcome them.	07
	OR	
Q.4	(a) Give the schematic of Pultrusion method.	03
	(b) Discuss in brief about Film stacking process used to produce thermoplastic composites.	04
	(c) What are the limitations of Filament winding method?	07
Q.5	(a) What is meant by i. Cross-ply laminate ii. Symmetric laminate.	03
	(b) Enlist limitations of 3 point bending test of composites.	04
	(c) Discuss any one method developed for testing Compressive properties of Fibre-reinforced Composites.	07
	OR	
Q.5	(a) What is meant by i. Laminate ii. Unidirectional laminate.	03
	(b) Enlist the four general categories of metal matrix composites.	04
	(c) Discuss in detail about Void content analysis of Composite.	07
