



THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF TEXTILE AND APPAREL TECHNOLOGY

DIPLOMA IN INDUSTRIAL STUDIES

FINAL EXAMINATION – 2005/2006

TTX4232 / TTD2232 – TEXTILE COLOURATION

061

DURATION – THREE HOURS

DATE: 11th March 2006

TIME: 0930 – 1230 hours

Total Number of Questions = 10

Number of questions to be answered = 06

Answer the question 1, which is compulsory and five (05) additional questions.
Question 1 carries twenty five (25) marks and questions 2 to 10 carry fifteen (15) marks each.

01. Compulsory Question

- (a) What are the conditions that are necessary to perform kier boiling?
- (b) What do you understand by the term “Saponification”?
- (c) Write the after-treatment process that should be performed to cotton fabric after bleaching with bleaching powder.
- (d) Name 2 types of oxidizing bleaching agents & 2 types of reducing bleaching agents.
- (e) What are the types of dye employed for wool fibre?
- (f) Name 2 after-treatment processes for direct dyes.
- (g) Write 3 disadvantages of short-liquor dyeing.
- (h) What is the purpose of adding binders to the pigment printing paste?
- (i) What are the main methods of printing available to print textile materials?
- (j) What is an emulsion thickener?

- 02.**
- a) What do you understand by the term “De-sizing”?
 - b) Write 3 types of enzymes that can be used in enzymatic de-sizing.
 - c) Explain how you would carry out the process of enzymatic de-sizing for 100% cotton fabric. State all the conditions used.

03. a) What do you understand by treating fabrics in “Open width form” and “Rope from”?
b) Write 2 types of machines for each category of the above treating methods.
c) Draw a diagram to demonstrate a system, which can perform de-sizing, scouring and bleaching continuously in rope form.
04. a) Explain how detergents remove dirt from textile materials.
b) Give a examples for each of non- ionic type and electrolytic type detergents.
c) What are the advantages of using counter-current washing system?
05. Describe the process of mercerization and point out the qualities acquired by a mercerized cloth.
06. Compare and contrast peroxide bleaching verses hypochorite bleaching. Point out the advantages of each case.
07. Write short notes on the following with respect to textile dyeing:
 - a) Dyeing assistants
 - b) Mordanting
 - c) Thermo-soling
08. a) Briefly explain the principle involved in naphthol dyeing.
b) Explain how you would carry out application of a vat dye on cotton material.
09. a) Write similarities & differences between roller printing machine and relief printing machine.
b) Explain the working principle of rotary screen printing machine.
10. a) List five (5) different printing styles. Explain how you would carry out textile printing using one of the styles.
b) “The alginates are always preferred thickeners in the reactive printing paste”. Explain the reason for this.