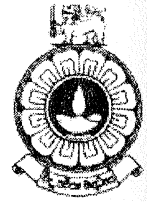


THE OPEN UNIVERSITY OF SRI LANKA
CERTIFICATE IN INDUSTRIAL STUDIES
FINAL EXAMINATION – 2007/2008
TTI2633/ TTC1606 - TEXTILE CHEMICAL PROCESSING
DURATION – THREE HOURS



DATE: 10th May 2008

TIME: 09 30 – 12 30 Ho

Total number of questions = 10

No of questions to be answered = 06

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

01. Compulsory question

(Each part carries 2.5 marks amounting to a total of 25 marks)

- (1). Briefly explain the term “carbonization” of wool.
- (2). What do you understand by “degumming of silk”?
- (3). What is the function of “Optical brightening agent”?
- (4). Mention how you would carry out bleaching of silk.
- (5). Mention any two reasons for carrying out pre-treatment for textile materials.
- (6). Write down three after treatments that can be used for direct dyes to improve fastness properties.
- (7). Write down two chemicals that can be used to convert insoluble vat dyes into soluble state.
- (8). Mention the three main methods employed in polyester dyeing.
- (9). State two general properties of reactive dyes.
- (10). Mention what short liquor dyeing machines and long liquor dyeing machines are.

- 02.** (a) Explain briefly the methods available for desizing?
(b) Draw a diagram of a gas singing machine and explain how singing operation takes place.

03. (a) Explain scouring and bleaching of textiles.
(b) Describe a J – box machine and explain how it is operated to give a combined scour and bleach for a cotton fabric.
04. (a) Enumerate the effects of mercerization and describe how these effects become advantageous.
(b) State briefly how optical brightening agents are applied on cellulose material.
05. Describe the principles of dyeing with a
(a) Basic dye (b) Acid dye (c) Vat dye (d) Azoic dye
Explain the important properties of the above dyes.
06. Explain the purposes of the followings.
(a) Carriers (b) Leveling Agents (c) Mordant (d) Liquor ratio (e) Mangle expression
(f) Reducing agents (g) Organic solvents (h) Dyeing Assistants
07. Describe the salient features in the following printing methods.
(a) Roller printing
(b) Rotary screen printing
(c) Automatic flat screen printing
Also list the similarities and differences of each of these methods.
08. (a) Why do you consider softening and stiffening are important processes of finishing?
(b) Name and describe the principles involved in three drying systems of your own choice used in the Textile Industry.
09. (a) In resin finishing of fabrics what happens during impregnation, drying, baking and washing?
(b) Explain the desirable as well as undesirable qualities imparted during resin finishing of fabrics.
10. (a) Is water repellent fabric preferable to water proofed fabrics for raincoat manufacture? Give reasons to justify your answer.
(b) Why do natural fibres need mildew proof more than synthetic fibres? What are the synthetic fibres that require mildew proofing?