

Reg. No. : 

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**R 3636**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Fourth Semester

Structure and Properties of Fibres

TT 1255 – TEXTILE TECHNOLOGY

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the chemical structure of cotton fibre.
2. Define reversals and convolutions.
3. State the factors influencing moisture absorption of fibres.
4. Define hysteresis in moisture absorption.
5. Differentiate initial modulus and dynamic modulus.
6. What is secondary creep?
7. Define specular and diffused reflection.
8. State and define the orientation measuring parameter.
9. Define electrostatic series.
10. Define T<sub>g</sub>.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the fine structure and the chemical nature of wool fibre.

Or

- (b) Highlight the features of the following fibre structure models.

(i) Micelle models.

(ii) Fibril models.

12. (a) Define the parameters of heats of sorption and explain the conditioning mechanism.

Or

- (b) Compare and contrast

(i) Absolute humidity Vs relative humidity

(ii) Moisture content Vs moisture regain.

13. (a) Explain the creep and stress relaxation experiments to study the time effects.

Or

- (b) Define torsional rigidity and derive an expression for bending/flexural rigidity.

14. (a) Explain the Amonton's law and Bowden's adhesion–shearing mechanism.

Or

- (b) With suitable examples highlight the various factors influencing.

(i) Lustre of fibres.

(ii) Wool's friction.

15. (a) Highlight the problems due to static electricity and discuss their remedial measures.

Or

- (b) Define and explain :
- (i) Thermal transitions.
  - (ii) Heat setting.
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