

22575

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.

Marks

1. Attempt any FIVE of the following :

10

- (a) Enlist any four effects of mercerisation of polyester/cotton blended fabrics.
- (b) Draw a neat labelled time-temperature profile of dyeing of nylon fabric with metal complex dyes.
- (c) Recite any four fasteness properties of basic dyes.
- (d) List the different types of levelling agents used in dyeing of nylon with acid dyes.
- (e) Define the term 'saturation factor' and give its significance.
- (f) State 'Mod Acrylic Fibres'. Give two examples.
- (g) State any four physical properties of acrylic fibres.



2. Attempt any THREE of the following : 12

- (a) Elaborate the effect of heat setting of polyester on the dyeability using disperse dyes with the help of a neat labelled graph.
- (b) Identify and suggest the conditions and parameters to be selected for dyeing micro denier polyester.
- (c) Discuss various advantages enjoyed due to blending of fibres.
- (d) Describe the different colour effects that can be achieved on P/C blended fabrics.

3. Attempt any THREE of the following : 12

- (a) Elaborate the working of beam dyeing machine with the help of neat labelled sketch.
- (b) Identify the parameters which are essential in deciding the selection of carriers for dyeing of polyester fabric at 100 °C.
- (c) Elaborate on the different dyeing methods that can be adopted for dyeing of p/w blends.
- (d) Identify the conditions required for dyeing of p/c blends by continuous dyeing method.

4. Attempt any THREE of the following : 12

- (a) Justify the effect of scouring of polyester on the dyeability.
- (b) Explain the effect of dispersing agent and carriers on the dyeability of polyester with the help of graph.
- (c) Elaborate the mechanism of dyeing nylon using acid dyes.
- (d) Compute the effect of different commoners on the dyeability of 100% acrylic fabric.
- (e) Describe the dyeing of acrylic/wool blended fabric using cationic dyes by one bath one stage dyeing technique.

5. Attempt any TWO of the following :**12**

- (a) Analyse the techno-commercial advantages and limitations of mass coloration of polyester.
- (b) Detect the various defects observed in the dyeing of nylon and suggest the rectification of the same (any three).
- (c) Identify the problems associated with dyeing of blends by two bath methods and suggest the techno commercial rectification of any three problems.

6. Attempt any TWO of the following :**12**

- (a) Compute the dyeing conditions of polyester fabric by using a jet dyeing machine and also explain the construction and working principle of the same.
 - (b) Illustrate three defects observed in the dyeing of polyester and also suggest the rectification of the same.
 - (c) Demonstrate the reasons for selecting the different types of retarders in dyeing of acrylic fibres and also explain the chemistry involved in the functioning of retarders.
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