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) Give a detailed description of the Viscose process used in the production of Viscose Rayon filaments

(20 Marks)

b) In one of your practical sessions you performed a burning test on cotton and polyester fibres .What were your observations with regards to the behaviour of the fibres in terms of :
  i. Odour
  ii. Residue
  iii. When fibre was approaching the flame
  iv. When in flame
  v. When removed from the flame

(10 Marks)

c) Explain the basic principle used in manufacturing of man-made fibres (8 Marks)

d) Describe the molecular configuration of Nylon fibres (2 Marks)

[TOTAL MARKS= 40]

QUESTION 2

a) Describe the effect of moisture on wool fibre tensile properties. (6 Marks)

b) Explain the effect of yarn twist on the following yarn properties
  i. Strength
  ii. Handle
  iii. Moisture absorption
  iv. Wearing properties
  v. Elasticity

(10 Marks)

c) Give a detailed description of how flax fibres are produced. (10 Marks)

d) Briefly describe air jet spun yarns. (4 Marks)

[TOTAL MARKS = 30]

QUESTION 3

a) A skein of 26,880 yards weighs 1 pound, calculate its Cotton count and Metric equivalent

(6 Marks)

b) With the aid of a diagram show the cross-sectional shape and longitudinal form of cotton fibres

(4 Marks)

c) List and discuss five (5) properties of cotton that make it suitable for clothing

(10 Marks)

d) With the aid of a diagram, explain the wet and dry spinning processes (10 Marks)

[TOTAL MARKS =30]

QUESTION 4

a) Suppose you have two cotton yarns. The count of yarn A is 20 tex, and that of yarn B is 20 Ne. Which of the two yarns is thicker and why? **(6 Marks)**

b) List **four (4)** properties of silk fibres. **(4 Marks)**

c) With the aid of a diagram show the structural elements of a woven fabric. **(8 Marks)**

d) Differentiate between woven and knitted fabrics. **(12 Marks)**

[TOTAL MARKS = 30]