

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code:3172912****Date:30-05-2024****Subject Name:Principles of Textile Processes****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Why to study behavior of floating fibres during drafting?	03
	(b) Discuss hook formation theory with respect to carding	04
	(c) Discuss the theory of end breaks on Speed frame.	07
Q.2	(a) Which are different zones of spinning Tension ?	03
	(b) Derive an equation for Traveller speed	04
	(c) Derive the equation for comber fractionating efficiency.	07
OR		
	(c) Derive the equations for Balloon Tension in balloon theory at ring frame.	07
Q.3	(a) What is cylinder loading? What is its importance?	03
	(b) Discuss in brief Technique to investigate fibre configuration	04
	(c) Derive the equation to calculate drafting force.	07
OR		
Q.3	(a) State the Significance of fibre acceleration behind top comb	03
	(b) Discuss Foster's theory of perfecting drafting	04
	(c) Derive the equation for Transfer ratio on carding machine	07
Q.4	(a) Write short note on size box.	03
	(b) Explain wet stretch in detail. How can we control it?	04
	(c) Derive the equations of force, torque and power needed to drive the sley.	07
OR		
Q.4	(a) Explain stretch in dry & splitting zone .	03
	(b) Explain relation between shedding and beat-up in shuttle loom.	04
	(c) Explain the steps for determination of average size pick-up	07
Q.5	(a) Explain relation between shedding and beat-up in shuttle loom.	03
	(b) Explain theory of shuttle retardation during checking.	04
	(c) Derive the equations of force, torque and power needed to drive the sley.	07
OR		
Q.5	(a) Which are different types of stretch ?	03
	(b) Explain Torsion rod mechanics of gripper propulsion system.	04
	(c) Derive the equation of pick velocity in air jet loom.	07
