



THE OPEN UNIVERSITY OF SRI LANKA
 DEPARTMENT OF TEXTILE AND APPAREL TECHNOLOGY
 BACHELOR OF TECHNOLOGY HONOURS IN
 ENGINEERING / BACHELOR OF INDUSTRIAL STUDIES
 HONOURS

FINAL EXAMINATION – 2016/2017

TTX6263 – SPECIALITY FABRICS

DURATION: THREE HOURS

Date: 02nd December 2017

Time: 0930-1230 hours

Total Number of Questions = 08

Number of questions to be answered = 06

Answer the question 01, which is compulsory and five (05) additional questions.

Question 01 carries twenty five (25) marks and questions 2 to 8 carry fifteen (15) marks each.

01. Compulsory Question.

- (a) List six (06) advantages which make rotor spun yarns more suitable for waving of denim fabrics than conventional ring-spun yarns. (03 Marks)
- (b) Briefly explain the rope-dyeing method used in denim dyeing. (02 Marks)
- (c) Explain the purpose of brushing corduroy fabrics. (02 Marks)
- (d) Illustrate a simple leno weave as used in selvedge formation of a fabric. (02 Marks)
- (e) State the function of easing action employed in leno weaving. (02 Marks)
- (f) Briefly describe the three (03) classes of felt fabrics. (03 Marks)
- (g) State the method of producing carpets by 'Tufting'. (02 Marks)
- (h) Briefly describe how 'cut pile knitted' fabrics are produced on a Raschel machine. (02 Marks)
- (i) What is a 'spacer fabric'? (02 Marks)
- (j) State two (02) advantages of needled paper felts. (02 Marks)
- (k) List three (03) advantages of needle felted blankets. (03 Marks)

End of the compulsory question.

02. a) Briefly discuss the functions of clothing. (05 Marks)
- b) Discuss four (04) properties and characteristics considered, when selecting a fabric for a particular garment. (06 Marks)
- c) List eight (08) characteristics and properties of a fabric that would determine the tailorability of that fabric. (04 Marks)
03. a) Explain the “principle of dyeing” denims with natural Indigo. (03 Marks)
- b) A modern Indigo dye range would consist of 3-6 vats and intermediary skyeing arrangements. Discuss why it is required to have; (04 Marks)
- i. several vats
 - ii. intermediary skyeing arrangements
- c) Explain the importance of ‘pre-skewing’ of denim and how pre-skewing is carried-out as a finishing process. (04 Marks)
- d) List five (05) denim washing methods and describe two (02) of them. (04 Marks)
04. a) Classify corduroy fabrics according to the wale density. (02 Marks)
- b) Explain how the following factors affect the design and quality of a corduroy fabric. (08 Marks)
- i. Design of pile weave
 - ii. Length of weft float
- c) Several modifications in looms are required to use them to weave Corduroy fabrics. Explain why? (05 Marks)
05. a) Explain the basic principle of ‘3-pick’ Terry weaving. (05 Marks)
- b) Illustrate and label the general layout of a Terry weaving loom. (04 Marks)
- c) Briefly explain the two (02) principle methods used to achieve variable beat-up in a Terry weaving loom. (06 Marks)

06. a) Briefly explain how weft knitted plated fabrics are made using suitable illustrations. The answer needs to include the special yarn feeding arrangement used in producing plated structures. (05 Marks)
- b) Explain the construction process of weft-plush fabrics. (06 Marks)
- c) Discuss the advantages of in-laid fabrics. (04 Marks)
07. a) Explain with the help of suitable diagrams how net structures are made in warp knitting. (05 Marks)
- b) Briefly explain the process of manufacturing tubular warp knitted fabrics with two guide bar machines. (06 Marks)
- c) Draw the lapping diagram of a net fabric knitted with 3-guide bar Raschel machine. (04 Marks)
08. a) Explain with the help of suitable illustrations the process of producing non-woven fabrics by hydro-entanglement. (07 Marks)
- b) List six (06) features and properties specific to non-wovens made by hydro-entanglement. (03 Marks)
- c) Discuss the importance of using "quality water" for hydro-entangled non-woven production. (05 Marks)

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