1ST SEM. 2017/18

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME : BACHELOR OF SCIENCE IN TEXTILE APPAREL DESIGN AND MANAGEMENT YEAR II

COURSE CODE : TAD205

TITLE OF PAPER : TEXTILE SCIENCE

TIME ALLOWED : TWO (2) HOURS

INSTRUCTIONS : ANSWER QUESTION ONE (1)

AND ANY OTHER TWO (2) QUESTIONS

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QUESTION 1(COMPULSORY)

a) Classify natural fibres according to their type giving an example for each class **(15 Marks)**

b) With the aid of a diagram describe the cross sectional and longitudinal forms of the following fibres **(6 Marks)**
   i. Wool
   ii. Silk

c) Describe the behaviour of the following fibres in the given solvents **(15 Marks)**

Fibre	Sulphuric acid (70%)	Acetone (100%)	Chlorine bleach (5%)	Formic acid (90%)	Hydrochloric acid (20%)
Cotton					
Silk					
Polyester					

d) Name **four (4)** desirable characteristics in textile fibres **(4 Marks)**

[TOTAL MARKS= 40]

QUESTION 2

a) Use a diagram to show the structural elements of a woven fabric **(6 Marks)**

b) Briefly explain how texturing leads to improved comfort and aesthetics of fabrics and yarns **(10 Marks)**

c) Briefly describe any **three (3)** fancy yarns of your choice **(9 Marks)**

d) List **five (5)** objectives of plying yarn **(5 Marks)**

[TOTAL MARKS = 30]

QUESTION 3

a) Briefly describe the sub microscopic structure of wool fibres **(10 Marks)**

b) Explain the effect of moisture on the tenacity of wool fibres **(5 Marks)**

c) Suppose you have two cotton yarns, A and B. The count of yarn A is 10 tex, and that of yarn B is 10 Ne. Which yarn is a thicker one? You need to justify your answer via proper count conversions **(6 Marks)**

d) Name and describe the **two (2)** types of rib woven fabrics **(6 Marks)**

e) Define fancy yarns **(3 Marks)**

[TOTAL MARKS =30]

QUESTION 4

a) Name and with the aid of a diagram describe a spinning method suitable for the production of nylon fibres **(10 Marks)**

b) Name five differences between woven and knitted fabrics **(10 Marks)**

c) Discuss open end yarns **(10 Marks)**

[TOTAL MARKS = 30]

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RESIT EXAMINATION PAPER

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TITLE OF PAPER : TEXTILE SCIENCE

TIME ALLOWED : TWO (2) HOURS

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AND ANY OTHER TWO (2) QUESTIONS

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QUESTION 1 (COMPULSORY)

a) Explain the different yarn numbering systems and give an example for each system **(8 Marks)**

b) Describe the behaviour of linen and wool during the burning test under the following headings **(10 Marks)**

Behaviour up-to flame	Behaviour in flame	Behaviour once removed from flame	Odour	Type of residue

c) Briefly describe the chemical behaviour of cotton fibres **(6 Marks)**

d) Give a detailed description of the production process of viscose rayon **(16 Marks)**

[TOTAL MARKS = 40]

QUESTION 2

a) Describe any **three (3)** performance characteristics of knitted fabrics **(9 Marks)**

b) Name and briefly describe the **four (4)** basic weft knitted structures **(12 Marks)**

c) Briefly describe any **three (3)** non-woven fabrics **(9 Marks)**

[TOTAL MARKS = 30]

QUESTION 3

a) With the aid of a diagram describe wet spinning and give two **(2)** key requirements for the spinning process **(10 Marks)**

b) Briefly describe the silk production process **(15 Marks)**

c) List any **five (5)** properties of silk fibres **(5 Marks)**

[TOTAL MARKS = 30]

QUESTION 4

a) Name and briefly discuss any five properties of cotton **(15 Marks)**

b) Give a detailed description of how flax is processed into fibres **(15 Marks)**

[TOTAL MARKS = 30]