



THE OPEN UNIVERSITY OF SRI LANKA
 BACHELOR OF INDUSTRIAL STUDIES /
 BACHELOR OF TECHNOLOGY
 FINAL EXAMINATION – 2009 / 2010
 TTX5237 SPECIALTY FABRICS
 DURATION - THREE HOURS

DATE: 26th March 2010

TIME: 1400 – 1700 Hours

Total Number of Questions = 9 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 9 carry fifteen (15) marks each.

01. Compulsory Question

- a) State four (04) fabric properties and characteristics, which influence the comfort of garments made out of them. (02 %)
- b) The term “Jeans” is used to identify a “style” of trousers. However the term “Jean” is used to identify a type of woven fabric. Write down the specifications of Jean fabric. (02 %)
- c) What do you understand by “Skying” as applied in denim weaving? (02 %)
- d) Explain Why the corduroy garments should be protected by a lining? (02 %)
- e) In which direction is corduroy stronger? and Why? (02%)
- f) State two special requirements of pile yarns, used to weave terry fabrics. (02%)
- g) State two well-known methods/mechanisms used to vary the stroke of beat-up during terry weaving? (02 %)
- h) Explain the terms “Top douping” and “Bottom douping” with respect of leno weaving. (02 %)
- i) Why do we need “Easing motions” on leno weaving machines? (02 %)
- j) Explain the main difference between “Axminster” Carpets and “Wilton” Carpets? (02%)
- k) What do you understand by a “Fall Plate Structure”? (02%)
- l) What is a “Plated” fabric? (02%)
- m) What is a partially threaded guide bar?, Explain with the help of a suitable line diagram. (02%)

- n) Illustrate the cross-sectional view on a needle punched fabric to show the fibre arrangement in cross section. (02 %)
- o) What are the most normal methods of web formation for hydro-entangling? (02 %)
02. a) Explain the inherent properties (weaknesses) of indigo dye? (07%)
- b) Explain how the dye bath is prepared and dyeing is carried out in a modern indigo dyeing range.. (07%)
03. a) What is a corduroy fabric? (03%)
- b) State the five different types of corduroy classified according to the number of wales per inch. (03%)
- c) Write short notes on the following with respect to corduroy: (04%)
- (i) Ratio of pile weave to ground weave (04%)
- (ii) Design of pile weave
04. a) Describe the 4-pick terry weave with the help of suitable diagrams. (05%)
- b) Provide a labeled sketch of a terry weaving machine and describe the process of terry weaving. (09%)
05. Explain the structural features of the following carpet fabrics with the aid of suitable diagrams.
- a) In-grain Carpets (03%)
- b) Tufted carpets (04%)
- c) Stitch bonded carpets (04%)
- d) Hand-knotted carpets (03%)
06. a) Explain with suitable sketches how plush and pile fabrics are produced on weft knitting machines. (09%)
- b) What is a "Double Bed Raschels Machine"? (05%)
07. a) Explain with the aid of a suitable sketch how weft knitted in-laid fabrics are produced. (07%)
- b).In-laid fabrics can also be produced by employing warp knitting. Explain how it is done and give two different types of fabrics which can be produced by using this technique. (07%)
08. Describe all the process steps of hydro-entanglement with the help of suitable sketches. (14%)
09. Describe with suitable sketches:
- a) How a multi-layered needle-punched carpet fabric can be manufactured? (05 Marks)
- b) How fibre transfer takes place during needle punching? (05 Marks)
- c) Structure of non-woven composite surgical towels (04 Mark)