UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME   :   **BACHELOR 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 QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS**

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QUESTION 1 [COMPULSORY]

a) Describe the **two (2)** processes of retting flax and state which of the two processes is environmentally friendly and why.

(8 + 2 = 10 Marks)

b) Illustrate the physical and chemical structure of a silk fibre.

(4 + 4 = 8 Marks)

c) In one of the practical sessions in the textile science laboratory, you did a burning test for cotton fibres and woollen fibres. What were your observations with regards to the behaviour of the fibres in terms of:

i) Odour
ii) Residue
iii) When approaching the flame
iv) When in the flame
v) When removed from the flame

(5 X 2 = 10 Marks)

d) How do the physical properties affect the performance of fabric made from the following fibres?

i) Wool
ii) Cotton

(2 X 6 = 12 Marks)

[TOTAL MARKS = 40]

QUESTION 2

a) Polyamides are linear macromolecules containing amide groups at regular intervals. To demonstrate this, illustrate the structure of a unit of nylon 6.6

(4 Marks)

b) Explain how different types of polyamides are made and give an example of **two (2)** different polyamides explaining how they are different from each other.

(2 + 4 = 6 Marks)

c) Give **two (2)** points to demonstrate the difference between raw silk and cultivated silk

(2 X 2 = 4 Marks)

d) Cellulosic man-made fibres are made from natural cellulose polymers extracted from plants. To enable the spinning process, fully describe **four (4)** different processes that can be employed to make the solution

(4 X 4 = 16 Marks)

[TOTAL MARKS = 30]

QUESTION 3

a) As a textile scientist, you have been commissioned to advise apparel manufacturers on the most suitable fabric/fibre to use for the following. Justify your fabric choices based on the properties of the fibres.

i. Bath towels
ii. A permanently pleated skirt
iii. Sports gear for the national team
iv. Blue work suit for a motor mechanic
v. Protective clothing worn by firemen
vi. Drapes
vii. Warm and absorbent underwear
viii. Children's wear
ix. Hotel bed linen

(9 X 3 = 27 Marks)

b) How has taking this course influenced your fabric choices for a specific end use. Give an example to illustrate your answer.

(3 Marks)

[TOTAL MARKS = 30]

QUESTION 4

a) Explain how you would remove each of the following stains and the reagents you would use.
i) Grass
ii) Blood
iii) Ink
iv) Coffee

(4 X 3 = 12 Marks)

b) Classify stains in laundry into **four (4)** groups and give examples of each grouping.

(4 X 2 = 8 Marks)

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

(2 X 3 = 6 Marks)

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

(4 Marks)

[TOTAL MARKS = 30]