

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1722504****Date: 20-06-2014****Subject Name: Modern Fiber Technology****Time: 02:30 pm - 05:00 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 merits of polypropylene fibre. Also write on problems with the same. **07**

(b) Discuss critically differences amongst various variants of wet spinning of acrylic. **07**

Q.2 (a) Compare wet spinning with dry spinning of acrylic fibre in detail. **07**

(b) Describe in detail all stages of preparations of cellulose acetate. **07**

OR

(b) Describe continuous aqueous suspension polymerization process of acrylic fibre with neat diagram. Discuss also factors influencing properties of acrylic polymer. **07**

Q.3 (a) Mention advantages of Tencel fibre and list its uses in apparel as well as technical textiles with reasons. **07**

(b) Discuss advantages of using TPA over DMT in PET fibre production. **07**

OR

Q.3 (a) Write complete note on NMMO process of man made cellulosic fibre formation. **07**

(b) List important rheological aspects of solution spinning and discuss in detail spinning stretch and polymer concentration. **07**

Q.4 (a) Write brief notes on various methods of spin finish applications of manmade fibre. **07**

(b) What are high bulk acrylic yarns? How are they produced? Discuss in detail. **07**

OR

Q.4 (a) Discuss high speed spinning of polyester and its effects on fibre properties with graph and technical details. **07**

(b) Write a note on alternative routes for manufacturing cellulosic fibres. **07**

Q.5 (a) 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**

(b) Define draw ratio, neck formation and neck propagation with reference to drawing and heat setting of manmade fibres. Describe also morphological changes in fibre structure during drawing. **07**

OR

Q.5 (a) Draw neat sketch and describe VK type method of nylon 6. **07**

(b) Discuss effects of various parameters in caprolactum polymer catalysed by water. **07**
