UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME	:	**BACH ELOR OF SCIENCE IN TEXTILE, APPAREL DESIGN AND MANAGEMENT & CONSUMER SCIENCE EDUCATION YEAR II**
COURSE CODE	:	**TADM 205**
TITLE OF PAPER	:	**TEXTILE SCIENCE AND LAUNDRY**
TIME ALLOWED	:	**TWO (2) HOURS**
INSTRUCTION	:	**ANSWER QUESTIONS ONE (1) AND ANY OTHER TWO (2) QUESTIONS**

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR

QUESTION 1 (COMPULSORY)

Section A

a) Considering that nylon has the highest moisture regain of all the synthetic fibres, identify the moisture regain (%) of nylon 6 fibre and nylon 6,6 fibres respectively in the list below.

i) 2.0 – 3.0
ii) 2.8 – 5.0
iii) 3.5 – 4.5
iv) 4.0 – 4.5

(4 Marks)

b) How does the tensile strength of cotton fibres change with the increase in relative humidity from 0 – 100%? Choose the correct answer from the list below and justify your choice.

i) Modulus and strength increase, extensibility decreases
ii) Modulus decreases, strength and extensibility increase
iii) Modulus and strength decrease, extensibility increases

(2 + 5 = 7 Marks)

Section B

c) Describe **three (3)** stages at which colour/dye can be applied on textile products and state an advantage of each stage.

(3 X 3 = 9 Marks)

d) State **four (4)** reasons that lead to the development of synthetic fibres.

(8 Marks)

e) Describe **one (1)** method of fabric construction.

(2 Marks)

f) Give **three (3)** points to demonstrate the difference between wild silk and cultivated silk.

(6 Marks)

Section C

g) Match the elements in group 1with those in group 2.

GROUP 1	GROUP 2
i) Polyester fibres	i) Melt spinning
ii) Acrylic fibres	ii) Dry spinning
iii) Nylon fibres	iii) Wet spinning
iv) Viscose rayon fibres	iv) Xanthation
	v) Drawing
	vi) Coagulation

(4 Marks)

[TOTAL MARKS = 40]

QUESTION 2

a) Give **one (1)** man-made cellulosic fibre which is similar to cotton in character and **one (1)** reason for the similarity in character.

(4 Marks)

b) Support your answer in (a) by stating **two (2)** properties that are common to cotton and the man-made cellulosic fibre.

(4 Marks)

c) To remove an oil stain from a polyester skirt, a housewife boils the skirt in soapy water. Explain what will happen to the physical appearance of the skirt and how you can advise the housewife to rectify the problem. Justify your answer based on the properties of the polyester fibre

(2 + 2 = 4 Marks)

d) Compare and contrast cellulosic fibres and protein fibres under the following themes. Tabulate your answer.

i) Elasticity (resilience)
ii) Heat tolerance
iii) Electrostatic charge

(3 X 4 = 12 Marks)

e) Fully outline the manufacture of any **one (1)** of the following man-made fibres

i) Polyester
ii) Nylon
iii) Acrylic

(6 Marks)

TOTAL MARKS = 30]

QUESTION 3

a) Differentiate between amorphous and crystalline areas of fibre polymers. Give **one (1)** advantage of each area.

(4 + 2 = 6 Marks)

b) Define the following terms.

i) Yarn
ii) Detergent
iii) Tensile strength
iv) Blend
v) Yarn twist

(10 Marks)

c) There are different types of yarns manufactured for various end uses. Compare and contrast any **two (2)** types of yarns

(6 Marks)

d) Water is the main cleaning agent used in laundry work. Name **two (2)** types of water and their properties.

(2 + 6 = 8 Marks)

[TOTAL MARKS = 30]

QUESTION 4

a) As a textile scientist you have been commissioned to advise the administrative staff at FNB who wear white silk shirts to work as part of their work wear on how to launder their shirts. Based on the properties of silk fibres, discuss the effects of the following:

i) Soaking/extended exposure to water
ii) Alkaline solutions and oxidising agents
iii) Exposure to high heat e.g. very hot iron
iv) Hanging on the line

(4 X 4 = 16 Marks)

b) In **three (3)** points explain why you would advise a textile manufacturer to consider producing mixtures and blends. Support your answer with examples.

(3 X 4 = 12 Marks)

c) It is advisable to remove the sericin from silk fibres at fabric stage. Justify this statement

(2 Marks)

[TOTAL MARKS = 30]