

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3172912****Date: 30/06/2023****Subject Name: Principles of Textile Processes****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
<b>Q.1</b>	(a) Explain the term kinematics for sley.	<b>03</b>
	(b) Discuss briefly various aspects of weft insertion in airjet loom.	<b>04</b>
	(c) What is cylinder loading? Derive an equation to calculate cylinder loading.	<b>07</b>
<b>Q.2</b>	(a) Explain the significance of fiber acceleration behind top comb.	<b>03</b>
	(b) Discuss the factors affecting drafting force.	<b>04</b>
	(c) Derive the formula for friction forces in negative let off motion also discuss design of let off mechanism.	<b>07</b>
<b>OR</b>		
	(c) Explain the retardation of shuttle with hinged swell, along with necessary diagrams.	<b>07</b>
<b>Q.3</b>	(a) State the configuration of fibers in card sliver.	<b>03</b>
	(b) Explain only procedure to find out transfer efficiency.	<b>04</b>
	(c) Derive equation of winding tension in a spinning balloon zone.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) What is perfect drafting? Why it is not achieved in conventional draw frame.	<b>03</b>
	(b) Discuss the various factors affecting the unwinding tension.	<b>04</b>
	(c) Discuss briefly effect of l/r ratio on type of movement to sley.	<b>07</b>
<b>Q.4</b>	(a) Briefly write about the factors which influence uniform acceleration during picking.	<b>03</b>
	(b) Discuss the causes of end breaks in ring frame.	<b>04</b>
	(c) With suitable curves discuss the velocity and acceleration of projectile.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain interrelationship between shedding and beating.	<b>03</b>
	(b) Derive an equation for sley velocity and acceleration	<b>04</b>
	(c) Which factors are considered for the optimization of cleaning at blow room.	<b>07</b>
<b>Q.5</b>	(a) Explain briefly about Alacrity of picking mechanism.	<b>03</b>
	(b) Write short note on power required for picking.	<b>04</b>
	(c) Explain with neat sketch various types of stretch zones in sizing machine.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain the importance of size pick up.	<b>03</b>
	(b) Derive an equation for traveler speed.	<b>04</b>
	(c) Explain foster theory of perfect drafting.	<b>07</b>

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