

313343

12425

03 Hours / 70 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 answer 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) Define the terms:
 - i) Monomer
 - ii) Degree of Polymerisation.
 - b) List the name of spinning methods used for manufacturing synthetic fibres.
 - c) Draw the process flow chart for Viscose Rayon manufacturing process.
 - d) Write any one method for synthesis of ethylene glycol.
 - e) Write the chemical formula of:
 - i) Adipic Acid
 - ii) Hexamethylene diamide

P.T.O.

- f) List the name of raw materials used for manufacturing acrylic fibre.
- g) State two physical properties of carbon fibre.

2. Attempt any THREE of the following: 12

- a) Describe in brief classification of textile fibres with suitable examples.
- b) Describe solidification of polymer in wet spinning process.
- c) Explain the process of acetylation with a schematic chemical reaction.
- d) Explain the steps involved in Polymerisation of polyester.

3. Attempt any THREE of the following: 12

- a) Describe the terms:
 - i) MOY
 - ii) POY
 - iii) HOY
 - iv) LOY
 - v) LOY in high speed spinning systems.
- b) Explain manufacturing process of Lyocell fibre.
- c) Describe any one method for caprolactam in Nylon 6 manufacturing process.
- d) Explain importance of modified polyester with reference to:
 - i) Hollow fibre
 - ii) Cationic dyeable.

4. Attempt any THREE of the following: 12

- a) Describe the steps involved in manufacturing of Nylon 6.6 fibre.
- b) Explain the advantages of flame retardant Nylon.
- c) Differentiate between Acrylic and Modacrylic fibres on the basis of polymer content.

- d) Describe Polymerisation process used for getting fibre grade acrylic polymer.
- e) Describe the properties of Lycra making it elastomeric fibre.

5. Attempt any TWO of the following: 12

- a) Explain the solidification of polymer in dry spinning also draw neat labelled sketch of dry spinning process.
- b) 'DMT process of polyester is preferred over TPA' process. Justify the statement. State advantages and limitations of both the process.
- c) 'Acrylic fibre cannot be melt spun'. Justify the statement.

6. Attempt any TWO of the following: 12

- a) Describe manufacturing process of 'Viscose Rayon', stating functions of chemical used in each step.
 - b) Describe the modifications done in spinnerets for manufacturing polyester micro fibers.
 - c) Differentiate between LDPE and HDPE fibre on the basis of:
 - i) Polymerisation parameters
 - ii) Physical properties of the fibre.
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