

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering - SEMESTER - III EXAMINATION - WINTER 2025

Subject Code: BE03029031

Date: 19-12-2025

Subject Name: Fabric Manufacturing Techniques - I

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) Classify different kind of looms with utility of each loom.	03
(b) Give the difference between woven and nonwoven fabric.	04
(c) Explain passage of material through plain power loom with neat sketch.	07
Q.2 (a) Define Nonwoven fabrics. Classify the nonwoven fabrics according to their bonding method.	03
(b) State and explain different motions of plain power looms.	04
(c) Differentiate between beam warping machine and sectional warping machine.	07
OR	
(c) Describe the flexible rapier loom picking mechanism.	07
Q.3 (a) Mention the purpose of warping.	03
(b) Why weft accumulators are used in non-conventional looms?	04
(c) With neat sketch explain picking mechanism of airjet and projectile weaving machine.	07
OR	
(a) Give classification of dobbies.	03
(b) Mention the objectives of Sizing.	04
(c) Explain passage of material through two-cylinder sizing machine with diagram.	07
Q.4 (a) Draw the coil path of a cylindrical package with Traverse Ratio 2.5, length of traverse 10 cm and circumference of package 12 cm.	03
(b) Show that the winding speed remains constant in case of a drum driven cheese.	04
(c) Classify winding machines on the basis of mode of package rotation. Discuss any one types along with their merits and demerits.	07
OR	
(a) Find out the length of yarn on a package weight of yarn in 3 kg and yarn count is 20 ^s English.	03

- (b) What is knitting? Give it brief classification. 04
- (c) Write short notes on additive and multiplicative type yarn tensioner. 07
- Q.5** (a) Define term: splicing and knotting. 03
- (b) Explain about Uster Classimat III. 04
- (c) Explain working principle of electronic yarn clearer. 07

OR

- (a) Explain briefly about drawing-in and denting operation. 03
- (b) Calculate production of cone winding machine having following data. 04
 - Drum Speed : 2000 rpm
 - Drum Diameter : 3 inches
 - No of Drum : 60
 - Shift Hours: 7.5
 - Efficiency: 85 %
 - Count of Yarn: 40 Ne
 - Find out actual production in kgs.
- (c) Explain passage material through pirn winding machine with suitable diagram. 07
