

17341

21819

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE :

20

- (a) Explain the concept of spinning process and its importance.
- (b) Describe flame retardant polyester. How it is obtained ?
- (c) Differentiate between Nylon 6 and Nylon 6, 6 fibres.
- (d) Explain the properties of glass fibres.
- (e) Explain any two physical properties and applications of polyethylene fibres.
- (f) What is polypropylene fibre ? How it is obtained ?
- (g) Differentiate between Natural fibres and Synthetic fibres.

2. Attempt any TWO :

16

- (a) Explain the concept of melt spinning with general features and essential requirements of melt spinning.
- (b) Describe the construction and working functions of (i) manifold, (ii) spin pack and (iii) quenching zone.
- (c) Explain the manufacturing process for polyester fibres with specific stages.

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- 3. Attempt any TWO :** **16**
- (a) (i) Explain the solidification process in melt spinning.
 - (a) (ii) Explain the formation of fibre structure during spinning process.
 - (b) Explain the physical and chemical properties of polyester fibres.
 - (c) What is CDPET ? Which modifications are done during polymerisation of CDPET ? Enlist the additives added for manufacturing CDPET.
- 4. Attempt any TWO :** **16**
- (a) Explain the terms :
 - (i) LOY
 - (ii) MOY
 - (iii) POY
 - (iv) HOY
 - (b) Explain the physical and chemical properties of Nylon 6.
 - (c) Explain the concept of Hydrophilic acrylic fibres and Modacrylic fibres. State their end uses.
- 5. Attempt any TWO :** **16**
- (a) Describe the manufacturing process for Nylon 6, 6 with chemical reactions.
 - (b) Explain the physical and chemical properties of Acrylic fibres.
 - (c) What is Carbon Fibre ? How it is obtained ? Write its properties.
- 6. Attempt any TWO :** **16**
- (a) Explain the modified Nylon fibres as
 - (i) Hydrophilic
 - (ii) Antistatic
 - (iii) Low pilling and flame retardant
 - (b) Explain the manufacturing process for acrylic fibres with chemical reactions involved in it.
 - (c) What is lycra fibre ? Explain its physical and chemical properties. Write its uses also.
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