

17341

16172

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

Marks

1. **Attempt any FIVE :**

20

- (a) What is the objective of spinning ? What are different methods used for spinning ?
- (b) State the advantages and limitations of synthetic fibres.
- (c) Write the comparison between Nylon 6 and Nylon 66 fibres.
- (d) State the applications of glass fibres and carbon fibres.
- (e) Write the comparison between Acrylic fibre and modacrylic fibre.
- (f) Write two chemical properties and two applications of modacrylic fibre.
- (g) Explain the method for evaluation of composition from polyester/cotton blend.

- 2. Attempt any TWO :** **16**
- (a) Explain the concept of melt spinning along with general features and essential requirements.
 - (b) Explain the physical and chemical properties of polyester fibre.
 - (c) Describe the manufacturing process for Acrylic Fibres with chemical reactions involved in it.
- 3. Attempt any TWO :** **16**
- (a) Describe the theory of solidification of polymer in melt spinning and formation of fibre structure during spinning process.
 - (b) Describe in detail the manufacturing process for polyester fibres with chemical reactions involved in it.
 - (c) Explain the concept of modified Nylon fibres :
 - (i) Hydrophilic fibres
 - (ii) Antistatic fibres
- 4. Attempt any TWO :** **16**
- (a) Explain in detail the concept of :
 - (i) COY yarns
 - (ii) POY yarns
 - (iii) HOY yarns
 - (iv) FOY yarns
 - (b) Describe the manufacturing process and properties of polyester micro-fibre.
 - (c) Describe the manufacturing process for polypropylene fibres with chemical reactions involved in it.

5. Attempt any TWO :**16**

- (a) Describe the concepts of :
 - (i) High speed spinning
 - (ii) Direct melt spinning with their advantages and limitations.
- (b) Explain the physical and chemical properties of Nylon 6 fibre. Write any four applications of Nylon 6 fibre.
- (c) Explain the physical and chemical properties of lycra fibres. Write any four applications of it.

6. Attempt any TWO :**16**

- (a) Describe in detail the manufacturing process for Nylon 66 fibre with chemical reactions involved in it.
 - (b) Explain the physical and chemical properties of Acrylic and Modacrylic fibres.
 - (c) Describe in detail the manufacturing process for polyethylene fibres with chemical reactions involved in it.
-

