



B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fourth Semester

TEXTILE TECHNOLOGY

U18TXI4202: Fabric Manufacture II

COURSE OUTCOMES

- CO1:** Discuss the concept of shuttle less loom and its evaluation.
CO2: Discuss the concept and mechanism of shuttleless weaving machine.
CO3: Discover the nonwoven technology.
CO4: Describe the various nonwoven web laying and web bonding systems.

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. Give the importance of weft accumulator in shuttleless loom. | CO1 | [K ₂] |
| 2. Why unconventional selvages are required in shuttleless looms? Give its types. | CO1 | [K ₂] |
| 3. State the functions of projectile feeder and ribbed tunnel. | CO2 | [K ₃] |
| 4. Calculate the weft insertion rate in meter per minute of air jet weaving machine running at a speed of 600 PPM, to produce 320 cm width of fabric with an efficiency of 94%. | CO2 | [K ₃] |
| 5. Highlight the importance of multiphase weaving. | CO2 | [K ₂] |
| 6. Define nonwoven based on INDA. | CO3 | [K ₂] |
| 7. What are the segments of nonwoven? | CO3 | [K ₂] |
| 8. What are the web bonding technique used in nonwoven manufacturing? | CO4 | [K ₃] |
| 9. What is SMS bonding nonwoven technique? | CO4 | [K ₃] |
| 10. Give the merits of chemical bonding nonwoven technique. | CO4 | [K ₃] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11. Explain in detail any one type of weft accumulator with neat sketch. CO1 [K₃]
12. The bed sheet cloth is produced on a projectile weaving machine, the multi-width fabrics occupy a reed space of 220 cm and the pick density per cm is 30. The Projectile having an average velocity of 24 m/s covers 220 cm during a period of 2/3rd of the loom. The efficiency of the loom is 94 %.
- Calculate
- (i) The maximum loom speed in PPM
 - (ii) The weft insertion rate in MPM and
 - (iii) Productivity of the machine in meters per shift of 8 hours.
13. Describe the air quality requirements and water quality requirements of fluid jet loom. CO2 [K₃]
14. Describe the working principle of melt blown process with neat sketch. CO3 [K₃]
15. Explain the working principle of parallel laid web formation technique with neat sketch. CO4 [K₃]
16. Explain the working principle of needle punched nonwoven with neat sketch. CO4 [K₃]
