B. Tech.

(SEM. VI) EXAMINATION, 2006-07

TEXTILE TESTING - II

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions. All questions carry equal marks.

1. Explain the following in details.
   (i) Breaking strength and breaking length
   (ii) Yield stress and yield strain
   (iii) Impact of specimen length and rate of loading on yarn strength
   (iv) Elastic and plastic deformation of textile material.
   (v) Standard machine rate of loading

   OR

1. What is the basic difference between CRL and CRT principles? Describe with neat diagram any tensile testing instrument that works on CRT Principle.
2. Attempt any two parts of the following:
   
   (a) Describe a method of measuring the yarn lea strength. What are the limitations of pendulum lever type yarn lea tester?
   
   (b) Describe the factors affecting the tear strength of a woven fabric. Describe the Elmendorf tear test method and indicate its merits and demerits over other tear test methods.
   
   (c) Describe the factors affecting the bursting strength of a woven fabric. Describe the ball bursting strength test method and indicate its merits and demerits over other bursting strength test methods.

3. Attempt any two parts of the following:
   
   (a) Describe briefly with diagram the principle of a drape tester. Explain the advantages of Cusic drape tester over normal drape meter.
   
   (b) Describe the method of measuring the thermal transmission of fabric by guarded hotplate. Why is it important to measure air permeability and thermal transmission for apparel fabrics?
   
   (c) A system spins 65.5 tex yarn with a CV of 11.1% from 0.5 tex man-made fibre. What is the index of irregularity of the yarn? What would be the CV% of a 41.0 tex yarn, spun from same fibre and in the same system?
4. Attempt any two parts of the following:
   (a) What are the advantages of diameter irregularity results over the mass irregularity values? Describe an optical method of measuring the yarn irregularity.
   (b) What is the importance of testing water repellency of fabric? Describe with neat diagram a method of measuring the water repellency of fabric.
   (c) 11 ring bobbins are tested for lea strength, mean lea strength is 50 lb and S.D 61 lb. Calculate the 95% and 99% confidence limits for mean.

5. Attempt any two parts of the following:
   (a) Describe the different quality parameters of a fabric related with the fabric handle. Describe with neat drawing a method of measuring the bending rigidity of fabric.
   (b) What is spectrogram? Describe with suitable examples the application of spectrogram during process control in spinning.
   (c) A draw frame sliver with a CV value of 4% is presented to speed frame. The resulting roving has a CV value of 8.4%. The yarn spun from this roving has an overall CV of 14.5%. It is required to determine to what extent this irregularity was provided by the speed frame and the ring frame.