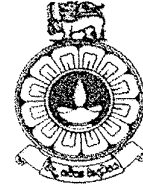


The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Textile and Apparel Technology



Study Programme	: Bachelor of Industrial Studies Honours
Name of the Examination	: Final Examination
Course Code and Title	: TAI4344 Industrial Garments Washing & Finishing
Academic Year	: 2023/2024
Date	: 10 th March 2025
Time	: 1330-1630hrs
Duration	: 3 hours

General Instructions

1. Read all the instructions carefully before answering the questions.
2. This is a Closed Book Test (CBT).
3. Write down your Index Number in all the pages of answer scripts.
4. This question paper consists of Six (06) questions in four (04) pages.
5. Answer five (05) questions only. Each question carries 20 marks
6. Do not write answers to the additional questions.
7. Answers for each question should commence from a new page. If a question has many parts, all the parts should be answered in chronological order under the same question.
8. Write down the answered question numbers on the cover page of the answer book.
9. Answers should be in clear handwriting.
10. Do not use red colour pens to write the answers.

(Q1) (a) (i) Briefly explain the main purposes of Garment washing techniques and Garment finishing techniques used in apparel manufacturing. (04 marks)

(ii) Garment washing and finishing imparts textural, visual and handle effects. Briefly explain how these effects fulfill the following requirements in garments.

(I) Hygienic (II) Easy care and utility characteristics (04 marks)

(b) Briefly explain why denim fabrics are suitable to give worn look by giving abrasion treatment, whereas plain fabrics dyed with reactive dyes are unsuitable for such treatment. (06 marks)

(c) State the purpose of using the following machines/equipment in garment washing & finishing and briefly describe how these machines/equipment fulfill the required purpose.

(I) Destoner (II) Laser robots (III) Sand blasting equipment
(06 marks)

(Q2) (a) Briefly explain how detergents help to improve the wetting of substrate and soil particles. (04 marks)

(b) (i) Briefly explain why following performance requirements of dyes and pigments are important.

(I) Fastness to sea water (II) Fastness to chlorine (04 marks)

(ii) Briefly explain the phenomenon termed as "Affinity" of a dye and describe how it happens during dyeing. (04 marks)

(c) (i) What are the reasons for the excellent wash and light fastness properties of vat dyes? (04 marks)

(ii) What is the purpose of adding NaCl to Sulphur dye bath? (04 marks)

(Q3)(a) Briefly explain the specific properties of following chemical agents used in garment washing and finishing treatments.

(I) Dispersing and Emulsifying Agents (II) Wetting agents (06 marks)

- (b) Briefly explain how Cellulase Enzyme helps in,
(I) Denim washing (II) Stone washing (06 marks)
- (c) (i) Briefly explain how temperature and pH effect on Deactivation of Enzyme action in Garment washing treatments. (04 marks)
- (ii) State any two (02) reasons for using Buffers in Garment washing and finishing treatments. (04 marks)
- (Q4) (a) Briefly explain why it is important to consider followings in garment washing and finishing treatments.
(I) Garment specially prepared by closing pockets
(II) Garments without metal components (06 marks)
- (b) Briefly explain any two (02) disadvantages of stone washing treatment. (06 marks)
- (c) Briefly explain how the following garment finishing treatments are done in the industry for garments and state the finishing effect that can be achieved at the end of **each** finishing treatment.
(I) Grinding (II) Brushing (08 marks)
- (Q5) (a) (i) Briefly explain why "Soft wash" is done on garments in the industry as a washing and finishing treatment. (04 marks)
- (ii) Briefly explain why the "Peach finish" is given to the fabrics and discuss how it is done in the industry. (04 marks)
- (b) Briefly explain why the "Resin finishes" are given to textiles in the industry and give any two (02) such resins along with their expected effects on textiles. (06 marks)
- (c) (i) Briefly explain the "Rinse process" in relation to garment washing. (02 marks)
- (ii) Describe why garments have to be rinsed in the industry. (04 marks)

(Q6) (a) Briefly explain how following finishing treatments are done in the industry and mention the imparted effects on garments.

(I) Heavy destroy wash (II) Monkey wash (04 marks)

(b) Briefly describe the importance of doing "Bio Polishing" treatment and how it is done in the industry. (04 marks)

(c) (i) Briefly explain any three (03) drawbacks associated with garment dyeing against fabric dyeing. (06 marks)

(ii) Briefly describe the procedure and expected effects on garments, when applying following dyeing methods.

(I) Dip dyeing method (II) Tie and Dye method

(III) Drip dyeing method

(06 marks)