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Total Number of Pages : 02

B.Tech
PTX4I101

**4th Semester Back Examination 2018-19
FIBRE SCIENCE & TECHNOLOGY – II**

BRANCH : TEXTILE

Max Marks : 100

Time : 3 Hours

Q.CODE : F262

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What is Wool felting? Why it occurs?
- b) Write the density of the cotton, wool, silk and polyester fibre?
- c) Write the protein present in silk and wool?
- d) In melt crystallization and Solvent crystallization which is having higher crystallinity and why?
- e) What is difference between IED (Instantaneous Elastic Deflection) and Primary creep?
- f) Justify that : dimension of sample influences the tensile test result.
- g) Illustrate is yield point?
- h) State uniformity ratio?
- i) Air jet texturing is what type of texturing process?
- j) If fineness of the fibre increases what is the effect on its dye ability?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Explain moisture content and moisture regain? Formulate a relation between these two.
- b) Explain the morphological structure of the cotton fibre with neat diagram?
- c) Explain the Baer sorter method for fibre length measurement?
- d) Define **Stress** and **Specific Stress**? Also establish a relation between them.
- e) Explain about hysteresis in moisture absorption and desorption processes. Mention the cause of both?
- f) Explain briefly why secondary creep is not recoverable?
- g) State the factors affecting the tensile test results?
- h) Define Bundle Strength of fibre and its importance? Explain the measuring procedure of bundle strength by stelo meter?
- i) Write about "Stuffer Box" texturing process with neat diagram?
- j) The 2.5% Span length and Uniformity ratio of a particular variety of cotton fibre are 30 mm and 45% respectively. Calculate the 50% Span length (mm) of the fibre?
- k) If fibre fineness is 3.5 Micronaire, then Calculate the number of fibre in the cross-section of 40 Ne cotton yarn?
- l) Explain about the yarn texturing and classify it? What are the advantages of yarn texturing?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Describe the method of the measurement of maturity ratio of cotton fibre by caustic soda method? In above observation out of 150 fibers let 110 fibers are mature and 35 fibers are dead then find the maturity ratio and degree of thickness of that observed fibre? **(8+5+3)**
- Q4** Discuss how fibre fineness affects the final textile product and its properties? Describe the measuring procedure of fibre fineness by airflow method with clean diagram? **(8+8)**
- Q5** Describe Perfect Elastic, Complete Elastic and Imperfect Elastic with Deflection and Load graph and Draw a creep and recovery diagram with respect to time with correct notation? **(6+10)**
- Q6** Classify textured yarn as per their behavior point view? Describe briefly about false twist texturing and Airjet texturing with clear diagram? **(2+7+7)**