L 1174

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

Fourth Semester

Textile Technology

TT 1255 — STRUCTURE AND PROPERTIES OF FIBRES

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the cross sectional view of cotton and viscose fibres.

2. Briefly discuss about the 'Fringed micelle model'.

3. Write the relation between moisture content and regain.

4. What do you mean by dynamic equilibrium?

5. Write the difference between Load-elongation curve and Stress-Strain curve.

6. Define 'specific stress'.

7. Brief the usefulness of fibre friction in the aspect of textile technology.

8. Define the term "Birefringence of fibre".

9. Prediction of actual specific heat of fibre is very difficult even at constant regain - Justify.

10. Define the term "Mass Specific resistance".

PART B — (5 × 16 = 80 marks)

11. (i) Explain the theory of reflection and luster. (8)

(ii) Discuss about the role of friction in fibre processing. (8)

12. (a) Explain the structural features of two different fibres with same origin and relate that into their physical properties.

Or

(b) Explain the structural investigation of fibres using Infra-red radiation.

13. (a) Explain the theory of conditioning process and its influencing factors.

Or

(b) Discuss the relations between regain and relative humidity for various textile fibres.

14. (a) Explain the theory of stress-strain behaviour of various textile fibres at various humidity and temperature.

Or

(b) Discuss in detail about the creep phenomena.

15. (a) Explain the measurement of resistance of textile fibres using null method.

Or

(b) Write short note on the following :

(i) Heat setting of fibres. (8)

(ii) Dielectric properties of fibres. (8)

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