313344

24225

3 Hours / 70 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.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE : **10**

(a) Define worsted count and give expression (formula) for the same.

(b) A cone of 30^S Ne weighs 2 kg, find out the length of yarn it contains.

(c) Explain the method of sampling the fabric, both warpway and weftway, for tensile strength testing with the help of diagram.

(d) Define "Air Permeability" of fabric.

(e) Define "Abrasion". Enlist different types of abrasion.

(f) Define Thermal Insulation Value (T.I.V.). Give expression for the same.

(g) Define elastic recovery.

2. Attempt any THREE : **12**

(a) Explain method to determine count of yarn in package form with an example.

(b) Elaborate on standard method to determine fabric length and width.

(c) Explain procedure to determine abrasion resistance of a fabric sample by Martindale abrasion resistance tester.

(d) Define 'Air resistance and Air porosity' of a fabric. Explain factors which affects air permeability of fabric.

3. Attempt any THREE : **12**

(a) Describe method to determine twist in single yarn by twist contraction principle.

(b) Elaborate on the method to determine dimensional stability of fabric.

(c) Describe concept of pilling. State causes of pilling. Suggest measures to reduce pilling tendency.

(d) Define waterproof, shower-proof and water repellent fabric. Describe procedure to determine water repellency by hydrostatic water head test.

4. Attempt any THREE : **12**

(a) Elaborate on the procedure to determine pilling resistance by ICI pill box tester.

(b) Describe method to determine drape coefficient of fabric using drapemeter.

(c) Define following tensile terminologies :

(i) Mass stress

(ii) Strain

(iii) Tenacity

(iv) Breaking length

(d) Elaborate the term CSP. State its significance. Describe method to determine CSP of given yarn.

(e) Explain method to determine bursting strength of a fabric.

5. Attempt any TWO : **12**

(a) Classify variations in the yarn into different categories. State causes of unevenness. Explain the concept of U% and C.V. %.

(b) Calculate the cover factor of a fabric from following fabric particulars :

(i) End/inch = 80

(ii) Picks/inch = 60

(iii) Warp count = $2/50^{S}$ cotton

(iv) Weft count = 100 denier polyester

(c) Elaborate on test procedure to determine bending modulus of a fabric.

6. Attempt any TWO : **12**

(a) (i) Define Denier. A polyester filament yarn of 100 mt length weighs 2 gms. Find out its denier.

(ii) Define English count (Ne, cotton count). A $2/50^{S}$ cotton yarn cone weighs 1.5 kg, find out the length of yarn it contains.

(iii) Define woolen count. Give expression (formula) for the same.

(b) Elaborate on various principles of tensile strength measurement with the help of schematic diagrams.

(c) Describe method to determine tearing strength of a fabric.
