



B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fourth Semester

FASHION TECHNOLOGY

U18FTT4001: Fabric Formation Technology

COURSE OUTCOMES

- CO1:** Acquaint with the objectives and acquire knowledge of working principles of machinery used for preparation of yarn for weaving.
- CO2:** Describe the working principle of beam preparatory machines for weaving.
- CO3:** Acquire knowledge in the selection of sizing ingredients for different fibres.
- CO4:** Understand the objectives and working principles of shuttle and shuttleless looms.
- CO5:** Develop knowledge in the selection of suitable preparatory processes for weaving
- CO6:** Acquire knowledge on nonwovens manufacturing techniques and its applications.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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| 1. A weaving mill produces curtain fabric using shuttle looms. Mill has purchased cotton yarn of 24 ^S for warp and weft yarns. Decide the suitable winding process for preparing weft yarns with 2 inferences to produce a curtain. | CO1 | [K ₂] |
| 2. Summarize any four yarn quality requirements for weaving. | CO1 | [K ₂] |
| 3. Classify the types of creels used in warping machines. | CO2 | [K ₂] |
| 4. Outline the objectives of sizing. | CO3 | [K ₁] |
| 5. Quote secondary motions used in automatic loom. | CO4 | [K ₂] |
| 6. Shuttleless loom generates less noise than shuttle loom. Justify the statement. | CO5 | [K ₄] |
| 7. Compare water jet and air jet loom. | CO4 | [K ₂] |
| 8. List the importance of computerized fabric inspection. | CO4 | [K ₂] |
| 9. Prioritize the following bonding techniques in terms of environmental harmness from low to high with your justification. | CO6 | [K ₄] |

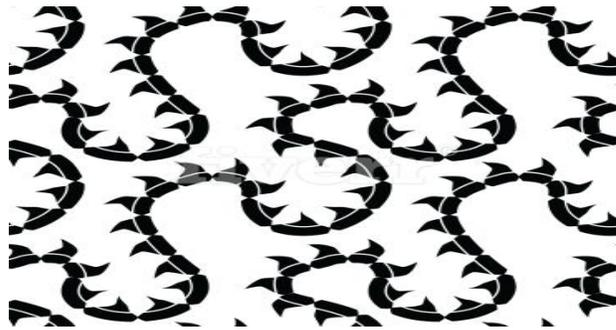
Needle punching, chemical bonding and Thermal bonding.

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|--|-----|-------------------|
| 10. Provide any four real time applications of non-wovens. | CO6 | [K ₂] |
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Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11. a) Elaborate the working principle of cone winding machine with line diagram. 8 CO1 [K4]
b) Demonstrate the process flow of cotton grey fabric production and provide importance of each process. 8 CO1 [K3]
12. a) Discuss the working principle of sectional warping machine with schematic diagram. 8 CO2 [K3]
b) Formulate the process of sizing filament yarns with line diagram. 8 CO3 [K4]
13. a) Compose the mechanism of dobby weaving and list the primary motions used in handloom. 6 CO4 [K2]
b) A designer wants to develop a kameez using the following complicated motif and create an allover design using following specifications. 10 CO4 [K4]

Fabric composition-100% cotton, EPI – 108, PPI – 76, GSM – 110, Fabric width in Inches – 36.



Determine the suitable shedding mechanism for producing the kameez and discuss the working principle with schematic diagram

14. a) A weaving mill has received an order for producing suiting fabric. Suiting specifications are 100% cotton, warp and weft yarn count of 60^s. Mill has projectile and water jet looms. 8 CO5 [K4]
Mill demands less consumption of energy and less weft waste for producing the suiting fabric. Conclude a suitable shuttleless loom for producing suiting with your 2 interpretations. Discuss the working of concluded shuttleless loom with schematic diagram.

- b) Explain the loop transfer weft insertion and tip transfer weft insertion of rapier shuttleless loom with line diagram. 8 CO5 [K₃]
15. a) Explain the concept of mechanical and optical yarn clearer and summarize the function of splicer. 8 CO5 [K₃]
- b) Compile the sizing materials used in cotton sizing and discuss the role of each material used in the sizing process. 8 CO5 [K₄]
16. a) Elaborate the process of spun bonding and chemical bonding of nonwoven with schematic diagram. 8 CO6 [K₃]
- b) Demonstrate the melt-blown process of nonwoven with line diagram. 8 CO6 [K₂]
