Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025
II Semester

Class : I P.G. **Time : 3 Hours**
Major : Biotextiles **Max. Marks : 100**

23MBXC08 Textile Processing and Effluent Treatment

Course Outcomes:
CO1: Understand the need for fabric preparatory processing and Explain various dyeing and printing techniques.
CO2: Demonstrate the characteristics and treatment methods of textile effluent.
CO3: Identify appropriate textile finishing techniques for various product developments.
CO4: Categorize the different textile effluent treatment methods.
CO5: Analyze the advanced waste water treatment methods.

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Which of the following dyeing method would be most appropriate for uniform colour distribution in polyester garments? CO1K1
   a. Yarn dyeing b. Garment dyeing c. Solution dyeing d. Fibre dyeing

2. The dyeing stage commonly used for creating patterns like stripes and plaids. CO1K1
   a. Fiber dyeing b. Yarn dyeing c. Fabric dyeing d. Garment dyeing

3. The main ingredient in a printing paste to achieve proper adhesion on fabric. CO1K2
   a. Pigments b. Binders c. Thickeners d. Water

4. The method which is commonly used for printing photographic images onto fabric. CO1K2
   a. Digital printing b. Airbrush printing c. Transfer printing d. Marbling

5. A finish that involves compressing fabric to give a polished, shiny effect. CO3K2
   a. Napping b. Beetling c. Cireing d. Carbonising

6. Moiréing primarily used for CO3K2
   a. Creating a wavy or watermark effect on fabric b. Adding stiffness to lightweight fabrics
   c. Reducing fabric glossiness d. Enhancing fabric thickness

7. The following effluent parameter indicates the organic pollution load in wastewater. CO2K2
   a. pH b. Biochemical Oxygen Demand c. Total Dissolved Solids d. Turbidity

8. In textile processing, _____ stage generates effluents with high levels of starch. CO2K2
   a. Scouring b. Sizing c. Desizing d. Dyeing

9. Primary treatment process that removes large solids from wastewater. CO4K2
   a. Coagulation b. Screening c. Neutralization d. Sedimentation

10. The key mechanism for colour removal using ozone in advanced wastewater treatment. CO5K2
    a. Sedimentation b. Adsorption c. Oxidation d. Coagulation

Part B **5 x 6 = 30**
Answer ALL questions
Each answer should not exceed 400 words or two pages

11. a. Brief on the classification of dyes. CO1K2

(or)

11. b. Discuss the role of degumming in silk processing. CO1K2

12.a. Describe the different styles of printing and explain their industrial applications. CO1K3

(or)

12. b. Assess the advantages of digital printing over traditional printing methods. CO1K2

13.a. Give an account on antimicrobial finish. CO3K3

(or)

13.b. Analyze the advantages and limitations of crease-resistant finishes. CO3K3

14.a. Illustrate how BOD and COD are used to measure effluent pollution levels. CO2K3

(or)

14.b. Compare the effluent characteristics of scouring and bleaching processes. CO2K4

15.a. Discuss the primary wastewater treatment in the textile industry. CO4K2

(or)

15.b. Assess the effectiveness of using agro-wastes for adsorption in advanced wastewater treatment. CO5K3

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Outline the sequence of preparatory processes in textile dyeing and explain the role of each step. CO1K2

(or)

16.b. Evaluate the advantages and disadvantages of fabric dyeing compared to yarn dyeing for mass production. CO1K2

17. a. How would you use the screen printing method for a multi-coloured design? CO1K2

(or)

17.b. Analyze the differences between block printing and roller printing in terms of design flexibility and production efficiency. CO1K4

18.a. Discuss the classification of finishes in enhancing fabric functionality with suitable examples. CO3K3

(or)

18.b. Evaluate the significance of water-repellent finishes for outdoor textiles in varying weather conditions. CO3K4

19.a. Demonstrate how BIS limits for textile effluents can guide the treatment process design. CO2K3

(or)

19.b. Examine the sources of effluent generation and their characteristics. CO2K4

20.a. Demonstrate how ozone treatment can be combined with tertiary treatments like activated carbon for colour removal. CO5K3

(or)

20.b. Elaborate on secondary effluent treatment methods. CO4K3

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