17226

21819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any TEN of the following : **10 × 2 = 20**

(a) State factors governing sampling methods.

(b) Define Numerical sample.

(c) Draw microscopic view of cotton and wool.

(d) State formulae for moisture content and moisture regain.

(e) Define 'Relative humidity'.

(f) Define Uniformity Ratio with formulae.

(g) List four methods of measurement of fibre length.

(h) State any two measures of Fibre fineness with definition.

(i) State effect of fibre fineness on yarn irregularity or unevenness.

(j) List methods of measuring fibre maturity.

(k) Draw diagrams of cross-section of fully mature, half mature and immature cotton fibre.

(l) State significance of trash in cotton.

(m) Define neps. State it's causes.

(n) Give formulae for relation between effective length and staple length.

2. Attempt any TWO of the following : **8 × 2 = 16**

(a) (i) Describe objectives of Textiles Testing. **4**

(ii) Describe the cut squaring method of Fibre sampling. **4**

(b) Describe zoning technique for selecting cotton fibre sample with the help of schematic diagram.

(c) Explain in detail the effect of moisture on fibre properties and processing.

3. Attempt any TWO of the following : **8 × 2 = 16**

(a) Draw the comb sortor diagram and describe step-by step analysis of the same to get effective length, mean length, % dispersion and short fibre content.

(b) Describe with neat sketch determination of fibre fineness by Air-flow method. Also define "micronaire".

(c) Explain in detail measurement of Fibre maturity by caustic soda method. Also write different ratings for maturity coefficient.

4. Attempt any TWO of the following : **8 × 2 = 16**

(a) (i) Elaborate the method of differential dyeing to check maturity of Fibre.

(ii) Describe the concept of "degree of cell wall thickening".

(b) (i) Describe in detail the technical significance of fibre fineness.

(ii) Define micronaire, denier, decitex and tex.

(c) (i) "All the spinning technicians are guided by most important fibre property 'Fibre Length'." Elaborate the statement.

(ii) Explain method of measurement of Fibre Length by oil-plate method. Also write importance of short-fibre content.

5. Attempt any TWO of the following : **8 × 2 = 16**

(a) (i) Describe the concept of span length and uniformity ratio with help of diagram. **4**

(ii) Explain the process of identification of the following fibers (1) cotton, (2) silk. **4**

(b) Explain the Gravimetric method for determination of Fibre fineness.

(c) Describe technical significance of Fibre maturity and also explain factors affecting maturity.

6. Attempt any TWO of the following : **8 × 2 = 16**

(a) Explain the process of determination of trash content in cotton using Shirley trash analysis.

(b) (i) Describe the American system of cotton grading.

(ii) Explain microscopic method of measuring fibre fineness.

(c) Describe the determination of effective length by comb sorter method. Explain the method of sorting and preparing fibre array.