

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V EXAMINATION – SUMMER 2025

Subject Code:3152909

Date:22-05-2025

Subject Name: Fabric Formation III

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) Give the classification of narrow fabric manufacturing techniques	03
	(b) Describe any one type of shuttle drive used in a circular loom.	04
	(c) With the help of neat diagram, explain the Electronic Let off mechanism of Air Jet loom	07
Q.2	(a) Discuss the applications of nonwovens in filtration.	03
	(b) Give classification rapier looms.	04
	(c) With the help of neat diagram, explain how cross laid web is obtained.	07
	OR	
	(c) With the help of neat diagram, explain the principle of working in spun laced fabrics.	07
Q.3	(a) What are 3D fabrics and how are they constructed?	03
	(b) List the methods of constructing the leno fabric. Also illustrate the structure of fabric using a single beam and double beam.	04
	(c) Briefly explain how a rotating bobbin and geared disc produce leno selvedge.	07
	OR	
Q.3	(a) Write a brief note on “Mechanical Finishing of Nonwovens”.	03
	(b) With the help of neat diagram, explain how spun laid nonwovens are manufactured.	04
	(c) With the help of neat diagram, explain the principle of working of mechanical shedding mechanism on needle/tape loom.	07
Q.4	(a) List the various systems of weft insertion in airjet weaving	03
	(b) Distinguish between Dewas & Gabler system in rapier weaving.	04
	(c) With the help of neat diagram, explain the principle of working of Torsion Bar Picking mechanism of Projectile loom.	07
	OR	
Q.4	(a) Describe the role and significance of maintaining water quality in water jet weaving.	03
	(b) Write a brief note on “Measurement & Analysis of nonwoven fabrics”.	04
	(c) With the help of neat diagram, explain the principle of working of needle punching loom.	07
Q.5	(a) Give the classification of nonwoven based on the production technology.	03
	(b) With the help of neat diagram, explain the beat up mechanism on tape/needle loom.	04

- (c) With the help of a neat diagram, explain the single rapier tip transfer type weft insertion system in detail **07**

OR

- Q.5** (a) Give the difference between a circular and a flat braid. **03**
(b) Discuss the advantages of shuttleless looms over shuttle looms. **04**
(c) With the help of a neat diagram, explain the principle of working of flat braiding machine. **07**
