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21222

3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

- 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.

Marks

1. Attempt any FIVE :

10

- (a) Elaborate the concept of degree of polymerization with an example.
- (b) Define the terms LOY and POY.
- (c) Draw morphological structure of Flax Fibre.
- (d) List down end uses of Tencel.
- (e) State any two physical properties of Polypropylene.
- (f) Explain the concept of false twist with the help of diagram.
- (g) Elaborate the terms → linear polymer, crosslinked polymer.
- (h) Write the chemical reaction for manufacturing polyacrylonitrile polymer.

- 2. Attempt any THREE :** **12**
- (a) Draw morphological structure of cotton fibre and explain the parts.
 - (b) List down various essential and desirable properties a fiber should possess to be suitable for any textile application. Also state the significance of these properties.
 - (c) Explain the working of melt spinning equipment with the help of a schematic diagram.
 - (d) State various important physical and chemical properties of cotton fibre.
- 3. Attempt any THREE :** **12**
- (a) Explain dry spinning process with the help of an example.
 - (b) Explain physical and chemical properties of jute fibre.
 - (c) Elaborate essential requirements of wet spinning technique.
 - (d) Explain physical properties of Viscose Rayon.
 - (e) Explain addition and condensation polymerization process with the help of examples.
- 4. Attempt any THREE :** **12**
- (a) Describe the fibrillation in tencel fibre.
 - (b) Explain physical, chemical properties of polyester. State end uses of the same.
 - (c) State advantages of textured yarn.
 - (d) Explain passage of yarn through air-texturising machine with neat sketch.
 - (e) Explain the manufacturing of Viscose Rayon with the help of a flow-chart.

5. Attempt any TWO : 12

- (a) Draw morphological structure of wool fibre. State physical and chemical properties of the same.
- (b) Explain wet spinning process with the help of a neat labelled diagram.
- (c) Describe working of simultaneous draw texturing (Friction disc type) with the help of a neat diagram.

6. Attempt any TWO : 12

- (a) Suggest manufacturing of polyester fibre with the help of a flow-chart and chemical reactions involved in it.
 - (b) Explain manufacturing of Nylon 6, 6 with the help of a flow-chart. Give chemical reaction for the same. State end uses of Nylon 6, 6.
 - (c) Give a detailed account for various factors which influence quality of textured yarns.
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