17226

14115

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

Instructions – (1) All Questions are *Compulsory*.

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

(3) Figures to the right indicate full marks.

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

Marks

1. Attempt any <u>TEN</u> of the following : **20**

a) Define Random sample.

b) Define 'Biased Sample'.

c) State the necessity of sampling.

d) How will you identify polyester and viscose fibre by burning test ?

e) Define 'Relative humidity'.

f) State the difference between moisture content and moisture regain by giving their formulae.

g) Give formula for relation between effective length and staple length.

h) List any four methods of measurement of fibre length.

i) State the importance of fibre length measurement.

j) State the relationship between mass/unit length and diameter of fibre.

Marks

k) State various methods of determination of fibre fineness.

l) What is necessity of measurement of fibre fineness.

m) Draw diagrams of cross section of fully mature, half mature and immature cotton fibre.

n) Define 'Neps'.

m) What are the consequences of neps in cotton yarn ?

2. Attempt any <u>TWO</u> of the following : **16**

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

b) Explain in detail the effect of moisture on fibre properties.

c) Describe the concept of span length and uniformity ratio with help of diagram. Describe how digital fibrograph works and elaborate how the measurment of span length and uniformity ratio will be beneficial in spinning.

3. Attempt any <u>TWO</u> of the following : **16**

a) (i) List down the factors which govern sampling methods.

(ii) Describe the cut squaring method for sampling cotton fibres.

b) Describe the determination of effective length by comb sorter method. Explain in detail the method of sorting and preparing fibre array.

c) Explain with the help of diagram how effective length is determined by using fibre array diagram.

Marks

4. Attempt any <u>TWO</u> of the following : **16**

a) (i) Describe the method of fibre length measurement by oil plate method.

(ii) 'A finer fibre can be spun to finer counts than coarse fibre' – Give reason.

b) (i) State the units used for expressing fibre fineness in UK and USA.

(ii) Explain the Gravimetric method for determination of fibre fineness.

c) Describe the determination of fibre fineness by Air-flow method.

5. Attempt any <u>TWO</u> of the following : **16**

a) State the reason for immature or half mature cotton fibres. What 'trouble they cause in processing ?

b) Describe the method of measurement of maturity ratio of cotton fibre by caustic soda.

c) Describe the concept of specific surface area of fibre and its importance in fibre fineness measurement.

6. Attempt any <u>TWO</u> of the following : **16**

a) (i) Describe the concept of 'degree of cell wall thickening'.

(ii) Elaborate the method of differential dyeing to check maturity of fibre.

b) Describe the method of determination of trash content in cotton by using shirley trash analyser.

c) Describe the American system of cotton grading.

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