

22458

24225

03 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) Define the term “Percentage Exhaustion” with one suitable example.
 - b) Enlist any four objectives of mercerisation.
 - c) Briefly elaborate the naphtholation methods.
 - d) Recite the conditions and reaction involved in the diazotisation process.
 - e) Enlist the factors affecting the dyeing of wool using acid dyes.
 - f) With reaction, depict the dye fibre interaction between basic dye and silk.
 - g) Enlist any four national dyes used for coloration of textiles.

P.T.O.

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

- a) 214kg cotton fabric is dyed for 2.1% shade by maintaining MLR of 1:8. Find out the amount of salt, alkali, dye and water required for the following required:

Conditions	Stock	Required
1) Dye	10%	2.1%
2) Salt	200 gpl	30 gpl
3) Alkali	100 gpl	15 gpl

- b) Elaborate the different after treatments employed to enhance the wash fastness properties of direct dyed fabrics. (Any two)
- c) Demonstrate the relation between the molecular weight of direct dyes and the parameters employed it temperature and salt.
- d) Describe with time temperature profile, the procedure used to dye wool by using levelling acid dyes.

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

- a) Explain the terms:
- i) % Expression
 - ii) % Exhaustion
- and its significance in relevant areas with one suitable example.
- b) Draw the structure of reactive groups present in different sub-class of reactive dyes and mention their dyeing temperature.
- c) Elaborate the distinct steps involved in the dyeing of vat dyes on cotton with the help of chemical reactions.
- d) Classify the vat dyes on the following parameters
- i) Vatting Temp
 - ii) Dyeing Temp
 - iii) Caustic and Hydrosol
 - iv) Salt

- 4. Attempt any THREE of the following:** **12**
- a) Elaborate the quality parameters required for a Ready For Dyeing (RFD) fabric.
 - b) Analyse the reactivity of different class of reactive dye with the help of structure of reactive groups.
 - c) Justify with reactions, the tendering of sulphur black dyed cotton fabric.
 - d) Outline the different types of bases used for Azoic Colour application.
 - e) With time temperature profile, elaborate the dyeing procedure for basic dyes on silk fabric.
- 5. Attempt any TWO of the following:** **12**
- a) Analyze the working principle and features of a CDR with the help of neat labelled diagram.
 - b) Outline the different dyeing methods of cellulosic fabrics using reactive dyes. Enlist any two features of each.
 - c) Compare the different methods of application of marigold natural dye on cotton.
- 6. Attempt any TWO of the following:** **12**
- a) Analyse the factors affecting dyeing of wool using acid dyes.
 - b) Describe with neat sketch, the distinct steps involved in pigment application process on 100% cotton fabric by batch process and continuous process.
 - c) Elaborate the following application methods and enlist any two features of each.
 - i) Leuco-Vat method
 - ii) Vat acid method
 - iii) Vat pigment method
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