

16125(D) - 0 DEC 2016

B. Tech 5th Semester Examination

Textile Chemical Processing-I (NS)

TE-312

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Answer one question from each of the sections A, B, C and D. All questions in section E are compulsory.

SECTION - A

1. Describe process sequence for 100% polyester fabric. Justify importance of each process. (10+10=20)
2. Compare advantages and limitations of plate, roller and gas singeing methods. Explain various influencing parameters of gas singeing to get quality singeing. (10+10=20)

SECTION - B

3. Describe bromite desizing of cotton with related chemical aspects. Explain influence of desizing parameters on efficiency of desizing. (10+10=20)
4. With the help of a neat labelled schematic diagram, describe scouring of cotton fabric in kier boiling method and influence of scouring parameters on quality of scouring. (10+10=20)

SECTION - C

5. Explain why protein fibres are not bleached in hypochlorite and chlorite methods with chemical aspects. Describe hypochlorite bleaching of cotton and influence of working parameters on quality of bleaching. (10+10=20)

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6. Discuss ammonia treatment method for cotton fabric. Differentiate effectiveness of mercerisation of cotton in conventional NaOH and ammonia treatment methods. (10+10=20)

SECTION - D

7. Explain objectives and mechanism of heat setting of polyester. Explain why complete stabilization of polyester is not possible through heat setting. Discuss influence of temperature on dye uptake on heat set polyester. (10+5+5=20)
8. Discuss various fabric handling devices used in washing of textiles. Explain basic principles of drying of textiles using suction drying and centrifuging and their superiority over conventional cylinder drying method. (10+10=20)

SECTION - E

9. Attempt all questions.
 - (a) Explain why polyester fabric is singed in post-dyeing stage.
 - (b) State various parameters of bacterial desizing.
 - (c) What do you mean by copper number 0.005 for scoured cotton? Explain.
 - (d) Explain influence of sodium silicate in hydrogen peroxide bleaching of cotton.
 - (e) Explain why mercerised cotton develops more reactivity.
 - (f) Explain NaOH concentration in wet mercerisation method with justification.
 - (g) Explain why polyester textiles shrink during heat setting.
 - (h) Explain why temperature of heat setting of polyester has been optimised as 180-210°C.
 - (i) Explain different washing techniques with their effectiveness in brief.
 - (j) Discuss performance of stenter and radiation drying methods. (2×10=20)