

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER 2013****Subject Code: 162903****Date: 02-12-2013****Subject Name: Physical Testing****Time: 02:30 pm to 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 Elaborately discuss V-L curve, span length, and weak link effect of textile specimen. **14**

Q.2 (a) What is gauge length at the time of textile testing? How gauge length affect in tensile strength testing? Is it possible to test specimen under CRL and CRE on Cambridge extensometer? **07**

(b) Give definition of air permeability, air porosity, tenacity and relative humidity. **07**

OR

(b) What is addition irregularity and effect of doubling? How it affect coefficient of variation of product? **07**

Calculate drawn sliver C.V. % if undrawn sliver C.V. is 2% and draw frame C.V. is 3.5%.

Q.3 (a) How fibre maturity tested using caustic soda solution? Show the relationship between immaturity count and fibre weight. **07**

(b) Write a note on The spray test. **07**

OR

Q.3 (a) How trash content present in cotton fibre measured by Shirley analyzer. **07**

(b) Explain cantilever principle used to measure fabric stiffness. **07**
Also mention how bending modulus is calculated from the result.

Q.4 (a) With neat sketch explain the CRT and CRS principle to measure strength of the product. **07**

(b) With neat sketch explain the principle of untwist – retwist type twist tester. **07**

OR

Q.4 (a) Provide different sizes for various fibre and yarn parameter test. **07**

Q.4 (b) Write a note on electronic twist tester. **07**

Q.5 (a) Explain the terms: drape, Count strength product, fabric assistance **07**

(b) Define crimp. Also explain HATRA crimp rigidity test. **07**

OR

Q.5 (a) Why hairiness testing is more important in cotton yarn? **07**
Also define zweigle hairiness index. Which parameters measured by Sh and Hs?

(b) What is fibre fineness? How one can grade the fibre based on fineness parameter. Explain the air flow principle used to measure fibre fineness. **07**
