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2ND SEM. 2009/2010

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME : **BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION & TECHNOLOGY YEAR II**

COURSE CODE : **FSNT 206**

TITLE OF PAPER : **FOOD CHEMISTRY**

TIME ALLOWED : **TWO (2) HOURS**

INSTRUCTIONS : **ANSWER QUESTION ONE (1) AND ANY OTHER (3) QUESTIONS**

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QUESTION 1 [COMPULSORY]

a. Discuss how the molecular structure of water makes it a good solvent. (8 marks)

b. What are emulsifiers and what are their uses in food systems? (8 marks)

c. What is the difference between Maillard reactions and caramelization? (8 marks)

d. Discuss the term: limiting amino acid (8 marks)

e. What makes overripe fruit unsuitable for jam making? (8 marks)

[TOTAL MARKS = 40]

QUESTION 2

a) Some glucose polysaccharides are digestible by human enzymes while others are not. Discuss the causes of the differences citing examples as necessary

(12 Marks)

b) What is the difference between crude fibre and soluble fibre?

(8 Marks)

[TOTAL MARKS = 20]

QUESTION 3

a) What do you understand by the term essential fatty acid in human nutrition?

(10 Marks)

b) Discuss the factors that affect the melting point of fats

(10 Marks)

[TOTAL MARKS = 20]

QUESTION 4

a. Define primary, secondary, and tertiary structures of protein.

(12 marks)

b. A student accidentally added a drop of papain, a protein digesting enzyme, to a protein solution. Which of the three structures was immediately affected and in which ways?

(8 marks)

[TOTAL MARKS = 20]

QUESTION 5

A customer wanted to find the degree of ripeness of bananas by pressing but the vendor (seller) was resistant to the practice. Discuss the scientific basis of the actions of both the customer and the vendor.

[TOTAL MARKS = 20]