



1st SEM. 2014/2015

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN
TEXTILE, APPAREL DESIGN AND
MANAGEMENT YEAR IV**

COURSE CODE : TADM 404

TITLE OF PAPER : CONTEMPORARY TEXTILES

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTION : ANSWER QUESTION ONE (1) AND
ANY OTHER TWO (2) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 (COMPULSORY)

a) Define the following:

- i) Nanotechnology
- ii) Emerging textile technology
- iii) Textile innovation
- iv) Performance finishes

(4 X 2 = 8 Marks)

b) Identify the positive and negative impact of nanotechnology on textiles for the consumer and the environment. Record your answers in the table below.

	Impact on the consumer	Impact on the environment
Positive impact		
Negative impact		

(2 X 5 = 10 Marks)

c) Textile innovation has led to the emergence of a wide range of high performance functional textiles in the different facets of the textile wheel. Under any **two (2)** subheadings of your choice from the list below, give one example of a textile, its specific performance/function and benefit to the consumer/end use application. Tabulate your answer as shown below.

- i) Medical textiles
- ii) Civil engineering textiles
- iii) Contemporary apparel textiles
- iv) Textiles in architecture
- v) Technical textiles used in food

Textile subheading	Textile example	Textile performance/function	Benefit to the consumer

(2 X 5 = 10 Marks)

- d) Metal matrix composites (MMC) manufacturing can be broken into three types or methods i.e. solid, liquid, and vapour. Under each method give one example of manufacturing technique and how it is achieved.

(3 X 4 = 12 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- a) How can the use of blended fibres and/or yarns produce a fabric with enhanced properties for specific end-use applications? Use examples in your response.
(5 Marks)
- b) What type of yarn consists of filaments coextruded from more than one polymer? Explain **two (2)** ways in which this can be achieved.
(1 + 6 = 7 Marks)
- c) Justify why the *Nano-Tex* shirt is an example of a textile innovation.
(3 Marks)
- d) Compare and contrast the properties of a 100% cotton shirt and the *Nano-Tex* shirt.
(10 Marks)
- e) How can the properties of microfibrils enhance the performance of textile items? Use an example in your response.
(5 Marks)

[TOTAL MARKS = 30]

QUESTION 3

- a) Fully explain the role of the following textile considerations in the traffic police women's uniform.

- i) Reflective tape –jacket and the front hat logo
- ii) Fluorescent nylon - jacket
- iii) Polyester/cotton non-iron fabric – shirt or trousers
- iv) Stain resistant fabric with heat set crease - trousers

(4 X 4 = 16 Marks)

- b) A manufacturer chooses bamboo fibre over cotton fibres for the production of t-shirts. Justify this fibre choice by demonstrating the advantages of growing bamboo fibre?

(6 Marks)

- c) Most bicomponent filament yarns are made to provide stretch or crimp to the fabric. Explain how the crimp can be created and suggest **two (2)** possible end uses of such yarns

(8 Marks)

[TOTAL MARKS = 30]

QUESTION 4

- a) The lounge covers in a hotel lobby have been re-upholstered with 100% cotton pile weave fabric. From the four listed below, choose the **one (1)** most appropriate finish combination that should be applied to the fabric to best meet the hotel's serviceability and safety requirements? Justify your answer.

- i) Soil resistant and fire retardant
- ii) Water repellent and soil resistant
- iii) Abrasion resistant and soil resistant
- iv) Abrasion resistant and fire retardant

(4 Marks)

TADM 404 (M)

- b) Of the four listed below, which one represents the major pollution concerns in the Swaziland textile dyeing industry, and justify your choice.

- i) Industrial noise and contaminated land
- ii) Hazardous chemicals and contaminated land
- iii) Hazardous chemicals and waste water management
- iv) Industrial noise and waste water management

(7 Marks)

- c) Explain what washable webs are and why they have a wide range of applications citing one end use.

(3 Marks)

- d) A number of issues associated with high performance textiles have emerged and are a cause for concern. Choose any **three (3)** subheadings from below and under each, briefly discuss the concerns or issues associated with high performance textiles.

- i) Health issues
- ii) Environmental issues
- iii) Ethical issues
- iv) Legal issues

(3 X 4=12 Marks)

- e) Explain why composites materials are preferred over contemporary metallic materials.

(4 Marks)

[TOTAL MARKS = 30]