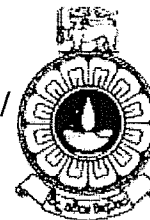


THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF TEXTILE & APPAREL TECHNOLOGY
BACHELOR OF TECHNOLOGY HONOURS IN ENGINEERING/
BACHELOR OF INDUSTRIAL STUDIES HONOURS



FINAL EXAMINATION – 2015/16

TTX5237/TTX6263 – SPECIALTY FABRICS

DURATION: 3 HOURS

DATE: 09th December 2016

TIME: 09.30 – 12.30 hours

Total Number of Questions = 08

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 8 carry fourteen (14) marks each.

01. Compulsory Question

- (a) State three (03) techniques/methods employed to change textile yarns so that the fabrics produced from them have special characteristics. (02Marks)
- (b) Distinguish between “Denim” and “Jean” fabrics. (02Marks)
- (c) State two (02) methods/ techniques used to improve penetration of size into coarse warp yarns used to produce denim fabrics. (02Marks)
- (d) Explain why air-jet looms are more suitable for weaving of light weight denim. (02Marks)
- (e) Though the corduroy fabrics have higher weft density than warp density the warp way tensile strength is higher than the weft way strength. Explain why? (02Marks)
- (f) What is the safer way of removing creases and matted spots from corduroy without ironing? (02Marks)
- (g) Corduroy fabrics can be classified depending on the number of wales per unit length. State four (04) such different classes of corduroy. (02Marks)
- (h) What is “moving fell mechanism” used to weave terry fabrics? (02Marks)
- (i) Sketch a “flat steel doup with an eye” used for leno weaving. (02Marks)
- (j) What is a hand knotted carpet? (02Marks)

- (k) What is weaving over wires (Wire fabric manufacture)? (02Marks)
- (l) What is the difference between “weft plush” and “weft pile” fabrics? (02Marks)
- (m) What is a partially threaded guide bar? (02Marks)
- (n) What is angled needling? (02Marks)
- (o) State two advantages of non-woven shipping bags made out of polypropylene filaments. (02Marks)
02. a) In comparison to other textile dyes, inherent properties of indigo are not very suitable for dyeing. What are these drawbacks? (06Marks)
 b) Describe the process of indigo dyeing explaining how above mentioned drawbacks have been overcome. (08Marks)
03. a) Compare the three (03) terry weaves, three thread, four thread and five thread terry weaves with respect to consumption of pile yarn, pile fastness and cost. (7Marks)
 b) Describe the raw materials used for terry toweling giving details about the fibre material and yarns used for warp, weft and pile. (7Marks)
04. a) Write short notes about the carpet fabrics, Ingrain and Pressed felt. (3Marks)
 b) Distinguish between Wilton and Axminster carpets. (4 Marks)
 c) Describe the method of weaving of double plush fabrics (Face to face weaving) with the aid of a labeled diagram. (7Marks)
05. a) Explain, with the aid of suitable diagrams, the nature of thread movements and the resulting leno structures in “Top Douping” and “Bottom Douping”. (6Marks)
 b) To weave different ornamental leno fabrics with simple flat steel doups, several different modifications can be employed. List four such methods and explain two fabric structures which can be produced by employing two such modifications. (8 Marks)
06. a) What is a plated structure? Explain how yarn feeding is carried out in both weft-knitted and warp-knitted plated structures. (7Marks)
 b) What is a fleecy fabric? Explain how fleecy fabrics are manufactured. (7 Marks)
07. a) What is an in-laid knitted structure? Discuss the purposes of producing in-laid structures. (6 Marks)
 b) Describe how warp knitted and weft knitted inlaid structures are manufactured with the aid of suitable diagrams. (8 Marks)
08. a) What is Hydro-entanglement? Describe the process of hydro-entanglement with the aid of a labeled line diagram. (6 Marks)
 b) Describe with the aid of a suitable labeled sketch how a high strength needle punched blanket can be produced. (5 Marks)
 c) Draw a sketch of a normal punching needle and that of a punching needle used to produce needle punched pile/patterned fabrics. (3 Marks)