

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER 2013****Subject Code: 142802****Date: 12-06-2013****Subject Name: Fiber Physics****Time: 10:30am – 01:00pm****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) Explain Hydrogen bonding. **07**
(b) Write a note on Glass transition temperature. **07**
- Q.2** (a) What is spectroscopy? Explain NMR spectroscopy. **07**
(b) Explain Shish kebab structure in detail with sketch. **07**
- OR**
- (b) Discuss about Thermal properties of HM-MT fibres **07**
- Q.3** Describe in detail the scanning electron microscope with neat diagram. **14**
- OR**
- Q.3** (a) Explain Flexural rigidity. **07**
(b) Discuss the factors determining the results of Tensile experiments. **07**
- Q.4** (a) Explain Creep, primary and secondary creep. Discuss Lenderman's experiments on primary creep. **07**
(b) Define and discuss Elastic recovery. Also discuss Mechanical conditioning and swelling recovery. **07**
- OR**
- Q.4** Explain initial modulus, work factor & yield point in detail. **14**
- Q.5** (a) Explain the relationship between moisture regain and relative humidity of different fibres. **07**
(b) Discuss effect of orientation on mechanical properties. **07**
- OR**
- Q.5** (a) Discuss in detail Fringed micelle structure with neat sketch. **07**
(b) Discuss the effect of moisture, temperature and frequency on dielectric properties of fibres. **07**
