

# 22361

**11920**

**3 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) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) 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) Define ‘degree of polymerisation’.
  - b) State importance of fibre length.
  - c) Draw chemical structure of cellulose.
  - d) Classify cotton into different varieties depending on its staple length.
  - e) Give chemical composition of Jute fibre.
  - f) State two physical properties of flax fibre.
  - g) Name any four amino acids present in wool fibres.
  - h) List the steps in ‘Sericulture of silk’.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Give detailed classification of natural fibres specifying their chemical nature and origin.
  - b) Explain cultivation of cotton in India.
  - c) Explain in detail rething and extraction of jute fibre.
  - d) Draw morphological structure of wool fibre and name the parts.
  - e) Explain the process of sericulture for production of silk.
- 3. Attempt any THREE of the following: 12**
- a) List down various essential and desirable properties a fibrous material must possess to be useful for any textile application. Give significance / importance of each property.
  - b) Describe method to determine maturity of cotton fibre.
  - c) Explain the method of extraction of Sisal fibre from its leaf.
  - d) Describe various chemical properties of wool. Comment on various chemicals and their concentrations to be used for wet processing of woollen fabric.
  - e) Draw morphological structure of silk and comment on reason for lustrous appearance of silk filaments and fabrics.
- 4. Attempt any THREE of the following: 12**
- a) Compare between amorphous region and crystalline region in fibres.
  - b) Describe method of detecting cotton fibre damage of a given cotton fibre sample.
  - c) Describe method to ascertain chemical composition of banana fibre.
  - d) Describe a method to determine silk fibre sample fineness.

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

- a) 'Lumen occupies negligible space in fully grown cotton fibre' Justify the statement based on morphology of cotton.
- b) "Mesomorphous reason is responsible for strength and chemical reaction". Justify the statement.
- c) Illustrate the importance of salt links while dyeing protein fibres.

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

- a) Describe methods used to ascertain moisture content and moisture regain of textile fibres.
  - b) Describe various physical and chemical properties of flax fibre. Suggest various chemicals and dyes to be used for wet processing flax fabric.
  - c) Describe various physical and chemical properties of Banana fibres. Suggest the chemicals and their concentration to be used for processing Banana fibre fabric. Give various end uses of Banana and Sisal fibres.
-