17341

16117

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****.*

Marks

1. Answer **any five** : **(5×4=20)**

a) Classify polyesters as addition-/condensation polymers. How is the forward reaction favoured ? Are they thermoplastic or thermoset ?

b) Explain general principles of the spinning process.

c) Explain meaning of

i) Low filling nylon

ii) Differentially dyable nylon

d) What are modacrylics ? Name raw materials for synthesis of acrylic and modacrylics.

e) What are industrial fibres ? List the uses of industrial fibres.

f) Give general features and essential requirements of melt spinning.

g) State and explain the end uses of Lycra fibres.

2. Answer **any two** : **(2×8=16)**

a) Explain in general physical and chemical properties of polyester.

b) Explain theory of solidification of polymers in melt spinning technique.

c) With a flow chart explain the process of manufacturing of nylon 66.

3. Answer **any two** : **(2×8=16)**

a) State and explain physical and chemical properties of acrylic fibres.

b) Describe manufacturing process of carbon fibres.

c) i) What are micro fibres ? **2**

ii) Properties and applications of polyester microfibres. **6**

P.T.O.

Marks

4. Answer **any two** : **(2×8=16)**

a) Explain the concept of LOY, MOY, POY and HOY.

b) Describe with a neat sketch, manufacturing process of hydrophylic polyester fibre.

c) i) Enlist the physical and chemical properties of nylon 6. **6**

ii) State uses of nylon 6. **2**

5. Answer **any two** : **(2×8=16)**

a) Explain the concept of :

i) antistatic polyamide fibre and

ii) flame retardant polyamide fibres.

b) Describe manufacturing process of flame retardant acrylic fibres.

c) i) Describe manufacturing of glass fibre with neat sketch. **6**

ii) State its industrial applications. **2**

6. Answer **any two** : **(2×8=16)**

a) i) Compare properties of polyethylene and polypropylene fibres.

ii) Distinguish between acrylic and modacrylic fibres.

b) i) Write the concept of melt spinning. **2**

ii) Explain the sequence of polymer flow in melt spinning. **6**

c) Explain the following:

i) Concept of high speed spinning

ii) CDPET fibres.
