21819

3 Hours / 70 Marks   Seat No.

Instructions :   (1)   All Questions are *compulsory.*

(2)   Answer each next main Question on a new page.

(3)   Illustrate your answers with neat sketches wherever necessary.

(4)   Figures to the right indicate full marks.

(5)   Assume suitable data, if necessary.

(6)   Use of Non-programmable Electronic Pocket Calculator is permissible.

(7)   Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1.   **Attempt any FIVE of the following :**   **5 × 2 = 10**
  (a)   State the practical difficulty in measuring the yarn diameter.
  (b)   Define crimp and crimp percentage.
  (c)   Calculate the percentage weight loss of PC blend fabric of 1.6 grams become 1.25 grams after 200 cycles on abrasion tester.
  (d)   Explain the basic concept of water repellency of fabric with suitable example.
  (e)   Draw sketch of sample size for tearing strength tester.
  (f)   Define the term Tenacity.
  (g)   Define the term Air permeability.

2.   **Attempt any THREE of the following :**   **3 × 4 = 12**
  (a)   Calculate the Tex and Denier of a polyester filament yarn of 330 meter length and 3 gram weight.
  (b)   Explain the procedure to find the cover factor of fabric.
  (c)   Describe ICI pilling box tester with neat diagram.
  (d)   Suggest the remedial action to avoid fabric pilling based on - fibre selection and fabric construction.

3. **Attempt any THREE of the following :** 3 × 4 = 12
   (a) Describe single yarn strength tester with neat diagram.
   (b) Explain the procedure to find the fastness of fabric.
   (c) Calculate drape co-efficient of sateen fabric tested on drape meter having following particulars :
       Draped pattern paper weight - 3 gram
       Ammonia paper weight - 0.012 gram per sq. cm
       Sample size 10 inch diameter and supporting disk of 5 inch diameter.
   (d) Explain the procedure to measure the warp and weft crimp percentage with neat diagram.

4. **Attempt any FOUR of the following :** 4 × 3 = 12
   (a) Calculate the weight of yarn in gram, if the length of yarn is 100 yards and its count is 25^s Ne.
   (b) Explain the procedure to find out the Fabric Cover Factor.
   (c) Explain the procedure to find the colour fastness to washing of fabric.
   (d) Explain the procedure to measure the persiration fastness testing.
   (e) Describe ICI pilling tester with neat diagram.

5. **Attempt any TWO of the following :** 2 × 6 = 12
   (a) Calculate the TPI of a yarn of 40^s Ne count spunt with
       (i) 3.1 Twist multipler
       (ii) 4.5 Twist multipler
       Also suggest the stronger yarn from this two yarn.
   (b) (i) With neat sketch describe tensile tester strength.
       (ii) Explain the principle of bursting strength tester.
   (c) (i) Explain the cantilever principle of fabric stiffness test.
       (ii) Define - fabric stiffness.

6. **Attempt any TWO of the following :** 2 × 6 = 12
   (a) Suggest the measures to control the random variation in yarn based on
       (i) Raw material quality
       (ii) Machinary condition
       (iii) External causes
   (b) Calculate Bending Modulus of a fabric from the following data :
       (i) Fabric overhanging length = 3.1 cms,
       (ii) Weight of fabric = 70 mg per sq. cm
       (iii) Fabric thickness = 0.02 cm
   (c) Explain the procedure to find the Drape co-efficient of fabric with neat diagram.

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