

M.TECH DEGREE EXAMINATIONS: APRIL 2010

Second Semester

TEXTILE TECHNOLOGY

P07TX201: Yarn Quality Analysis

Time: Three Hours

Maximum Marks: 100

Answer All Questions:-

PART A (10 x 2 = 20 Marks)

1. Classify mass variations.
2. What do you mean by index of irregularity? How will you calculate the same?
3. What is the significance of 3D V-L curve?
4. Longer the cut length minimum the variations. Justify.
5. What is the relationship between material speed, frequency and wavelength in spectrogram?
6. Draw the ideal spectrogram diagram for fault free cotton and synthetic yarns.
7. Differentiate between CRE and CRL principles of tensile testing.
8. What is the significance of measuring minimum yarn strength?
9. How does yarn strength and elongation influence the knitting performance?
10. What is the influence of yarn friction coefficient on weaving performance?

PART B (5 x 16 = 80 Marks)

11. a) Explain with suitable examples how theoretical irregularity and index of irregularity is calculated for wool and cotton yarns. Assume relevant data.

(OR)

- b) Describe U% and CV% graphically & mathematically and discuss the relationship between them with respect to the diagram distribution.

12. a) What is the significance of V-L curve? Explain how V-L curve is useful in tracing the faulty processes.

(OR)

- b) Discuss how specimen length and total length influence the mass variation.

13. a) Define short, medium and long term periodic variations. Discuss the influence of these variations in woven and knitted fabric.

(OR)

- b) Discuss the effect of draw frame coiler damage and dust in rotor groove in sliver periodic variations with the help of spectrogram.

14. a) Discuss the effect of specimen length and testing speed on tensile strength of a yarn in a single yarn strength tester.

(OR)

b) (i) Define work of rupture and discuss its significance. (8)

(ii) Explain how initial modulus calculated using F/E curve. (8)

15. a) Discuss influence of evenness, strength, elongation and hairiness on weaving performance of the yarn.

(OR)

b) Discuss how does abrasion, tension and modulus of spun yarn affect the post spinning performance.
