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Total Number of Pages : 02

B.Tech  
PTX6I102

6<sup>th</sup> Semester Regular / Back Examination 2018-19

TESTING OF TEXTILE MATERIALS

BRANCH : TEXTILE

Max Marks : 100

Time : 3 Hours

Q.CODE : F223

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 do you mean by RH value of the atmosphere and its important in textile testing?
- b) 4 Cotton sliver of 6% CV and 5 polyester sliver of 4% CV is blended together what will be the resultant sliver CV%?
- c) What is GSM and GLM, derive a mathematical relation between these two?
- d) State the effect of crimp of the fabric on its abrasion resistance and justify your answer?
- e) Co relate drupe coefficient of a fabric to its drapability?
- f) "Elmendorf Tester" is used for which testing? State any other machine you know, used for that test?
- g) Illustrate the effect of increasing the traverse speed of the tensile tester on the test results, justify your answer.
- h) Explain the working principle of CRE, CRL, and CRT? Name a machine of each principle.
- i) If a fabric shrinks 5% in length and elongates 2% in width, calculate change in GSM value?
- j) What do you mean by "First Quality" and "Second Quality" in 10 point system?

**Part- II**

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

- a) Define quality. Why do we carry out testing of the materials at different stages?
- b) Explain the term Conditioning and its importance in textile testing? Write the standard condition for textile testing?
- c) Define Count? Formulate an equation for conversion of Ne to Tex and Nm to Tex value?
- d) Explain angle of twist and its impact on yarn strength? Derive the formula to calculate the twisting angle of a yarn.
- e) Enumerate Index of irregularity? Calculate the limit irregularity for a 20 Tex cotton yarn spun from 150 mtexfibres. If the measured CV% is 23.2%, what is the Index of Irregularity?
- f) Explain the term CSP and its uses in textile testing? A 15 Tex yarn is having lea strength of 24 Kg, find the CSP value of it.
- g) A plied yarn of 30 Tex with contraction percentage of 6% is untwisted and again twisted till contraction percentage of 5%. What is the final count of the yarn in English system after re-twisting?

- h)** Explain about thickness tester? State the major factors which should be taken care of while testing thickness of different types of fabric?
- i)** Explain crimp and justify briefly how crimp affects fabric properties?
- j)** Define Pilling and its causes and remedy? Explain its measuring method shortly.
- k)** If two roving each with a CV of 8% are fed into a spinning zone and the spinning unit adds a CV of 18%, then Calculate the CV of the output yarn?
- l)** Illustrate about 4 point system? Explain details of its measuring process

### **Part-III**

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

- Q3** Discuss about importance of twist and type of twist in textile yarn? How it affects yarn properties? Explain at least three measuring procedure of yarn twist. **(16)**
- Q4** Describe the types of irregularity and Cause of Irregularity of textile yarn? How can we calculate these irregularities? Discuss the method for improving regularity? **(16)**
- Q5** Describe yarn hairiness and its impact on spinning, weaving, knitting and other process? Discuss the major factors of hairiness? Define Hairiness Index? **(16)**
- Q6** Discuss drape and its importance in textile industries? Explain briefly the measuring procedure of the drape co-efficient of a fabric. **(16)**