

313341

12526

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 answer 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) Enlist four objective of pre-treatment process.
 - b) Recite the types of dye-fiber interaction between direct dye and cellulose with proper general reaction.
 - c) Name the reagents used and their chemical formula used for vatting process.
 - d) Enlist and four properties of Azoic colours.
 - e) Recite with reactions the steps in the diazotisation of base.
 - f) List the methods of classification of acid dyes.
 - g) Discuss the classification of natural dyes in brief.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Elaborate the effects of mercerisation on dyeability of cotton using reactive dyes.
 - b) Elaborate the reactive systems present in different class of reactive dyes.
 - c) Describe with time temperature profile the dyeing method of 100% cotton poplin using in class of vat dye.
 - d) Differentiate Acid dyes based on the dyeing parameters.
- 3. Attempt any THREE of the following: 12**
- a) Illustrate the terms “Percentage exhaustion” and “Percentage expression” with one suitable example each and state the significance of the same.
 - b) Propose process flow for the continuous dyeing method of hot brand reactive dyes on cotton fabric by one dip method.
 - c) Describe the vat pigmentation method of dyeing 100% cotton fabric with the help of a neat outline sketch.
 - d) Compute the different methods of dissolution of naphthols.
- 4. Attempt any THREE of the following: 12**
- a) Illustrate the working of jigger dyeing machine with the help of a neat labelled diagram.
 - b) Propose two after treatments in detail used for enhancing the wash fastness property of the direct dyed fabric.
 - c) Suggest remedies for the bronziness of sulphur dyed fabrics. (Any two remedies)
 - d) Elaborate the different class of naphthols used for azoic coloration of cotton fabrics.
 - e) Describe the process of with Termerin dye using Alum as modrant. Also mention the colour formed.

- 5. Attempt any TWO of the following: 12**
- a) Describe with a neat labelled line diagram, the working principle and procedure to operate “Continuous Dyeing Range” machine.
 - b) Propose the conditions and procedure of dyeing 100% cotton fabric using Hot brand reactive dye on jigger dyeing machine. Also draw the time temperature profile of the same.
 - c) Explain classification of vat dyes based on the application method.
- 6. Attempt any TWO of the following: 12**
- a) 450 kg cotton fabric is dyed using 2.5% shade of vat dyes. Required concentration of salt, caustic and hydrose is 10 gpl, 12 gpl and 15 gpl respectively. Find out the amount of BVS, salt, alkali, hydrose solution required if stock solution of dye = 10%, salt = 20% caustic = 20% and hydrose = 20%.
 - b) Elaborate the :-
 - i) Triazine based reactive dyes.
 - ii) Vinyl sulphine reactive dyes based on their chemical structure and application method.
 - c) Propose a dyeing machine for the dyeing of knitted cotton fabric with reactive dyes. Elaborate the working principle and procedure of the same with the help of neat labelled sketch.
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