

312335

24225

3 Hours / 70 Marks

Seat No.

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- 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 of the following :** **10**
 - a) Enlist the essential properties of textile fibres.
 - b) Define the term “Degree of Polymerisation”.
 - c) Enlist any four physical properties of cotton.
 - d) Draw the structure of repeating unit in cotton polymer.
 - e) Enlist any four end uses of jute fibres.
 - f) Draw a neat labelled morphological structure of sisal fibre.
 - g) State the chemical composition of wool fibre.
 - h) Enlist the different varieties of silk used for textile applications.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) Elaborate the classification of fibres based on origin with one example each.
 - b) Describe a method to determine the maturity of given Indian cotton.
 - c) Describe the morphology of flax fibres and enlist the methods of cultivation.
 - d) Elaborate on the selection of chemicals to suit the bonds during processing of worsted wool fibres.
- 3. Attempt any THREE of the following :** **12**
- a) Describe with neat sketches, the scouring process of wool fibres used for suitings.
 - b) Differentiate between banana fibres and sisal fibres. (Any four points.)
 - c) Elaborate the retting and extraction process employed for jute fibres.
 - d) Justify the importance of moisture regain on the performance properties of fibres with two suitable example.
- 4. Attempt any THREE of the following :** **12**
- a) Outline the different forms of textiles with one application of each type.
 - b) Differentiate between moisture content and moisture regain with two suitable example (Four points).
 - c) Elaborate the different types of cotton based in its staple length.
 - d) Illustrate the chemical composition of cotton and comment on its chemistry.
 - e) Illustrate the morphological structure of silk and outline the chemical composition.

- 5. Attempt any TWO of the following :** **12**
- a) Analyse the characteristic features of crystalline, mesomorphous and amorphous regions in cotton fibre and highlight one important of each.
 - b) Propose a chemical method for detection of oxy-cellulose and hydro-cellulose formation in cotton during wet processing.
 - c) Relate any three domestic application of flax fibres and three industrial applications of jute fibres with justification.
- 6. Attempt any TWO of the following :** **12**
- a) Choose relevant chemicals and their concentrations used in the processing of banana fibres with justification.
 - b) Outline the grease plate method to determine the wool fibre length and airflow principle method to determine the fibre fineness of wool fibres.
 - c) Describe with sketches; method of detecting :
 - i) Fibre damage
 - ii) Fibre fineness by cut weight method of silk fibres.
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