

312337

12425

3 Hours / 70 Marks

Seat No.

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- 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) Enlist any four objectives of sizing.
- (b) Write the importance of scouring of cotton for subsequent wet processing.
- (c) Enlist any four bleaching agents used in bleaching of textiles.
- (d) State the distinct stages involved in the mercerisation of cotton.
- (e) Enlist the factors affecting the mercerisation process.
- (f) Draw a labelled sketch of a yarn mercerisation machine.
- (g) Enlist any four changes occurring in cotton due to mercerisation.



**2. Attempt any THREE :****12**

- (a) A fabric roll of 240 yards long and 48 inch width contains following defects using 4 point system :

- (i) Defect upto 3" = 04
- (ii) Defect over 3" but less than 6" = 10
- (iii) Defect over 6" but less than 9" = 02
- (iv) Defect over 9" = 02

If the customer's criteria for acceptability is 40 points / 100 sq. yards, comment on the acceptability of the inspected lot.

- (b) Elaborate the role of different ingredients used in the size paste formulation with one suitable example.
- (c) Elaborate the mechanism of scouring process with suitable chemical reactions.
- (d) Explain with reactions, the mechanism of bleaching cotton fabric using sodium hypochlorite.

**3. Attempt any THREE :****12**

- (a) Elaborate the classification of softeners used in sizing of textile warp yarns.
- (b) Describe the Kier boiling method of scouring 100% cotton voile fabric with the help of a labelled sketch.
- (c) Compare Hydrogen peroxide bleaching with sodium hypochlorite bleaching agents (any four points).
- (d) Propose the significance of causticization and elaborate the process.

**4. Attempt any THREE :****12**

- (a) Compare pad-chainless and padless– chainless mercerisation (any four points).
- (b) Elaborate the bleaching procedure for wool by using hydrogen peroxide.
- (c) Explain the absorbency method to evaluate the scouring efficiency of 100% cotton fabric.

- (d) Differentiate between enzymatic desizing and conventional desizing (any four points).
- (e) Describe the construction and working of a shearing and cropping machine with a neat labelled sketch.

**5. Attempt any TWO :**

**12**

- (a) Propose a machine with a neat labelled sketch, used for singeing of 100% cotton poplin fabric. Also outline the procedure of the same.
- (b) Evaluate the desizing efficiency of 100% cotton by weight loss method. Also propose the factors affecting the desizing process.
- (c) Describe the scouring method adopted to remove the hydrophobic impurities from
  - (i) Grey wool fabric
  - (ii) Raw silk fabric

**6. Attempt any TWO :**

**12**

- (a) Propose a size paste formulation for
    - (i) 100% cotton shirting
    - (ii) 100% polyester fabric
    - (iii) Polyester / Cotton suiting blend
  - (b) Outline and elaborate the factors affecting bleaching of 100% cotton using hydrogen peroxide.
  - (c) Propose the following methods to evaluate the efficiency of mercerisation process :
    - (i) BAN
    - (ii) Axial ratio
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