



THE OPEN UNIVERSITY OF SRI LANKA
 BACHELOR OF TECHNOLOGY/ INDUSTRIAL STUDIES
 FINAL EXAMINATION– 2013/2014
 TTI5146 – INDUSTRIAL GARMENT WASHING AND FINISHING
 DURATION – THREE HOURS

DATE: 15th August 2014

TIME: 0930 - 1230 HOURS

Total number of questions = 08

Number of questions to be answered = 06

Answer question one (Q1), which is compulsory and five (05) more questions.

Question one (Q1) carries 25 marks and questions two (Q2) to eight (Q8) carry fifteen (15) marks each.

Compulsory Question

- (Q1) (a) Briefly describe the role intermolecular forces in fibres in coloration. (06 marks)
- (b) Briefly explain the performance requirements of dyes and pigments. (06 marks)
- (c) Describe the micelle formation process of detergents in water. (05 marks)
- (d) List eight (08) factors, you should consider when selecting fabrics for garments to be treated by washing. (04 marks)
- (e) What do you understand by the terms “Chromophore” and “Auxochrome” in relation to dyes? (04 marks)

Answer any five (05) from the following seven (07) questions

- (Q2) (a) Briefly explain why garments are washed or finished in apparel manufacturing. (06 marks)
- (b) Classify the garment washing and finishing methods known to you in to three (03) categories. (09 marks)

- (Q3) Solid and liquid soil removal from fabrics/ garments in aqueous medium has three major stages. State and describe each stage in detail. (15 marks)
- (Q4) Write short notes on three (03) dye types you are familiar with. Your answer should include the chemical composition, properties and characteristics, possible applications, limitations etc. (15 marks)
- (Q5) Briefly describe the following agents, which are widely used in garment washing and finishing.
- (a) Wetting agents (03 marks)
 - (b) Emulsifying and dispersing agents (03 marks)
 - (c) Washing agents (03 marks)
 - (d) Fixing agents. (03 marks)
 - (e) Softeners (03 marks)
- (Q6) (a) What are enzymes? (03 marks)
- (b) Briefly explain the action of cellulase on cellulose in garment washing. (05 marks)
- (c) Explain why buffers are used with cellulase in garment washing. (07 marks)
- (Q7) (a) Describe the stone washing process in detail. (07 marks)
- (b) Discuss the disadvantages of stone washing process over the enzyme washing process. (08 marks)
- (Q8) Write short notes on the followings:
- (a) Different methods of garment dyeing (05 marks)
 - (b) Problems of garment dyeing. (05 marks)
 - (c) "Grinding" and "Brushing" processes. (05 marks)