

22458

22223

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.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) State any four objectives of scouring.
 - b) Explain in brief, why direct dyes are so called.
 - c) List the parameters affecting on dyeing quality of Fabrics.
 - d) Recite the classification of vat dyes along with their dyeing temperatures.
 - e) Name the problems encountered in the dyeing of sulphur dyes on cotton.
 - f) Enlist the chemicals used for dissolution of Vat dyes. Also write its chemical formula.
 - g) Write a note on 'Natural dyes'.

P.T.O.

2. Attempt any THREE of the following: 12

- a) Demonstrate with a neat labelled diagram the working principle of a jigger dyeing machine.
- b) Explain the reasons and effect of after treatments of direct dyed cotton w.r.t. hue and fastness.
- c) Elaborate the pigment application procedure on cotton by adopting batch method of coloration.
- d) Compare the different methods of application of natural dyes on cotton.

3. Attempt any THREE of the following: 12

- a) If 150 kg cotton fabric is to be dyed for 2.7% shade by using 40 gpl salt and 15 gpl alkali by maintaining MLR of 1:30. Find out the amount of dye solution, salt solution, alkali solution and water required if stock solution of dye, salt and alkali is 10, 200 & 100 gpl respectively.
- b) Describe with a neat labelled dyeing ramp, the dyeing procedure for cotton by using hot brand reactive dyes.
- c) Discuss with a neat labelled dyeing time temperature profile, the dyeing procedure of cotton using. Iw class of Vat dye.
- d) Elaborate on the classification of acid dyes on following parameters. pH, acid used, molecular state and fastness property.

- 4. Attempt any THREE of the following:** **12**
- a) Find out the amount of total dyeing solution required to match a dyeing 5000 kg fabric by continuous (padding) method with 70% expression and through capacity of 100 ltrs. assuming 100% fixation. The sample is obtained by dyeing 2,5% shade with 80% exhaustion by exhaust method with MLR of 1:30. Also comment on the amount of water consumption.
 - b) Elaborate on the classification of reactive dyes on following parameters structure, dyeing temperature, % exhaustion and application method.
 - c) Elaborate with proper chemical reactions the phenomena of sulphur dyeing of cotton fabrics.
 - d) Describe with justification, the different method of dissolution of naphthols.
 - e) Describe with a neat time temperature labelled profile, the dyeing procedure of cotton using basic dyes.
- 5. Attempt any TWO of the following:** **12**
- a) Analyze the effect of MLR and percentage exhaustic on the dyeing of textiles by exhaust method.
 - b) Outline and elaborate the different methods of application of reactive dyes on cotton by adopting continuous dyeing techniques.
 - c) Generate with neat labelled dyeing ramp, the effect of salt and pH on dyeing of different class of acid dyes on wool.
- 6. Attempt any TWO of the following:** **12**
- a) Analyze the effect of the different methods of application of vat dyes on the cost of dyeing the fabric and water consumption.
 - b) Differentiate the different methods of stabilization of base during coloration of cotton by continuous processes.
 - c) Compute the remedies of any three problems faced during the dyeing of wool silk fabrics using acid dyes.
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