

**Total No. of Pages : 02**

**B.Tech. (Textile) (2011 Onwards) (Sem.-4)**

**Subject Code : BTTE-402**

**Paper ID : [A2751]**

**Max. Marks : 60**

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

**1. Answer briefly :**

- a. What are the disadvantages of manmade fibres over natural fibres?
- b. What are the different approaches to overcome the inferior tactile properties of manmade fibres?
- c. What are LOY, POY and FDY?
- d. What is the role of static mixers in fibre production?
- e. Why drying of chips are important before extrusion of polyester fibre?
- f. What is the significance of back washing of N66 chips?
- g. Draw the cross sectional shapes of fibres spun by melt spinning, solution dry spinning and solution wet spinning. What are profiled fibres?
- h. Why high temperature thin film evaporator is used for continuous polymerization of N6?
- i. How orientation and crystallinity influences the properties of fibre?
- j. Why acrylic fibres exhibit a paracrystalline structure?

**SECTION-B**

2. What are the advantages of two step polymerization of PET? Discuss the transesterification process.
3. Discuss the dope structure of aramids.
4. What are the advantages of radial quenching over cross flow quenching? Justify the expected differences in properties of fibres spun using radial and cross flow quenching system.
5. What are the different methods of application of spin finish and what are their relative merits and demerits?
6. Why surface treatment of carbon fibres is necessary and what are the different approaches for surface treatments?

**SECTION C**

7. Why carbon fibre exhibit superior property? Describe the process of carbon fibre production starting from PAN.
8. Describe the technology of polymerization of polyester. Describe the spinning, drawing and heat-setting of polyester staple fibre.
9. Write short notes on :
  - a) Spin finish
  - b) Glass fibre