22577

24225

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 of the following : **10**

a) Enlist any four reasons for heat setting.

b) Which type of fibres require heat setting process. Give two examples.

c) Enlist two reasons for the pill formation.

d) Write any four advantages of foam finishing technique.

e) Define percentage expression with one suitable example.

f) Explain in brief 'Special finishing' methods.

g) Define the term 'Emulsion' with one suitable example.

Marks

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

a) Elaborate the shrinkage method to determine the heat setting efficiency of 100% polyester plain woven fabrics.

b) Explain the mechanism of pilling and enlist the causes of pilling.

c) Elaborate the different types of soils which are responsible for fabric soiling.

d) Describe the procedure of weight reduction treatment of 100% polyester poplin fabric.

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

a) Describe with a neat labelled diagram, the decatising process carried out for finishing of woollen fabric.

b) Describe the procedure of finishing plain woven 100% cotton fabric to achieve temporary stiff finish and permanent soft finish by depicting proper recipe.

c) 5000 mt fabric of 200 GLM is finished with following formulation :

Softener - 05 % on volume basis (20% stock conc^{n})

Acetic acid - 1% on weight basis.

If the trough capacity is 25 lt and total solution required is 725 lt under ideal condition. Calculate the % Expression and % Add-on.

d) Describe the chemical formulation of soil release finish for 100 % polyester shirting fabric. Also mention the function of each ingredient used in the formulation.

e) Describe the procedure and conditions of heat setting of polyester / cotton blended fabric and the stages at which heat setting of the blend can be done.

Marks

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

a) Elaborate the different methods of heat setting nylon fabrics.

b) Describe the heat setting stages and conditions employed in the polyester / viscose blended fabrics.

c) Elaborate the different factors which governs the soil release tendency of 100% polyester suiting fabrics.

d) Analyse the factors affecting the stability of foam used for finishing of textiles.

e) Calculate the amount of chemicals required for finishing 25000 mts fabric with GLM of 125 gms and an expression of 65% for the given recipe with a trough capacity of 50 lt under ideal condition.

Water repellent finish	- 50 gpl (25% active content)
Softener	- 10 gpl (40% active content)
Acetic acid	- 1 gpl

Find the total finishing solution required under ideal conditions and % add-on.

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

a) Analyse the factors governing the heat setting efficiency of polyester fabrics with the help of neat graphs.

b) Propose and elaborate any two physical methods and two chemical methods adopted to minimize pilling tendency of polyester/cotton blended fabrics.

c) State the evaluation methodology for determining the bill release finishing efficiency by AATCC method.

Marks

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

a) State the different methods of foam generation along with its advantages and limitations.

b) Find out the amount of chemical required to get the same effect by padding technique if the exhaust formulation is as follows :

FR finish – 150 gpl

acetic acid - 2 pgl

% Exhaustion is 80% (fixation), MLR = 1:10, W = 500 kg. Predict the formulation for padding method if the % expression is 65% and efficiency of fixation is 80%

c) Analyse the features of fabric finished by using macro, micro and nano emulsions.