

**H 1537**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Sixth Semester

Textile chemistry

TT 343 — QUALITY ASSESSMENT OF TEXTILES

(Common to Textile Technology)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Briefly describe the principle 'loop test' for measuring the stiffness of fabrics.
2. Two fabrics have the following area densities : Fabric (a) 88.56, 88.24, 87.79 and 89.05 GSM, Fabric (b) 87.53, 88.05, 89.04, 88.34, 89.33 GSM. Can it be said that the means and variances of the area densities of two fabrics are identical at 99% confidence limit?
3. What is a fabric 'pill'? What types of fabrics tend to form pills? why?
4. Name the fibre properties that the High Volume Instrument (HVI) can measure.
5. Briefly state what is meant by the term 'a full factorial design' in statistics.
6. Explain the terms 'yarn cover factors' and 'fabric cover factor' and 'fabric cover factor' giving the formulas to calculate each.
7. Define the meaning of the fabric property 'Drape'.
8. Define the term "work of rupture" and give the name of any one tester that can measure the work of rupture of a yarn.
9. Name an instrument that can measure fibre trash content and state its principle of operation.
10. Name few online testing techniques.

PART B — (5 × 16 = 80 marks)

11. (i) Describe the principle the operation of any fibre fineness tester. (10)  
(ii) Describe any one method of determining the maturity of cotton fibres. (6)
12. (a) Describe the working of a fabric abrasion tester. Discuss the importance of abrasion resistance in fabrics meant for apparel and non-apparel use.

Or

- (b) Discuss the principle of operation and use of testers for measuring the irregularity and imperfections of yarns, and discuss their use in production quality control in a mill.
13. (a) Describe what is meant by the term 'objective evaluation' as applied to the comfort properties of fabrics. Describe one set of instruments capable of making such an evaluation.

Or

- (b) Write short notes on :
- (i) 'VI' and 'BI' curves. (4)  
(ii) CRL, CRE and CRT methods of testing. (4)  
(iii) Colour fastness testing. (4)  
(iv) The measurement of fabric "TIV". (4)
14. (a) Name and describe the different types of "Quality Control Charts" known to you and discuss their role in production control on the shop floor.

Or

- (b) Name the different types of testers used for the measurement of twist of single and ply yarns, describing the principle and method of use of any one in detail. Discuss the effect of yarn twist on the other yarn properties, and on the fabrics made from the yarn.
15. (a) Give an account of the principle and working of various online testing techniques adopted in fibre processing.

Or

- (b) "*The high variation of natural textile materials makes it essential to use statistical methods and concepts to describe their properties*". Discuss the truth or falseness of this statement and give an overview of the quality control procedures used in spinning - from Blow-room to Ringframes, covering the use of statistics - if any - in the procedures.