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Third Semester B.Tech. Degree Examination, July/August 2021 Chemical Processing of Textiles - I

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1
 - a. Briefly explain various preparatory process for cotton and silk before dyeing process. (10 Marks)
 - b. State the objective of Singeing process. Describe Plate Singeing method. (10 Marks)
- 2
 - a. Describe Shearing and Cropping Operations. (10 Marks)
 - b. Write a note on Modern developments in Scouring and the machines used. (10 Marks)
- 3
 - a. Write the need for desizing of cotton fabrics. Describe the desizing of cotton fabrics by using enzymes. (10 Marks)
 - b. Give the chemistry of Scouring. With the help of a neat sketch, explain the working of modern vertical Kier used for Scouring process. (10 Marks)
- 4
 - a. Explain Solvent Scouring process. Discuss its advantages and disadvantages. (10 Marks)
 - b. Briefly explain Scouring of wool, silk and man – made fibres. (10 Marks)
- 5
 - a. Give reasons for the following :
 - i) Bleaching with reductive bleaching agent cannot produce permanent white.
 - ii) Sodium chlorite is not suggested for bleaching of protein fibres. (10 Marks)
 - b. Explain Methylene blue absorption test and fluidity test to express the degradation of cotton after bleaching process. Give the detailed procedure. (10 Marks)
- 6
 - a. Explain the mechanism of bleaching of cotton by using hydrogen peroxide. Write the effect of catalysts and stabilizers in H_2O_2 bleaching process. (10 Marks)
 - b. Write the objects of optical whitening. Explain the application of optical whitening agent on cotton and the factors influencing the process. (10 Marks)
- 7
 - a. With the help of neat sketch, explain the working principle of J – box equipment and its advantages. (10 Marks)
 - b. With the help of line diagram, explain the working of vapor lock machine used for scouring of P/C fabric. (10 Marks)
- 8
 - a. Explain the physical and chemical changes taken place in cotton during mercerization process. (08 Marks)
 - b. Describe the different methods of assessment of degree of mercerization of cotton yarns. (12 Marks)
- 9
 - a. Explain the mercerisation of cotton yarns in slack and tension form. Draw and explain the working hank mercerisation machine. (10 Marks)
 - b. With the help of a line diagram, explain the working of chainless mercerizing machine. (10 Marks)
- 10
 - a. Write a note on Hot Mercerisation process. (10 Marks)
 - b. Explain Liquid Ammonia mercerisation of cotton. Give its advantages. (10 Marks)