

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 7 – EXAMINATION – SUMMER 2026

Subject Code: 3172912

Date: 05/06/2026

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.**

- Q.1** (a) Explain the term kinematics for sley. **03**
(b) What are the reasons of end breaks at ring frame? **04**
(c) Explain foster theory of perfect drafting. **07**
- Q.2** (a) Explain, how to evaluate cleaning efficiency of blow room? **03**
(b) State the limitations of negative friction type let off motion. **04**
(c) What is size pick up? Discuss the various factors affecting it. **07**
- OR
- Q.2** (c) Elaborately discuss the causes of end breaks in open end spinning. **07**
- Q.3** (a) Explain about various factors affecting drafting force. **03**
(b) Explain trailing hook formation mechanism on a card. **04**
(c) Derive an equation to calculate cylinder loading. **07**
- OR
- Q.3** (a) Explain only procedure to find out transfer efficiency. **03**
(b) State important aspect to be considered for designing of picking cam. **04**
(c) Derive an equation of yarn tension at any radius 'r'. **07**
- Q.4** (a) Which are factors affecting velocity of the shuttle on a loom? **03**
(b) Define eccentricity of sley. Also mention any two ways of changing eccentricity of sley. **04**
(c) Derive an equation for traveler speed. **07**
- OR
- Q.4** (a) How to find out fiber configuration in card sliver? **03**
(b) Compare negative let off with positive let off mechanism. **04**
(c) With the help of retardation curve compare the performance of conventional hinged swell with that of floating swell. **07**
- Q.5** (a) Discuss briefly various aspects of weft insertion in airjet loom. **03**
(b) State the types of stretch in sizing and factors affecting it. **04**
(c) With suitable curves discuss the velocity and acceleration of projectile. **07**

OR

Q.5	(a) Explain the alacrity of picking mechanism.	03
	(b) Derive equation for 'Power required for picking'.	04
	(c) Define and derive comber fractionation efficiency.	07
