22364

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.

(8) Use of Steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. Attempt any FIVE : **10**

(a) A cone of 40^s carded yarn weighs 2 kg. Calculate the length of yarn it contains.

(b) A 100 meter lea of polyester filament yarn weighs 2 grams. Calculate the denier and tex of the yarn.

(c) A cotton fabric sample of 870 milligram weight reduces to 590 milligrams after 50000 cycles during abrasion testing. Calculate the Wear Index of the sample.

(d) Define air permeability and air resistance.

(e) Fiber A is a 1.5 denier fiber and breaks at 9 grams load. Fiber B is a 2 denier fiber and breaks at 10 gram load. Which of these 2 fibers is stronger than another ?

(f) A yarn sample of 10 cm length gets extended to 13 cm due to application of load. After the load is removed it becomes 11 cm in length. Calculate the elastic recovery.

(g) A cotton yarn lea of 120 yard weighs 2.16 gram. It breaks at a load of 60 lb, calculate its CSP.

2. Attempt any THREE : **12**

(a) Describe the standard procedure to determine count of yarn using electronic weighing balance.

(b) Describe fabric sampling method with the help of a sketch.

(c) Elaborate the terms (i) Serviceability (ii) Wear and (iii) Abrasion.

(d) Explain the method to determine water repellency of a fabric by spray test.

3. Attempt any THREE : **12**

(a) Draw diagrams of 'S' twisted and 'Z' twisted yarn. Elaborate method of twist determination of yarn by twist contraction principle.

(b) Explain standard method to determine gsm (grams per square meter) of a fabric sample.

(c) List down various end points for assessment of fabric damage in abrasion testing.

(d) Elaborate standard method to determine air permeability of given fabric sample using air permeability tester.

4. Attempt any THREE : **12**

(a) Explain effect of yarn unevenness on yarn and fabric properties.

(b) The length of warp sheet on the weaver's beam is 800 meters. Calculate the length of fabric produced if the warp crimp % is 5%.

(c) State causes and remedies of pilling. Describe method to determine pilling by ICI pill box tester.

(d) Explain the term T.I.V. State the purpose of T.I.V. determination.

(e) Explain standard method of determination of CSP of yarn. State importance of determination of CSP of yarn.

5. Attempt any TWO : **12**

(a) Classify variations in yarn in different categories. Elaborate long term, medium term and short term variation in yarn. Explain the expressions U%, CV% and PMD used to specify yarn unevenness.

(b) Calculate bending modulus of cotton drill fabric with following data :

Fabric overhanging length = 4.6 cm

Fabric weight = 82 mg/cm^2

Fabric thickness = 0.04 cm

(c) Explain standard procedure to determine tensile strength of a fabric.

6. Attempt any TWO : **12**

(a) Calculate cover factor of fabric having following particulars :

Ends/inch = 72

Warp count = $2/60^s$ cotton

Picks/inch = 60

Weft-count = 100 Den polyester

(b) Calculate drape coefficient of suiting fabric tested on drape meter using following data :

Draped pattern paper weight = 3.2 gm

Ammonia paper weight = 0.012 gm/cm^2

Sample size diameter = 10" (inches)

Supporting disc diameter = 5" (inches)

(c) Elaborate method for determination of bursting strength of a fabric using Bursting strength tester. Explain the importance of this test.
