



THE OPEN UNIVERSITY OF SRI LANKA
 BACHELOR OF INDUSTRIAL STUDIES /
 BACHELOR OF TECHNOLOGY
 FINAL EXAMINATION – 2011 / 2012
 TTX5237 SPECIALTY FABRICS
 DURATION - THREE HOURS

DATE: 16th March 2012

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 thirty (30) marks and questions 2 to 9 carry fourteen (14) marks each.

01. Compulsory Question

- a) What fabric properties or characteristics would affect the fit of a garment with prolonged use? (02 %)
- b) Distinguish between “Rope Dyeing” and “Sheet Dyeing” as applied for dyeing of warps for denim weaving. (02 %)
- c) How is it controlled the amount of stretch of stretch denim? (02 %)
- d) What are the precautions to be taken pressing or ironing of corduroy products? (02 %)
- e) Why is it necessary to have two warp beams for terry weaving? (02%)
- f) What is leno weave? (02%)
- g) What are bonded pile carpets? State two different types. (02 %)
- h) Distinguish between “Gripper Axminster Weaving” and “Spool Axminster Weaving”. (02 %)
- i) State four unfavorable properties/Characteristics of knitted fabrics. (02 %)
- j) Explain how plated fabrics are knitted on warp knitting machines. (02%)
- k) What is an over feed pile structure? (02%)
- l) What is a “Plush Pile” fabric? (02%)
- m) What is Hydro entanglement? (02%)
- n) How can we produce loop pile fabrics through needle punching? (02%)
- O) What is meant by stick-slip character of needle –punched fabrics under tensional loads? (02%)

02. a) Is Denim a fabric for *work-wear* suitable for rigorous working conditions or a fabric more suitable for *fashion-wear*? What is your opinion about the end-use of denim? Explain by giving descriptions about denim fabric construction and development of different varieties of denim fabrics. (14%)
03. a) Explain why weaving machines designed for light-weight fabrics can not be used to weave corduroy fabric? (05%)
 b) Explain how a weaving machine has to be modified to make it suitable for corduroy weaving. (09%)
04. a) Describe the type and properties of yarns usually used for ground warp as well as for pile warp of terry fabrics. (06%)
 b) Provide a labeled sketch of a terry weaving machine and describe the process of terry weaving. (08%)
05. a) Distinguish between Wilton Carpets and Axminster Carpets. (04%)
 b) What are the two methods used to weave Wilton Carpets? Describe one of those methods with the help of suitable labeled sketches. (10%)
06. a) What are in-laid Fabrics? Explain how laying-in is carried out in Single Jersey and Double Jersey weft -knitted fabrics. (07%)
 b) What is a bi-axial in-laid warp knitted fabric? How can they be produced? State the specific properties and applications of such fabrics. (07%)
07. a) Describe how net-structures are produced on warp knitting machines. (07%)
 b) What are spacer fabrics? State a few applications of spacer fabrics and different types of fibre materials used to produce spacer fabrics for such applications. (07%)
08. a) Three essential elements of hydro-entanglement process are Water Pressure, Water Quality, and Volume Flow. Discuss the importance of these three elements. (06%)
 b) Compare the arrangement of fibres in needle punched fabrics with the fibre arrangements in other non-woven products such as adhesive-bonded and stitch-bonded fabrics. (08%)
09. Describe the following non-woven products (in necessary with suitable sketches):
 a) Non-woven leather substitutes. (04 %)
 b) Non-woven surgical towels (04 %)
 c) Needle-punched tennis ball cover. (03 %)
 d) Flat industrial filters (03 %)