



17341

15162

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) *Assume suitable data, if **necessary**.*
 - (6) *Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.*

Marks

1. Answer any five :

(5×4=20)

- a) State the principles of spinning process. Enlist the methods of spinning.
- b) Explain the concept of high speed spinning process.
- c) What are polyester hollow fibres ? Where are they used ?
- d) Name raw-materials used in the manufacture of nylon 6. Explain principle involved in the process.
- e) State the properties and uses of Lycra fibres.
- f) Enlist the industrial fibres. Write their various applications.
- g) Write characteristics and uses of hydrophylic polyester fibres.

2. Answer any two :

(2×8=16)

- a)
 - i) With a labelled diagram, explain the concept of melt spinning .
 - ii) State general features and essential requirements of melt spinning.
- b) Explain in general, physical and chemical properties of polyester fibres.
- c)
 - i) Describe the manufacturing process for polyethylene fibres.
 - ii) Why is polyethylene, chemically inert ?

6

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3. Answer any two :

(2×8=16)

- a) Describe any two melt spinning equipments. Write their working :
 - i) Melting device.
 - ii) Static device.
 - iii) Quenching zone.

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**Marks**

- b) With production process chart, describe the manufacturing process for nylon 6,6 fibre. 6
- c) i) Explain the physical and chemical properties modacrylic fibres. 6
ii) Write uses of modacrylic fibres. 2

4. Answer any two : **(2×8=16)**

- a) Explain the concept of :
i) LOY yarns
ii) HOY yarns.
- b) Explain the physical and chemical properties of nylon 6 fibres.
- c) Explain the properties and applications of
i) Glass fibres ii) Carbon fibres.

5. Answer any two : **(2×8=16)**

- a) i) With the help of flow sheet, describe manufacturing process of polyester fibre. 6
ii) Write chemical reaction (s) involved in it. 2
- b) i) State the various applications of Nylon 66 fibres.
ii) Explain the concept of antistatic nylon.
- c) i) Write the physical and chemical properties of acrylic fibres.
ii) What are bicomponent fibres ? Where are they used ?

6. Answer any two : **(2×8=16)**

- a) i) Explain the properties of polyester micro fibres. 6
ii) Write the various applications of polyester micro fibres. 2
- b) i) Why are acrylic monomers supplied in inhibited form ? Name types of inhibitors used and level of inhibition. 2
ii) Describe the manufacturing process for acrylic fibres. Write the chemical reactions involved in it. 6
- c) Explain the physical and chemical properties of polypropylene fibres.
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