



**The Open University of Sri Lanka**  
**Department of Textile and Apparel Technology**  
**Diploma in -Industrial Studies / -Technology**  
**Final Examination-2009/2010**  
**TTX4233-Quality Assurance for Textiles and Clothing**  
**Duration- 3 Hours**

Date:25<sup>th</sup> March 2010

Time:1400-1700hrs

Total number of questions: 08    Total number of questions to be answered=06  
 Answer question 1, which is compulsory, and additional five (05) questions.  
 Question 1 carries twenty five (25) marks and question 02 to 08 carry fifteen (15) marks each.

**Compulsory Question**

**Question 01**

- (a) State any three (03) meanings of quality of a product  
 (3 marks)
- (b) The aim of total quality management is to improve three aspects of an organization. State these three (03) aspects.  
 (3 marks)
- (c) Draw a diagram to show the variations of prevention cost, failure cost, appraisal cost and total quality with the number of defects in a product.  
 (6 marks)
- (d) Give three (03) reasons for testing quality of materials.  
 (3 marks)
- (e) What are the factors that contribute for garment quality?  
 (3 marks)
- (f) Give the important testing conditions, that should be maintained in any testing laboratory.  
 (2 marks)
- (g) Write down two formulae to calculate twist factor in direct-and indirect-methods.  
 (2 marks)
- (h) State three (03) methods of identification of textile fibers.  
 (3 marks)

Answer any five (05) questions from the following seven (07) questions.

**Question 02**

(a) Briefly explain the importance of following for the quality of design of any product.

(i) Quality of market research

(ii) Quality of concept

(iii) Quality of specifications

(You may use a suitable product as an example in answering this question.)

(9 marks)

(b) Differentiate the following techniques that could be used to check the quality of a product.

(i) Quality inspection

(ii) Quality control

(iii) Quality Assurance

(6 marks)

**Question 03**

(a) Give salient features of the following techniques.

(i) In process inspection

(ii) Centralised inspection

(iii) Patrol inspection

(6 marks)

(b) Give possible reasons for following defects found in garment manufacturing process and explain how to avoid those problems.

(i) Cut panels in different sizes

(ii) During cutting a fabric, inside of fabric panels have been cut (inaccurate cutting)

(iii) Cut panels are smaller than the required sizes

(9 marks)

**Question 04**

(a) Give two (02) quality aspects that are to be evaluated for each of the following garment components.

(i) Seams

(ii) Interlinings

(iii) Buttons

(6 marks)

(b) Fabric roll was inspected for quality and found to have the following defects.

The length of the fabric roll = 100 yards

The width of the fabric roll = 45 inches

Defects of 3 inches long or lesser = 4

Defects of over 3 inches but less than 6 inch = 5

Defects of over 6 inches long but less than 9 inch = 5

Defects of over 9 inches = 3

Holes less than 1 inch = 2

Holes over inch = 3

Using the **four point system**, determine whether the fabric roll is up to the quality standard or not.

(9 marks)

#### Question 05

(a) Briefly explain the basic principles involved in three different types of strength measuring techniques.

(6 marks)

(b) In measuring fabric thickness, it should be carried out under specified pressure. Explain why?

(3 marks)

(c) You are provided with following several fabric samples. Suggest most suitable method/s to determine the stiffness of following samples, with giving reasons for each of your suggestions.

(i) 100% cotton fabric samples cut in ware and weft directions

(ii) 100% cotton single jersey knitted fabric samples

(iii) 100% cotton/ spandex interlock fabric samples

(6 marks)

#### Question 06

(a) Explain three (03) types of abrasions possible in garments and explain how they could be possible to occur on garments.

(9 marks)

(b) Briefly explain following methods of dimensional changes.

(i) Relaxation shrinkage

(ii) Swelling shrinkage

(iii) Hygral expansion

(6 marks)

**Question 07**

- (a) Explain how twist affects on the following yarn properties.  
(i) Handle  
(ii) Moisture absorption  
(iii) Aesthetic effect  
(9 marks)
- (b) Reason out how raw material properties for fiber properties and mechanically defective machinery affect on unevenness of a yarn.  
(6 marks)

**Question 08**

- (a) What is fiber fineness? Explain the basic principle involved in measuring fiber fineness using air flow method.  
(6 marks)
- (b) Briefly explain the process of finding staple length of a fiber bundle using comb sorter method.  
(6 marks)
- (c) Explain any three (03) problems possible to arise due to immaturity of cotton fibers.  
(3 marks)