312317

12425

03 Hours / 70 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) Classify the textile fibres based on their origin.

b) Define the terms :

i) Polymerization

ii) Degree of Polymerization

c) Draw a morphological diagram of the cotton fibre and label the following components :

i) Cuticle

ii) Lumen

iii) Fibrils

iv) Primary cell wall

d) Enlist any four applications of Jute Fibre.

e) Explain the sericulture of silk with a neat sketch.

f) State any two advantages and disadvantages of synthetic fibres.

g) Explain in brief, concept of regenerated fibres.

P.T.O.

Marks

2. Attempt any THREE of the following : **12**

a) State and explain the characteristics of fibre forming polymer.

b) Describe the physical and chemical properties of wool fibre.

c) State and explain the applications of silk fibre in Indian culture.

d) Describe stepwise manufacturing process of viscose rayon with a flow diagram.

3. Attempt any THREE of the following : **12**

a) Describe with neat sketch the melt spinning process in detail.

b) Differentiate between types of yarns based on –

i) Fibre orientation and

ii) Draw ratio.

c) Define and explain addition and condensation polymerizations with examples.

d) State and explain physical and chemical properties of cotton fibre.

4. Attempt any THREE of the following : **12**

a) Considering the following points, Elaborate the manufacturing process of Jute Fibre :

i) Cultivation

ii) harvesting

iii) retting and extraction

b) Elaborate the concept of thermoplastic and thermoset fibres.

c) Describe with neat sketch “dry spinning” fibre manufacturing process in detail.

d) Explain the effect of :

i) Moisture

ii) Acid

iii) Alkali and

iv) Oxidising agent

v) bleaching agent on Viscose rayon

e) Illustrate the manufacturing process of Nylon 6 with chemical reaction.

Marks

5. Attempt any TWO of the following : **12**

a) Illustrate with neat sketch, morphological structure and cross section of wool fibre.

b) Describe the stepwise manufacturing method of Tencel Fiber with Flow diagram.

c) Describe with neat sketch the manufacturing process of polyester by DMT route.

6. Attempt any TWO of the following : **12**

a) Explain :

i) Physical properties of Nylon 6

ii) Longitudinal section and cross section of viscose rayon.

b) Describe manufacturing process of polypropylene fibre considering :

i) Monomer

ii) Polymerization and

iii) Melt spinning.

c) State and explain the properties of –

i) Polyester and

ii) Polyethylene Fibres in respect to : Tenacity, moisture content, Effect of acids and alkalies.

———