

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 162903**Date: 25/11/2011****Subject Name: Physical Testing****Time: 10.30 am -1.00 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) With the help of Baer Sorter graph explain modal length, dispersion and short fibres. What is the importance of the value of dispersion? **07**
(b) Explain in short the HATRA crimp rigidity test method. **07**

- Q.2** (a) With a neat sketch explain fabric Drapemeter. **07**
(b) What is the concept of Inclined Plane Principle for tensile strength testing of textile materials? Why the results show wavy load elongation curve? **07**

OR

- (b) With sketch explain the working of hydraulic bursting strength tester. **07**

- Q.3** (a) Explain cantilever principle based stiffness tester. How bending length, flexural rigidity and bending modulus are calculated from the result? **09**
(b) Explain concept of span length. With the help of the fibrograph explain 50% SL, 2.5% SL, ML, UHML. **05**

OR

- Q.3** (a) With a sketch explain the working principle of Untwist- Retwist type twist tester. **07**
(b) Explain in short the Bundesmann test for spray and drop penetration of water. **07**

- Q.4** Write in detail on any one instrument based on Pendulum lever principle for strength testing of yarn. **14**

OR

- Q.4** Explain the balance principle for strength testing. Also write in short on an instrument for testing the bundle strength of fibres based on the balance principle. **14**

- Q.5** (a) Write in short on following terms: **06**
(i) Short, medium and long term irregularities
(ii) Index of irregularity
(iii) Limit irregularity
(b) With a neat sketch explain any one instrument for testing yarn evenness based on compression method. **08**

OR

- Q.5** (a) What is called V-L curve? Write in short on the same. **08**
(b) What is meant by addition of irregularity and effect of doubling? **06**
Calculate drawn sliver CV% on a draw frame from following data.
Undrawn Sliver CV%: 2.3, Draw Frame CV% : 3.9
