22369

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 yarn number and give formula for the same.

b) Define 'S' twist with suitable diagram.

c) Define "Imperfections".

d) List causes of yarn hairiness.

e) Calculate tenacity of 24 Ne cotton yarn having 180 gram force breaking strength.

f) Explain dimensional stability.

g) Calculate the English count (Ne) of a yarn if 2,00,000 meters of it weighs 2000 grams.

Marks

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

   a) Compare direct and indirect yarn numbering systems.

   b) Explain the effect of twist on yarn and fabric properties.

   c) Classify different types of variations in yarn and explain them.

   d) Explain photoelectric principle of yarn hairiness measurement.

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

   a) Convert 100 Nm into Tex and Denier yarn number.

   b) Calculate twist multiplier and twist factor for 30 Ne combed yarn having 22 TPI value.

   c) Calculate imperfection value for 40 Ne carded yarn having 20 thick (+50%), 4 thin (-50%) and 3 Neps (+200%) for 2000 meter length.

   d) Describe procedure for measurement of yarn hairiness.

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

   a) Calculate resultant count in Ne of three ply yarn manufactured by combining 42 Ne, 15 Tex and 135 Denier yarns.

   b) Describe procedure for measurement of twist in single yarn with suitable diagram.

   c) Calculate CSP for 60 Ne cotton yarn having 28 lbs lea strength.

   d) Calculate dimensional stability of polyester yarn having 2 meter length which becomes 1.75 meter after treatment at 130°C for one hour in hot air oven.

   e) Describe the procedure for measurement of crimp contraction of draw textured yarn.

Marks

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

a) Describe the procedure for measurement of yarn evenness by visual examination method with suitable diagram.

b) List down various advanced features of tensojet and tensorapid instrument.

c) Explain CRE and CRL principle for tensile properties measurement with suitable diagram.

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

a) Explain index of irregularity and reduction of irregularity.

b) Compare load elongation curve with stress strain curve.

c) Describe the single yarn strength measurement procedure with the help of a suitable diagram.

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