22361

12425

3 Hours / 70 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) Use of Non-programmable Electronic Pocket Calculator is permissible.

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

(8) Use of steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. Attempt any FIVE : **10**

(a) Enlist any four desirable properties of textile fibres.

(b) Draw the chemical structure of repeat unit in cotton.

(c) Label the cross-section of cotton fibre.

(d) Enlist any two bast fibres and give its commercial significance.

(e) Recite in brief, the cultivation of flax fibres.

(f) Draw the morphological structure of sisal fibre.

(g) Discuss in brief on the lignin content in banana fibres.

2. Attempt any THREE : **12**

(a) Explain the essential properties of textile fibres.

(b) Describe with a neat labelled diagram, the method adopted to determine the maturity of cotton fibre.

(c) Elaborate on the cultivation of jute fibre & also draw the morphological structure.

(d) Discuss the different varieties of silk which are available for textile application.

3. Attempt any THREE : **12**

(a) Analyze the effect of degree of polymerization and moisture content on strength in case of cotton fibre.

(b) Sketch a neat labelled morphological structure of cotton fibre and draw the cross-section and longitudinal section of the same.

(c) Elaborate on the chemical composition of banana fibre & comment on the significance of each component.

(d) Describe the different methods of cleaning fibres.

4. Attempt any THREE : **12**

(a) Classify the fibres based on origin with one suitable example of each.

(b) Differentiate between staple and filament yarns (any four points).

(c) Elaborate the chemistry of cotton fibre and mention its chemical composition.

(d) Describe with a neat sketch, the use of air flow principle instrument to determine the wool fibre fineness.

(e) Enlist and justify the selection of chemicals to suit the morphological & chemical structure for processing of mulberry silk fibre.

5. Attempt any TWO : **12**

(a) Differentiate between crystalline, amorphous and mesomorphous region in textile fibres.

(b) Describe the method of determining the formation of oxycellulose and hydrocellulose formation in cotton fibre fabric during the processing of cotton.

(c) Outline with neat sketch, the method to determine the chemical composition of cellulose in flax fibre.

6. Attempt any TWO : **12**

(a) Demonstrate with justification, the chemical used along with their concentration for the processing of sisal fibre.

(b) Set-up the chemicals to be used for processing of tussar silk so as to suit the morphological and chemical structure of fibre.

(c) Justify the statement "wool is elastic fibre". Also, illustrate the effect of salt linkages on dying behaviour of wool fibre.
