

17341

**11920**

**3 Hours / 100 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE :**

**20**

- (a) Explain the theory of Solidification of polymer in melt spinning technique.
- (b) State the physical properties of Nylon 6,6 fibres.
- (c) Differentiate between Acrylic and Modacrylic fibres. (four points)
- (d) Enlist the uses of Industrial fibres.
- (e) State the physical properties Lycra fibres.
- (f) Write any two physical properties of polyethylene and polypropylene fibres each.
- (g) State two physical and two chemical properties of modacrylic fibres.

- 2. Attempt any TWO :** **16**
- (a) Explain the concept of melt spinning with suitable sketch and write the features and essential requirements of melt spinning.
  - (b) With process flow chart, describe the manufacturing process for polyester fibre.
  - (c) Explain the physical and chemical properties of Nylon 6 fibres. Also, write any four applications.
- 3. Attempt any TWO :** **16**
- (a) Describe the LOY and MOY yarns with their features and importance.
  - (b) State the physical and chemical properties of polyester fibre.
  - (c) With the process flow chart, describe the manufacturing process for Acrylic fibres.
- 4. Attempt any TWO :** **16**
- (a) Explain the manufacturing method for Hydrophilic polyester fibre and CDPET. Write the names of raw materials used in each case.
  - (b) Describe the manufacturing process for Nylon 6,6 with raw materials and chemical synthesis.
  - (c) Explain the physical and chemical properties of Acrylic fibres.
- 5. Attempt any TWO :** **16**
- (a) Explain the concept of High speed spinning and Direct melt spinning.
  - (b) Describe the different manufacturing process for polyester micro fibres. Write applications also.
  - (c) What is carbon fibre ? Explain the physical and chemical properties of carbon fibre.

**6. Attempt any TWO :****16**

- (a) Describe the formation of fibre structure during spinning process and total sequence of polymer flow in melt spinning.
  - (b) Describe the manufacturing process of antistatic & flame retardant Nylon fibre with raw material used.
  - (c) Explain the manufacturing process for Glass fibre. Write its properties and uses.
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