Register Number:……..

KUMARAGURU
college of technology
character is life

**B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023**

(Regulation 2018)

Fifth Semester

**TEXTILE TECHNOLOGY**

U18TXT5003: Textile Chemical Processing I

**COURSE OUTCOMES**

**CO1:** Discuss the principle and mechanism of singeing, desizing.

**CO2:** Explain the various methods of scouring, bleaching and mercerization.

**CO3:** Prepare the dye recipe for colouring the various fibre/fabric.

**CO4:** Examine the colour fastness of the dyed fibre/fabric.

**CO5:** Explain the working principles of various dyeing machines.

**Time: Three Hours** **Maximum Marks: 100**

**Answer all the Questions:-**
**PART A (10 x 2 = 20 Marks)**
**(Answer not more than 40 words)**

| | | | |
|---|---|---|---|
| 1. | Summarize the objectives of fabric preparatory process. | CO1 | [$K_2$] |
| 2. | Outline the importance of selecting a correct wet process sequence. | CO1 | [$K_2$] |
| 3. | Illustrate how the structural changes of cotton by the mercerization process. | CO2 | [$K_2$] |
| 4. | List the advantages of Hydrogen peroxide bleaching agent. | CO2 | [$K_1$] |
| 5. | Show the different types of bonds and their relative strength. | CO3 | [$K_2$] |
| 6. | Define affinity. | CO3 | [$K_1$] |
| 7. | List the properties of vat dyes. | CO4 | [$K_1$] |
| 8. | Define colour fastness and list the different types of colour fastness assessment. | CO4 | [$K_1$] |
| 9. | Illustrate the inside out and out side in liquor flow system. | CO5 | [$K_2$] |
| 10. | List the pretreatment process involved in CBR processing machine. | CO5 | [$K_2$] |

**Answer any FIVE Questions:-**
**PART B (5 x 16 = 80 Marks)**
**(Answer not more than 400 words)**

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|---|---|---|---|---|---|
| 11. | a) | Demonstrate the wet processing sequence of greige fabrics to dyed highlighting the objectives and importance of each process. | 8 | CO1 | [$K_2$] |
| | b) | Explain the methods of evaluating desizing efficiency. | 8 | CO1 | [$K_2$] |

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|---|---|---|---|---|---|
| 12. | | Compare and contrast oxidative and reductive bleaching agents. Which bleaching agent is widely used and state the reason. | 16 | CO2 | [$K_4$] |
| 13. | | Classify reactive dyes and explain the nucleophilic substitution and addition process of reaction of dye and fibre. | 16 | CO3 | [$K_4$] |
| 14. | | Discuss the different types of polyester dyeing methods and state their advantages and disadvantages. | 16 | CO4 | [$K_5$] |
| 15. | a) | Draw and explain the working of beam dyeing machines | 8 | CO5 | [$K_2$] |
| | b) | Elaborate on the working principle of padding mangle. | 8 | CO5 | [$K_6$] |
| 16. | a) | Classify desizing methods and explain the best method of desizing with their advantages. | 8 | CO2 | [$K_4$] |
| | b) | Explain in detail about the wash fastness testing of dyed fabrics. | 8 | CO4 | [$K_2$] |

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