22369

11819

3 Hours / 70 Marks Seat No. | | | | | | | | |

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****.*

Marks

1. Attempt **any five** of the following : **10**

a) Define the term Tex with its formula.

b) State the function of Yarn twist in Yarn structure.

c) Define the term Yarn Evenness.

d) Draw diagram of photoelectric method for Yarn hairiness measurement.

e) Define the term Breaking strength.

f) Define crimp rigidity.

g) Calculate the dimensional stability of draw textured polypropylene yarn whose original length of 100 meter became 75 meter after hot water treatment.

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

a) Describe the procedure of lea preparation by wrap reel tester with labeled diagram.

b) Explain the effect of twist on the strength of spun cotton yarn with suitable graph.

c) Describe the measurement of yarn unevenness by cutting and weighing method.

d) Explain Random variation in yarn with suitable diagram.

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

a) Describe with flow chart the procedure to find yarn count of a cotton yarn from cone.

b) Explain periodic variation in yarn with suitable diagram.

c) Suggest the measures to control the random variation in yarn.

d) Describe the effect of yarn hairiness on

i) Yarn strength ii) Yarn evenness of spun yarn.

P.T.O.

Marks

4. Attempt **any four** : **12**

a) Explain photoelectric principle for measurement of yarn hairiness with neat diagram.

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

c) Explain with label diagram the working of stelometer.

d) Describe the procedure for conversion of Load-elongation curve to stress-strain curve with suitable diagram.

e) Explain the working of strain gauge principle with labeled diagram.

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

a) i) A yarn of 300 meter length weighs 4 grams, calculate its denier and Tex.

ii) Find out resultant count of three fold cotton yarn composed of 20^s, 30^s and 40^s singles.

b) Suggest the low twisted yarn for manufacturing of soft and absorbent Fabric product from given data –

i) Yarn of 36^s count with 4.5 TM.

ii) Yarn of 25^s count with 3.6 TM.

iii) Yarn of 36^s count with 3.6 TM.

c) Suggest the fibre property, process parameter and machinary condition to produce even yarn with justification.

6. Attempt **any two** : **12**

a) A mill is facing problem of more hairiness in yarn. Suggest the remedies based on

i) Raw material quality

ii) Processing speed

iii) Mechanical condition of Machine.

b) Compare Single Yarn strength tester and lea strength tester based on sample size, basic principle used and tensile strength property.

c) i) Calculate the tenacity of yarn having 80^s Ne count and 300 gram breaking strength.

ii) Explain the effect of specimen length on tensile property of textile material.
