

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER– VI EXAMINATION – SUMMER 2026

Subject Code:3162903

Date:08-06-2026

Subject Name: Physical Testing

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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain the terms: tex, denier, and cotton count. 03
(b) Discuss mathematically the effect of following on tensile strength test: 04
(i) Test specimen length (ii) rate of loading & time to break
(c) What is fibre fineness? Explain the air flow principle used to measure fibre fineness. 07
- Q.2** (a) Explain in detail the objectives of Testing. 03
(b) Define term: Moisture regain and Moisture content. also established the relationship between them. 04
(c) Explain in detail comb sorter technique for fiber length measurement. How effective length is determined? 07
- OR**
- (c) With neat sketch explain the principle of untwist – retwist type twist tester. 07
- Q.3** (a) Define the term 2.5% Span length and FQI. 03
(b) Explain the term CSP and its uses in textile testing? The 18 Tex yarn is having lea strength of 22 Kg, find the CSP value of it. 04
(c) Explain measurement of trash content by Shirley Analyser. 07
- OR**
- Q.3** (a) Explain the terms: Crimp and Drape. 03
(b) Explain about thickness tester. 04
(c) What do you mean by yarn count CV%? What are the methods of its measurement? Describe any one of them. 07
- Q.4** (a) Discuss the test procedure to measure fabric weight. 03
(b) With sketch explain various ways in which samples from fabric are to be taken for testing. 04
(c) Explain Beesley's instrument for count measurement from fabric sample. 07
- OR**
- Q.4** (a) Define Term: Tenacity, Initial Young's Modulus and work of rupture. 03
(b) Describe a method of measurement of fabric drape. 04
(c) What are the CRE, CRL and CRT principles of tensile testing of textiles? Describe any one of these instruments for measurement of tensile strength. 07
- Q.5** (a) Define air permeability. What is unit of it? 03
(b) Explain about method of measurement of stiffness of fabric. 04
(c) Explain fabric stiffness measurement by cantilever principle. 07
- OR**
- Q.5** (a) Explain yarn hairiness index. 03
(b) Describe method of measurement of tearing strength of fabric 04
(c) Write short note on HVI instrument. 07
