

**Scheme – I**

**Sample Question Paper**

**Programme Name : Diploma in Textile Manufacture**

**Programme Code : TX**

**Semester : Third**

**Course Title : Yarn Testing**

**Max. Marks : 70**

22369

**Time : 3 Hrs.**

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**Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

**Q.1 Attempt any FIVE of the following.**

**10 Marks**

- a) Define the term Cotton count and give its expression.
- b) List any four instruments used for measurement of yarn twist.
- c) State any two effect of yarn irregularity on yarn property.
- d) State any two effect of yarn hairiness on fabric property.
- e) Define the term breaking length.
- f) Define the term crimp rigidity.
- g) Calculate dimensional stability of polyester yarn whose original length of 2 meter become 1.8 meter after hot air treatment.

**Q.2 Attempt any Three of the following.**

**12 Marks**

- a) Describe the procedure to find yarn count of a cotton yarn from cone.
- b) Explain the effect of yarn twist on handle and mechanical property of fabric.
- c) Describe with sketch the measurement of yarn unevenness by visual examination (ASTM) method.
- d) Explain the effect of irregularity on fabric quality and fabric dyeing Property.

**Q.3) Attempt any Three of the following.**

**12 Marks**

- a) Describe the procedure to find count of warp and weft of cotton plain fabric.
- b) Explain with diagram the capacitance principle involved to measured evenness of yarn.

- c) Suggest the fibre property and process condition to produce even yarn with justification
- d) Explain photoelectrical principle with relevant sketch for measurement of cotton yarn hairiness

**Q.4) Attempt any Three of the following.**

**12 Marks**

- a) Explain with sketch the microscopic method for measurement of cotton yarn hairiness.
- b) Explain working of pendulum lever principle used in strength tester with a labeled diagram.
- c) Explain working of Constant Rate of Loading with a labeled diagram.
- d) Describe procedure of single yarn strength measurement with labeled diagram.
- e) Explain with sketch the working of ballistic yarn strength tester.

**Q.5) Attempt any Two of the following.**

**12 Marks**

- a) Select the finer yarn from the wooden box containing 3 bobbins of 80 Denier polyester yarn, 40<sup>s</sup> Ne cotton yarn and 35 tex polyester yarn with justification.
- b) Compare 36s cotton yarn made from 3.0 TM and 4.5 TM based on amount of Twist, Strength of yarn and yarn softness.
- c) Compare random variation and periodic variation in yarn based on wavelength, amplitude, graph and Causes for variation.

**Q.6) Attempt any Two of the following.**

**12 Marks**

- a) Explain the effect of following factors on the tensile property of textile material
  - i) Specimen length
  - ii) Rate of loading
  - iii) Humidity and temperature
- b) A School bag producer needs the stronger cotton yarn for bag fabric. Three yarns are selected and tested by expert technical team of a mill. The details of test are as follow-
  - i) 50s Ne cotton yarn having breaking strength of 250 grams.
  - ii) 30 Tex cotton yarn having breaking strength of 250 grams.
  - iii) 80 Denier cotton yarn having breaking strength of 250 grams.Suggest the strongest Tenacity yarn for bag fabric with justification.
- c) A mill is facing a problem of more hairiness in yarn. Suggest the remedies base on raw material quality, processing speed and mechanical condition of machine.

**Scheme – I**

**Sample Test Paper - I**

**Programme Name : Diploma in Textile Manufacture**

**Programme Code : TX**

**Semester : Third**

**Course Title : Yarn Testing**

**Max. Marks : 20**

22369

**Time : 1 Hour**

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**Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

**Q.1 Attempt any FOUR.**

**08 Marks**

- a) Define Tex and give its relation with English Count.
- b) State the concept of measurement of yarn count by direct yarn numbering method.
- c) State any two significance of twist multiplier.
- d) State any two functions of twist in yarn structure.
- e) Define the term Index of Irregularity with its expression.
- f) Give the classification of Periodic Variation.

**Q.2 Attempt any THREE.**

**12 Marks**

- a) Describe with flowchart the procedure to find yarn count of a cotton yarn from cone.
- b) Calculate the length in meters of 40s cotton yarn wound on a winding cone of weight 2.5 kilogram.
- c) Explain the effect of twist on the strength of filament yarn with suitable graph.
- d) Define the term –i) Short term variation ii) Long Term Variation
- e) Describe with sketch the procedure to determine the twist by Take up Twister tester.

Scheme – I

Sample Test Paper - II

Programme Name : Diploma in Textile Manufacture

Programme Code : TX

Semester : Third

Course Title : Yarn Testing

Max. Marks : 20

22369

Time : 1 Hour

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**Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

**Q.1 Attempt any FOUR.**

**08 Marks**

- a) Draw neat labelled diagram of yarn hairiness tester based on photoelectric principle.
- b) Calculated tenacity of 20 Ne cotton yarn having breaking strength of 250 grams.
- c) Explain Constant Rate of Extension principle with suitable sketch.
- d) Compare single yarn strength tester and lea strength tester based on sample size and tensile strength property.
- e) Calculate dimensional stability of draw textured polyester yarn whose original length of 100 meter became 75 meter after hot water treatment.
- f) State any two causes for yarn hairiness.

**Q.2 Attempt any THREE.**

**12 Marks**

- a) Explain working of Constant Rate of Travers with a labeled diagram.
- b) Describe with sketch measurement of crimp contraction of draw textured yarn by hot air method.
- c) Explain with labelled diagram of the microscopic method of yarn hairiness measurement.
- d) Describe procedure of Lea strength measurement with a labeled diagram.
- e) Describe effects of spun yarn hairiness on yarn strength and fabric pilling.