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3 Hours / 70 Marks Seat No. | | | | | | | | |

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 : **10**

(a) State the glass transition temperature of Nylon-66 in dry state and at 100% RH.

(b) Define micro denier polyester and enlist any two features of the same.

(c) Enlist any two ecofriendly carrier.

(d) State any four objectives of texturising.

(e) Write any four advantages of blending.

(f) State any four commercial blends of polyester.

(g) Compare blending with mixing on any two parameters.

2. Attempt any THREE : **12**

(a) Elaborate the different colour effects achieved due to fibre blending.

(b) Identify the different types of co-monomers used in the manufacturing of acrylic fibres. Draw the structure of the mentioned co-monomer in each type/class.

(c) Identify any four essential properties and four desirable properties of carriers used during the dyeing of polyester fibres by carrier method.

(d) Explain the effects of scouring on the dyeing quality of polyester fabric with due justification.

3. Attempt any THREE : **12**

(a) Identify the significant effects of bleaching on the dyeing quality of the given P/C blended fabrics with proper justification.

(b) Elaborate the procedure of mass colouration of polyester with the help of neat labelled sketch. Enlist two advantages & two limitations of the same.

(c) Describe with a time-temperature profile, the dyeing procedure of 125 glm nylon fabric by using milling acid dyes.

(d) Describe the dyeing procedure of nylon cotton blended fabric to obtain black shade by using one bath method. Draw the time temperature profile of the same.

4. Attempt any THREE : **12**

(a) Illustrate with a neat labelled sketch the working & principle of a beam dyeing machine.

(b) Elaborate the dyeing procedure of polyester by HTHP method with the help of a time temperature profile.

(c) Outline the classification of metal complex dyes & comment on the two fastness properties of each.

(d) Demonstrate the significance of 'fibre saturation factor' and 'dye saturation value' in dyeing of acrylic fibres.

(e) Propose a detailed step by step procedure of producing a green shade on an intimately blended polyester-cotton blended fabric.

5. Attempt any TWO : **12**

(a) Demonstrate with time temperature profile, the procedure to develop solid shade on polyester-wool blended fabric by two bath method using disperse and acid dyes combination.

(b) Suggest and elaborate on a method of continuous dyeing of polyester in open width form with the help of a neat labelled sketch.

(c) Compare HTHP beam dyeing machine with jet dyeing machine with the help of a neat labelled diagram (any four points for comparision).

6. Attempt any TWO : **12**

(a) Propose the mechanism of functioning of different types of retarders which are used in the dyeing of acrylic fibres with cationic dyes.

(b) Compare the techno commercial aspects of dyeing blends by using one bath method vis-a-vis two bath method.

(c) Elaborate on the mechanism of dyeing of basic dyes on nylon fibres along with dyeing procedure and fastness properties.
