

B.TECH DEGREE EXAMINATIONS: MAY/JUNE 2014

(Regulation 2009)

Second Semester

Textile Technology

TTX101: Textile Fibres

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Which one of the following is essential property of fibres?
A. Length B. Crimp C. Absorption D. Warmthness
2. Select the naturally available filament.
A. Viscose B. Wool C. Cotton D. Silk
3. Convolutions present in the Indian cotton fibres is --- per inch.
A. 450 B. 350 C. 250 D. 150
4. Which one of the following is not a major amino acid present in silk?
A. Glycine B. Alanine C. Serine D. Methionine
5. Shredding of steeped pulp results in ----
A. Increase in surface area B. Decrease in surface area
C. Constant surface area D. Increase in density of pulp
6. Raw material required for the production of casein fibres is ---
A. Maize B. Potato C. Soybean D. Milk
7. Select the raw material used for the production of PP fibre.
A. Isotactic PP B. Atactic PP C. Syndiotactic PP D. Any PP
8. Select the fibre that is chemically inert.
A. PP B. Wool C. Cotton D. Nylon
9. Select the glass fibre that is suitable for electrical insulation.
A. S glass B. E glass C. D glass D. C glass
10. Select the fibre that is inherently flame retardant.
A. Viscose B. Wool C. Cotton D. Nylon

PART B (10 x 2 = 20 Marks)

11. Distinguish between staple fibre and filament.
12. List the characteristics of fibre forming polymers.

13. What are the parameters involved in grading of wool fibres?
14. List different wild silk fibres.
15. Differentiate between secondary and triacetate fibres.
16. State any two merits of manmade fibres.
17. What are the monomers used for the production of Nylon 6 and Nylon 6, 6?
18. Differentiate between acrylics and modacrylics.
19. What are aramids?
20. Give the chemical structure of Polyurethane fibre.

PART C (5 x 14 = 70 Marks)

21. a) Classify the fibres on different basis with suitable examples.

(OR)

- b) (i) Explain the terms DP, Molecular weight, Orientation and Crystallinity. (7)
- (ii) Discuss the essential properties of fibres for the production of apparels. (7)

22. a) (i) Tabulate the physical and chemical properties of cotton fibres. (10)
- (ii) What do you understand by the term 'spiral angle' in cotton fibres? (4)

(OR)

- b) Compare the physical and chemical properties of wool and silk.

23. a) Explain the process sequence of casein fibre production.

(OR)

- b) (i) Why do certain fibres exhibit low wet modulus? How this can be improved? (8)
- (ii) Compare any six properties of viscose and Tencel fibres. (6)

24. a) How can we alter the reactivity and structure of acrylic fibres? Explain.

(OR)

- b) (i) Suggest a non-destructive method of distinguishing PP fibre from PET fibre. Justify your answer. (7)
- (ii) 100% acrylic cannot be converted into fibre form. Why? (7)

25. a) Explain the microscopic and burning methods of identifying different fibres.

(OR)

b) Explain the density and solubility methods of identifying different fibres.
