

ADVANCED DIPLOMA IN KNITWEAR STUDIES AND MERCHANDISING
ADVANCED DIPLOMA IN APPAREL STUDIES AND MERCHANDISING

Examination Paper

2nd Term 2014

Module Name: Textile Materials and Evaluation

Module Code: 326

Date: 15 Sep 2014

Time Allowed: 3 hours

Reading Time: 15 minutes

Examination Time: 7:15pm – 10:15pm

This question paper has 5 pages (including this page).

INSTRUCTION TO CANDIDATES:

- This paper has **EIGHT (8)** questions, with 5 questions in Section A, and 3 questions in Section B.
 - **Question 1 in Section A is compulsory**, and answer at least one other question in Section A.
 - Answer at least one question in Section B.
 - You are required to answer **FIVE (5)** questions in total.
 - All questions carry equal marks.
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The following tools with an asterisk (*) are **NOT ALLOWED** in the examination:

- Paperback Dictionary *
- Electronic Dictionary *
- Open Book Examination Material *
- Programmable Calculator *

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO

Section A

Question 1 to Question 5

Question 1 is compulsory.

Answer at least ONE questions from Question 2 to 5

Question 1

Question 1 (Compulsory, answer all multiple choice questions in Question 1. Please write down the question number and the letter (in Capital) of the correct answer together on one page of the answer book. (10% per answer, total 100%)

1. A yarn's cotton count is 40's, what is its yarn count in Denier?
 - A. 208.6 Den.
 - B. 166.2 Den.
 - C. 132.8 Den.
 - D. 176.3 Den.

2. Which one of the following fibres is having the highest abrasion resistance?
 - A. Cotton
 - B. Silk
 - C. Rayon
 - D. Polyester

3. Which one below is the method of producing bulky textured yarns?
 - A. Gear crimping
 - B. Knife edge
 - C. Stuffer box
 - D. False twist

4. Which is NOT the objective of producing plied yarns?
 - A. Increase strength
 - B. Improve softness
 - C. Improve smoothness
 - D. Improve quality

5. If 3 individual filament yarns, each of which is 34,500 meter and 230 gm, what is the equivalent yarn number in Denier when they plied together?
 - A. 20 Den.
 - B. 30 Den.
 - C. 180 Den.
 - D. 190 Den.



6. Which one of the following fibers is thermoplastic?
- A. cotton
 - B. flax
 - C. polyester
 - D. rayon
7. Which one of the following fiber does NOT loose strength when wet?
- A. Silk
 - B. Wool
 - C. Rayon
 - D. Flax
8. If a yarn has a length of 32,000 yd., weighs 0.72 lb., what is the yarn number in Cotton count (Ne)?
- A. 30.5 Ne
 - B. 63 Ne
 - C. 52.9 Ne
 - D. 40.5 Ne
9. What is NOT the advantage of open-end spinning?
- A. Faster production
 - B. Increased strength
 - C. Better yarn uniformity
 - D. Improved absorption of colors
10. The residue of burning Flax fibre is:
- A. Hard bead
 - B. Hollow bead
 - C. Ash
 - D. Solution

Question 2

- (a) Briefly describe and compare the spinning processes (with flow chart) of the following 2 types of yarns. **(70 %)**
- i. Ring Spun Carded yarns
 - ii. Combed yarns.
- (b) Describe the advantages and disadvantages of each type of the above two yarns? **(30 %)**

Question 3

- (a) Draw the simple yarn path diagram the knitting construction of the following three basic knitted fabrics and describe briefly their characteristics: **(60 %)**
- i. Single jersey (15%)
 - ii. 2x2 Rib (20%)
 - iii. Interlock (25%)
- (b) Draw the simple yarn path diagram of the following two basic knitted stitches. Briefly describe briefly their characteristics and give examples of fabrics using these stitches. **(40 %)**
- i. Tuck stitch (20%)
 - ii. Miss stitch (20%)

Question 4

- (a) Describe the basic weaving motions with simple sketches. **(50 %)**
- (b) Describe any two weft insertion methods, and explain their advantages and disadvantages. **(40 %)**
- (c) Compare the advantages of woven fabrics over knitted fabrics. **(10 %)**

Question 5

- (a) Suppose you are the manager of a garment factory producing outdoor sport casual wears for hot wet summer time, suggest a type of fibres (or blend of fibres) that you think is the most suitable. Based on the functions required for these types of garments, explain the reasons of your choice. **(40 %)**
- (b) If you are also responsible for the quality of the garments, define with reasons, any 3 major tests that you think are necessary to ensure customers satisfaction. Briefly describe the processes of each test. **(60 %)**

Section B

Question 6 to Question 8

Answer at least ONE questions from Question 6 to 8

Question 6

- (a) Preparation of a loom-static cotton fabric for coloration and finishing requires five (50 %) individual processes after fabric inspection and joining;
- Identify these processes of preparation; (25%)
 - Briefly describe the purpose of each of these processes (25%)
- (b) Explain the term “double-mercerized” cotton knit from raw cotton yarn. (50 %)

Question 7

You are associated with a textile and clothing company manufacturing children’s knit goods of woollen, acylic, cotton, polyester and polyester/cotton blend, the company does all yarn and fabric dyeing:

- (a) What dye classes are purchased by the company for all the various fibres used? (20 %)
- (b) What yarn dyeing machines are used to dye which types of yarn; (20 %)
- (c) What fabric dyeing machines are used to dye the knit goods of 100% cotton and of polyester/cotton blend. (20 %)
- (d) Identify five necessary colourfastness tests for the European markets. (40 %)

Question 8

Both dyes and pigments are used in textile printing:

- (a) Identify three characteristics differentiating a dye from a pigment; (15 %)
- (b) Describe the steps in printing using a dye-containing print paste; (20 %)
- (c) Identify the ingredients of a print paste containing pigment; (22 %)
- (d) Briefly compare the processes of discharge and resist printing (43 %)