



B.TECH DEGREE EXAMINATIONS: APRIL 2018

(Regulation 2014)

Eighth Semester

FASHION TECHNOLOGY

U14FTE501:Nonwovens

COURSE OUTCOMES

- CO1: Acquire knowledge in different fibers used in nonwovens.
 CO2: Acquire knowledge in web formation techniques.
 CO3: Explain different web bonding techniques of non-woven.
 CO4: Acquire knowledge in finishing of nonwovens.
 CO5: Develop skills in testing of nonwovens.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Match the finishing technology with types of finishes

CO4 [K₁]

List I	List II
A. Dry finishing process	i. Printing and coating
B. Wet finishing process	ii. Singing and gringing
C. Laminating	iii. Anti-repellent and UV finish
D. Chemical finishing	iv. Dry and wet

- | | A | B | C | D |
|----|-----|-----|-----|-----|
| a) | i | ii | iii | iv |
| b) | ii | i | ii | iii |
| c) | iii | iv | i | ii |
| d) | iv | iii | iv | i |

2. The definition of non wovens fabrics states that fibres are held together by _____
to forma fabric.

CO1 [K₁]

- | | |
|-------------|------------|
| a) Spinning | b) Felting |
| c) Bonding | d) Gumming |

3. Anti-microbial finish is given to non-woven fabrics CO4 [K₂]
1. To develop the best water repellency
 2. To control populations of bacteria, fungi, algae and viruses on the substrate.
 3. To improve the conductivity of the fibers
 4. To prevent the biological degradation of the product or prevents the growth of undesirable organisms.
- Which of the statements are correct?
- a) 1,3 b) 1,4
- c) 1,2 d) 2,4
4. This process involves the application of rapidly alternating compressive forces to localized areas of fibers in the web. CO2 [K₂]
- a) Radiant heat bonding b) Ultrasonic bonding
- c) Through-air bonding d) Belt calendaring
5. Assertion (A): The correct choice of a fibre opening, cleaning and blending system is utmost importance to ensure a profitable non-woven manufacturing operation. CO3 [K₁]
Reason (R): The poor fibre opening, cleaning and mixing creates faults that the subsequent production steps are unable to rectify.
- a) Both A and R are Individually true and R is not the correct explanation of A b) A is true but R is false
- c) Both A and R are Individually true but R is the correct explanation of A d) A is false but R is true
6. Of the man-made fibers, rayon (viscose) has been the leader in bringing about changes in the non-woven industry and today it is used widely mainly due to the following factor CO3 [K₂]
- a) High softening b) Thermo plasticity
- c) Ease of processing on all types of web-forming and bonding equipment d) Good dimensional stability,
7. The working of binder mainly involves the following of stages: CO3 [K₁]
1. Removal of moisture 2. Formation of non-woven fabric
 3. Binder application to nonwoven 4. Formation of strong bond between binder and non-woven
- a) 2-3-4-1 b) 1-3-2-4
- c) 3-4-2-1 d) 3-1-4-2

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|-----|---|-----|-----|-------------------|
| 22. | (i) Describe the production steps for different methods of non-woven manufacturing. | (7) | CO2 | [K ₃] |
| | (ii) Write short notes on the web laying techniques of parallel laid webs and cross laid webs. | (7) | CO2 | |
| 23. | (i) State the steps involved in needle punching technology of non-woven production. | (7) | CO3 | [K ₃] |
| | (ii) Describe the hydro entanglement method of mechanical bonding technique with illustration | (7) | CO3 | |
| 24. | (i) Describe the two dry finishing process of shrinkage and wrenching and creping. | (7) | CO4 | [K ₄] |
| | (ii) Explain the two chemical finished of anti-static finish and water repellent finish. | (7) | CO4 | |
| 25. | (i) Explain the method of thermal bonding with illustration. | (7) | CO3 | [K ₃] |
| | (ii) Describe the process of flocking. | (7) | CO4 | |
| 26. | Explain the steps involved in testing the abrasion resistance of nonwoven fabrics by Inflated Diaphragm Apparatus method. | | CO5 | [K ₄] |
| 27. | Describe the method of analysing the hydraulic bursting strength of nonwoven materials by Motor Driven Diaphragm Bursting Strength Tester Method. | | CO5 | [K ₃] |
