The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Textile and Apparel Technology

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Study Programme	: Bachelor of Industrial Studies Honours
Name of the Examination	: Final Examination
Course Code and Title	**: TAI4344**
	Industrial Garment Washing and Finishing
Academic Year	: 2022/2023
Date	: 14th February 2024
Time	: 1330-1630hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Eight (8)** questions in **Three (3)** pages.
3. Write down your Index Number in all the pages of answer scripts.
4. Answer the question one (Q1), which is compulsory and five (5) more questions from Q2 to Q8. Question one (Q1) carries 25 marks and questions two (Q2) to eight (Q8) carry fifteen (15) marks each.
5. Answers to each question should commence on a new page. If a question has many parts, all the parts should be answered in the chronological order under the same question.
6. Write down the answered question numbers in the answer book.
7. Answers should be in clear hand writing.
8. Do not use red colour pens to write the answers.

Compulsory Question

(1) (a) The objective of garment washing and finishing treatments is to impart textural, visual and handle effects. State four (04) reasons for imparting such effects to garments. (04 Marks)

(b) State two (02) different examples for each of "wet process" and "dry process" in relation to garment washing and finishing methods. (04 Marks)

(c) Briefly explain the importance of "subsequent rinsing" in basic washing procedure. (04 Marks)

(d) Give three (03) methods of enzyme deactivation in relation to garment washing. (03 Marks)

(e) Define the term "dipole effect" of a detergent. (03 Marks)

(f) What do you understand by the term "chromophore" in relation to colorants? (03 Marks)

(g) Briefly explain how "vander waals forces" are generated for fixing dye molecules in fibers. (04 Marks)

Answer any five (5) questions from the following seven (7) questions

(2) (a) Write a comprehensive note on the three (03) main criteria according to which garment washing and finishing methods can be classified. (09 Marks)

(b) Briefly explain why "denim fabrics" are more suitable for abrasion. (06 Marks)

(3) Explain the construction, operating principles and applications of the four (04) major types of machines used in garment washing. (15 Marks)

(4) Discuss in detail the three (03) major stages of "solid and liquid soil removal from fabrics/garments in aqueous medium". You may use suitable sketches to support your answer. (15 Marks)

(5) (a) Write comprehensive notes on any two (02) major types of intermolecular forces that can be found in colouration. (08 Marks)

(b) Define the terms "dye affinity" and "dye substantivity". (04 Marks)

(c) Briefly explain why disperse dyeing with "carriers" is not preferred any more in the fabric/garment colouration. (03 Marks)

(6) (a) Briefly explain the concept of "micelle formation" of a detergent. (04 Marks)

(b) Explain the advantages of enzyme washing process over stone washing in industrial garment washing and finishing. (08 Marks)

(c) State why "buffers" are used in enzyme washing. (03 Marks)

(7) (a) Compare and contrast between "sand washing" and "sand blasting" techniques used in fabric/garment abrasion. (07 Marks)

(b) Briefly explain the two (02) main steps of desizing, which are carried out prior to enzyme washing process. (08 Marks)

(8) Write short notes on the followings in relation to textile colouration and finishing.

i. Bio Polishing (05 Marks)

ii. Dip Dyeing (05 Marks)

iii. Drip Dyeing (05 Marks)