17346

21415

3 Hours/100 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****.*

MARKS

1. Solve **any five** : **(5×4=20)**
   a) Why micrometers and calipers are not used to measure yarn diameter ? Define yarn count (In general).
   b) While measuring count of yarn by wrap reel method.
      i) What is circumference of British and Metric wrap reel ?
      ii) How many number of revolutions of wrap reel required to prepare British lea and Metric lea ?
      iii) What is length of lea in British and metric wrap reel ?
   c) Define Twist. What are directions of twist ? (Draw figure)
   d) What is relationship between twist and yarn strength ?
   e) Describe periodic variation in yarn evenness.
   f) What is index of irregularity ? How it is used to access the process performance ?
   g) Define U%, C.V%, Imperfection's and Random variation.

2. Solve **any four** : **(4×4=16)**
   a) Define with formulae british count, worsted count, metric count, woollen count, metric count and tex (any four).
   b) What are system's of yarn numbering ? Define and also give merit's and demerit's of any one system.
   c) If 100 metres of cotton yarn weight is 3 grams. Calculate it's English count, tex and Denier.

P.T.O.

MARKS

d) What is effect of twist on fabric properties ?

e) What is significance or usefulness of Twist Multiplyer (T. M.) ? Also write formula for T.M. and Twist Factor (T.F.).

f) Draw neat sketch with Labels of take-up twist tester used for Double Yarn.

3. Solve **any two** : **(8×2=16)**

a) Describe method of measurement of yarn count from package wrap.reel method with precaution's taken during measurement.

b) Describe measurement of twist in single yarn by twist contraction method.

c) What are effects of yarn irregularity on yarn and fabric properties ?

4. Solve **any four** : **(4×4=16)**

a) Derive relation between yarn count and yarn diameter.

b) Define limit irregularity, addition of irregularity and reduction in irregularity.

c) What are causes of unevenness ?

d) Define Yarn Hairiness. What are causes of Yarn Hairiness ?

e) How to measure yarn hairiness by projection microscope method ?

f) Define load, tenacity, breaking extension, breaking length.

5. Solve **any four** : **(4×4=16)**

a) Explain measurement of Yarn Hairiness by photo electric method.

b) Explain principles Constant Rate of Extension (CRE) and Constant Rate of Loading (CRL).

c) What is strain gauge principle ?

d) What is count strength product ? Write formula for corrected CSP.

e) Draw neat sketch of Instron Tester.

f) Define Elastic recovery and work of rupture.

6. Solve **any two** : **(8×2=16)**

a) What are factors affecting tensile properties of textiles ? Explain in detail.

b) Describe the method of measuring single yarn strength with neat sketch.

c) Describe measurement of unevenness by Electronic capacitance tester.
