



THE OPEN UNIVERSITY OF SRI LANKA
BACHELOR OF INDUSTRIAL STUDIES / **011**
BACHELOR OF TECHNOLOGY
FINAL EXAMINATION – 2006 / 2007
TTX5237 SPECIALTY FABRICS
DURATION - THREE HOURS

DATE: 31 March 2007

TIME: 09.30 – 12.30 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) Write down the constructional details of conventional denim fabric. (02 Marks)
- b) Why denim weaving tends to cause “Unclear Sheds” (shedding traps)? (02 Marks)
- c) Distinguish between “Denim” and “Jean” fabrics. (02 Marks)
- d) State four (04) different classes of corduroy fabrics classified according to the number of wales per unit length. (02 Marks)
- e) State the three methods employed to cut piles of corduroy fabrics. (01 Marks)
- f) What are the precautions to be taken during transport and storage of corduroy? (02 Marks)
- g) What do you understand by “Variable Beat-up” as applied in terry weaving? (02 Marks)
- h) Give a sketch of a plain leno structure and label your sketch to show standing and leno threads. (02 marks)
- i) Name four different mechanisms used for leno weaving. (02 marks)
- j) Distinguish between “Adhesive Bonded” and “Stitch Bonded” pile carpets. (02 Marks)
- k) What do you understand by a “Pile-knit or Sliver-knit” fabric? (02 marks)
- l) What is an “In-laid” structure as applied in warp knitting?. (02 Marks)
- m) State four advantages of hydro-entangled non-woven fabrics. (02 Marks)

02. a) In addition to conventional denim there are other fabrics presently known as "denims". Describe briefly the details of such fabrics. (04 Marks)
- b) What are the inherent properties of "Indigo" dye? (06 Marks)
- c) How can we overcome the disadvantageous inherent properties of "Indigo" dye? (05 Marks)
03. a) Describe briefly the following methods of dyeing used to dye warp yarns for denim:
 (i) Long Chain Dyeing (Rope Dyeing) (08 Marks)
 (ii) Sheet dyeing (Slasher Dyeing) (07 Marks)
- b) Explain, in brief, how denim is finished after weaving. (07 Marks)
04. a) Describe in detail the features and the most important characteristics of corduroy fabrics. (06 Marks)
- b) Explain how different warp and pile yarn interlacements and ground weaves affect the properties of corduroy fabrics. (09 Marks)
05. a) Sketch weave diagrams and cross-sectional views of 4-pick and 5-pick terry fabrics. (08 Marks)
- b) Describe different fibre materials used for terry fabrics, and discuss the suitability of different types of yarns for ground weave and pile structure. (07 Marks)
06. Distinguish between
- Pressed felts, woven felts and needle felts
 - Turkish knot and Persian knot
 - Spool Axminster and Gripper Axminster
 - Double plush weaving and Weaving over wires
- (15 Marks)
07. Explain, how the following knitted pile fabrics are manufactured:
- Wet Plush fabrics
 - Cut pile fabrics by warp knitting
 - Loop pile fabrics by warp knitting
- (15 Marks)
08. Write short notes on the following non-woven applications:
- Disposable wipes
 - Coated artificial leather
 - Filter fabrics
 - Surgical Towels
- (15 Marks)
09. Explain, with the aid of suitable diagrams, the process of hydro-entanglement. (15 Marks)