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21718

3 Hours / 100 Marks

Seat No.

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- 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 TEN :**

**20**

- (a) Define : Tex. Write its formula.
- (b) What is Linear Density of yarn ?
- (c) Write down the merits of Direct Yarn numbering system.
- (d) What are the functions of Twist ?
- (e) Define Twist.
- (f) Define any one Twist direction in Yarn. Draw diagram.
- (g) What is 'Yarn Evenness' ? Give any two advantages of even yarn.
- (h) Define : Irregularity index. Also write its formula.
- (i) Define : (i) U% (ii) CV % in yarn.
- (j) What are the effects of hairiness on yarn and fabric ?
- (k) What is yarn hairiness ? Explain with the help of diagram.
- (l) What is CRL principle ?
- (m) What is yarn CSP ? Give its formula.
- (n) State any two advantages of Lea strength tester.

**2. Attempt any FOUR :****16**

- (a) Find out Tex and Denier count from the following data :
  - (i) Length of Yarn = 200 metres
  - (ii) Weight = 5 grams
- (b) With graph, explain the effect of twist on staple yarn strength.
- (c) How twist will measured by twist to break method ? Explain principle.
- (d) Explain any four causes and its remedies of yarn irregularity.
- (e) Explain :
  - (i) Addition of irregularity
  - (ii) Reduction in irregularity
- (f) Describe Lea preparation procedure using wrap reel.

**3. Attempt any FOUR :****16**

- (a) Define with formulae :
  - (i) Metric count
  - (ii) New English count
- (b) What is TM ? Also write its significance.
- (c) Explain periodic variation in yarn, draw graph.
- (d) State the causes and remedies for yarn hairiness.
- (e) Define resultant count. Give the formula for finding the resultant count of yarn.
- (f) Draw and explain the capacitance principle to measure yarn hairiness.

**4. Attempt any FOUR :****16**

- (a) Explain the procedure to find count of yarn from fabric.
- (b) A yarn of 4200 yard length is having 40 grams weight, then find its New English count.
- (c) Define TPI. Also draw a label diagram of Take-up twist tester.
- (d) With suitable diagram, describe twist contraction principle.
- (e) Describe unevenness measurement for Lap, Sliver and Roving.
- (f) How Yarn quality is graded in visual examination Yarn evenness test ? Explain procedure.

**5. Attempt any TWO :****16**

- (a) (i) How Yarn hairiness is measured by projection microscope ?
- (a) (ii) Explain hairiness testing by photoelectric method.
- (b) (i) Draw principle diagram of single yarn strength tester.
- (b) (ii) Also explain the procedure to find single yarn strength.
- (c) Describe working principle of instron, also give the advantages of this tester.

**6. Attempt any TWO :****16**

- (a) (i) Describe any four factors which affects on Tensile property of textile material.
  - (a) (ii) Compare CRL and CRE principle.
  - (b) (i) State the importance of stress-strain curve.
  - (b) (ii) How load-elongation curve will be converted to stress-strain curve ? Explain with graph.
  - (c) Describe procedure to find Yarn evenness by USTER. Explain about the imperfection tested by USTER.
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