

2ND SEM. 2008/2009



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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN FOOD
SCIENCE, NUTRITION AND
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 (2) QUESTIONS**

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

QUESTION 1 [COMPULSORY]

- a. What is the difference between Maillard reactions and caramelization and which of the two reactions can make amino acids unavailable?
(10 marks)
- b. What do you understand by the primary and secondary structure of protein?
(10 marks)
- c. Discuss how the chemical properties of a good emulsifier and its role in food dispersion systems?
(10 marks)
- d. Discuss the structure of a water molecule influences hydrogen bonding in aqueous solutions
(10 marks)

[TOTAL MARKS = 40]

QUESTION 2

- a) Some people are lactose intolerant. Discuss the problem and show how it affects such people after ingestion of milk.
(15 Marks)
- b) Pectin, cellulose and lignin are grouped together as part of fibre in foods. What are their chemical differences?
(15 Marks)

[TOTAL MARKS = 30]

QUESTION 3

- a) Discuss the effects of hydrogenation process on the structure and properties of fats and oils.
(15 Marks)
- b) Explain the term essential fatty acid and give an example and characteristics of two such acids
(15 Marks)

[TOTAL MARKS = 30]

QUESTION 4

- a. Why do some fruits turn yellowish and others purplish during ripening?
(8 Marks)
- b. Discuss two major causes of post harvest deterioration in fruits and vegetables.
(12 Marks)
- c. Describe to positive changes that occur in fruits during ripening
(10 Marks)

[TOTAL MARKS = 30]