

22369

**21819**

**3 Hours / 70 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 FIVE of the following :**

**10**

- (a) Define worsted count and give expression.
- (b) Define Imperfections.
- (c) Explain Crimp rigidity.
- (d) Explain Twist contraction principle.
- (e) Define yarn Hairs and Loops with sketch.
- (f) Define stress and strain.
- (g) Define Crimp contraction.

**2. Attempt any THREE of the following: 12**

- (a) Calculate Resultant yarn count of two ply yarn manufactured by doubling 40 Ne and 13 tex yarn.
- (b) Derive relation between twist and twist multiplier.  
Compare the level of twist in following two yarns :
  - (i) Yarn A – twist/inch = 21, count = 36<sup>s</sup> Ne
  - (ii) Yarn B – twist/inch = 18, count = 16<sup>s</sup> Ne.State use of Twist multiplier in spinning.
- (c) Explain any two causes of yarn unevenness.
- (d) Describe measurement of yarn hairiness with photoelectric method.

**3. Attempt any THREE of the following : 12**

- (a) Explain CRT with pendulum lever principle with suitable sketch.
- (b) Calculate dimensional stability of polyester yarn if 150 Denier of 10 metre become 8.4 metre after Hot air treatment.
- (c) Compare Tenso jet and Tenso rapid.
- (d) Explain the ASTM grades given in yarn appearance testing.

**4. Attempt any THREE of the following : 12**

- (a) Describe measurement of yarn evenness by capacitance principle with neat diagram.
- (b) Explain any four factor affecting tensile strength of yarn.
- (c) Explain Index of irregularity and addition of irregularity.
- (d) Explain Strain gauge principle of tensile strength measurement.
- (e) Prove that English count = 5315 / Denier.

**5. Attempt any TWO of the following :****12**

- (a) Describe the procedure for measurement of Tex count of polyester yarn if yarn in package form.
- (b) Describe measurement of twist in Double yarn by Twist to break method with neat labelled diagram.
- (c) Suggest the more even yarn from the following three yarn :

Yarn A – Standard Deviation = 12.4, Mean Count = 39.6 Ne

Yarn B - Standard Deviation = 15.6, Mean Count = 39.8 Ne

Yarn C - Standard Deviation = 10.2, Mean Count = 38 Ne

**6. Attempt any TWO of the following :****12**

- (a) Describe procedure for measurement of CSP of cotton yarn with neat labelled diagram.
- (b) Explain causes and effects of yarn Hairiness.
- (c) Suggest the strongest yarn from the following having 220 gmf breaking strength :

Yarn A = 60 Ne

Yarn B = 28 Tex

Yarn C = 80 Denier

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