

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013****Subject code: 1722504****Date: 03-06-2013****Subject Name: Modern Fiber Technology****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Discuss critically differences amongst various variants of wet spinning. **07**
(b) Describe with diagram wet spinning of acrylic fibre and discuss the factors that affect the spinnability and quality of wet spinning. **07**

- Q.2** (a) Describe continuous aqueous suspension polymerization process of acrylic fibre with neat diagram. Discuss also factors influencing properties of acrylic polymer. **07**
(b) Write a brief note on gel spinning of acrylic fibre and mention quality parameters. **07**

OR

- (b) Discuss innovations made in melt spinning of Acrylic fibres. **07**

- Q.3** (a) Discuss advantages of using TPA over DMT in PET fibre production. **07**
(b) Discuss factors contributing formation of DEG in PET. Discuss also effects of DEG on polymer and fibre properties. Suggest also methods of controlling DEG formation. **07**

OR

- Q.3** (a) Discuss effects of various parameters in caprolactum polymer catalysed by water. **07**
(b) Discuss high speed spinning of polyester and its effects on fibre properties with graph and technical details. **07**

- Q.4** (a) Write a note on NMMO process of Lyocell fibre formation. **07**
(b) List the advantages of Lyocell fibres and its uses in apparel as well as technical textiles with reasons. **07**

OR

- (a) What are high bulk acrylic yarns? How are they produced? Discuss in detail. **07**
(b) Write a note on alternative routes for manufacturing cellulosic fibres. **07**

- Q.5** (a) Discuss in detail the functions of spin finish, types of spin finish. With regards to "Save Earth" discuss all the essential precaution which are mandatory for all organizations. **07**
(b) Discuss physical properties of cellulose acetate fibres with all the technical details and graphs. **07**

OR

- Q.5** (a) List important rheological aspects of solution spinning and discuss in detail spinning stretch and polymer concentration. **07**
(b) Write a brief note on technical application of acrylic fibres. **07**
