



THE OPEN UNIVERSITY OF SRI LANKA

BACHELOR OF INDUSTRIAL STUDIES

FINAL EXAMINATION – 2009 / 2010

TTI5146 INDUSTRIAL GARMENT WASHING AND FINISHING

DURATION - THREE HOURS

DATE: 12th March 2010

TIME: 0930 – 1230 HOURS

Total Number of Questions = 09

Number of questions to be answered = 06

Answer question 1, which is compulsory and five (05) additional questions.

Question 1 carries twenty-five (30) marks and questions 2 to 09 carry fourteen (14) marks each.

01 Compulsory question

- (a) Two aims of garment washing and finishing are
- to improve easy care and utility characteristics and
 - fashion needs.

State two treatments carried out to achieve each of these aims. (02%)

- (b) What do you understand by MLR? Why is it important for washing processes? (02%)

- (c) State two methods of enzyme deactivation. (02%)

- (d) The inner drums of horizontal drum type washing machines are either completely segmented to radial partitions or have several fins. When do we use the machines with fin-type separations? (02%)

- (e) Why do we need Backing/Curing Ovens for garment finishing? (02%)

- (f) Distinguish between the two terms 'soiling' and 'staining'. (02%)

- (g) Name two types of chromophores available in dyes and pigments. (02%)

- (h) What are "Redox Reactions"? (02%)

- (i) Direct Dyes are so called because they could be directly applied to cellulose. But they have a one major disadvantage. What is it? How can we overcome this problem? (02%)

- (j) What are pigments? (02%)

- (k) What is a wetting agent? (02%)

- (l) State four different types of commonly used softener types. (02%)

- (m) State four different mechanical/physical methods of abrasion employed to achieve intended effects. (02%)

- (n) State four different methods of garment washing/finishing by which chemicals are employed to achieve the intended effects. (02%)
- (o) What is "Bio polishing"? (02%)
- 02. a) Garment washing and finishing processes can be classified according to different criteria. Name three criteria on which such a classification is based. (03%)
- b) Give three different examples each for wet and dry garment washing and finishing processes. (03%)
- c) State six ways of introducing abrasion to garments. (03%)
- d) Explain, why denim is more suitable for abrasion treatments? (05%)
- 03. a) After any garment washing procedure, rinsing has to be carried out. Explain why such a "subsequent rinsing" is an essential part of any washing procedure. (06%)
- b) After rinsing the garment have to be dried. Describe with the aid of suitable line diagrams the operational principles of two machines employed for removal of water by
 - (i) mechanical and
 - (ii) thermal means. (08%)
- 04. Define the following terms with suitable sketches, whenever it is necessary.
 - a) Hydrogen bonds (03%)
 - b) Covalent bonds (03%)
 - c) Roll-back Mechanism (05%)
 - d) Dipole effect (03%)
- 05. a) Distinguish between "simple acid dyes" and "metal complex acid dyes". (05%)
- b) Explain for what types of fibres the acid dyes are used and discuss the fastness properties of fabrics dyed with acid dyes. (09%)
- 06. a) Why disperse dyes are so called? (04%)
- b) Discuss for what types of fibres the disperse dyes are suitable, different methods of application of disperse dyes and the fastness properties of disperse dyed fabrics. (10%)
- 07. a) Describe in-detail the method of "Stone Washing". (07%)
- b) What are the disadvantages of stone washing? (07%)
- 08. a) Explain with the aid of suitable sketches how the inter-molecular bonds in fibres are changed during creasing or bending. (07%)
- b) How can we make the bonds between molecules more permanent? Describe in brief a suitable treatment. (07%)
- 09. Write short Notes on:
 - a) Rinse Wash, (03%)
 - b) Soft Wash, (03%)
 - c) Heavy Destroy Wash, and (04%)
 - d) Anti-soil finishing. (04%)