

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V(New) • EXAMINATION – WINTER 2016****Subject Code:2152906****Date:22/11/2016****Subject Name:Physical Testing-I****Time:10:30 AM to 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 Short Questions 14**
- 1 Enlist the type of sample used for testing textile material.
  - 2 Write the full name of HVI?
  - 3 Enlist the fiber fineness measuring methods.
  - 4 Write the standard atmosphere condition required for testing textile material for tropical and sub-tropical regions
  - 5 What is ‘Young’s Modulus’?
  - 6 Write the equation of moisture regain.
  - 7 Define the term Fiber length.
  - 8 Define the term 2.5% Span length.
  - 9 Write the definition of English count.
  - 10 What is Relative Humidity?
  - 11 1 Micronaire = \_\_\_\_\_  $\mu\text{g}/\text{inch}$ .
  - 12 What is “FQI”?
  - 13 Enlist the different methods used to measure the maturity of cotton fiber.
  - 14 What is “Yarn Count”?
- Q.2 (a) Discuss the objectives of Textile testing. 03**  
**(b) Describe the English count system 04**  
**(c) Explain the working of Shirley Moisture Meter with neat sketch. 07**
- OR**
- (c) Write short note on sampling for textile testing. 07**
- Q.3 (a) Define short, Medium and long term variation. 03**  
**(b) What is Hysteresis effect? Briefly explain with the help of graph. 04**  
**(c) Explain the working of an instrument based on the air flow principle to measure fiber fineness. 07**
- OR**
- Q.3 (a) Define term: 1. Maturity co-efficient 2. Maturity ratio 3. Maturity count. 03**  
**(b) What is Creep? Explain it briefly. 04**  
**(c) Explain measurement of fiber length by digital fibrograph. 07**
- Q.4 (a) What is the effect of yarn twist on fabric properties? 03**  
**(b) What do you meant by CRE, CRL& CRT? 04**  
**(c) Explain measurement the working Shirley Trash Analyser with neat sketch. 07**
- OR**
- Q.4 (a) Briefly explain the periodic variation. 03**  
**(b) Explain the working principle of pressley tester. 04**  
**(c) Explain the working of Uster Evenness Tester in detail. 07**
- Q.5 (a) Describe the working principle of pendulum lever. 03**  
**(b) Calculate drawn sliver C.V. %, If undrawn sliver C.V. is 2.4and draw frame sliver C.V. is 3.2%. 04**  
**(c) Explain working of lea CSP strength testing instrument with neat sketch. 07**
- OR**
- Q.5 (a) Define the terms: 1. Imperfection 2. Evenness 3. Index of irregularity 03**  
**(b) Explain the working principle of Untwist – Retwist type twist tester. 04**  
**(c) With the help of bear sorter diagram, derive various length parameters of cotton fiber. 07**

