



2ND SEM. 2011/2012

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 (2) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 [COMPULSORY]

- a. Define primary and tertiary structure of protein. [8 marks]
- b. Differentiate between "iodine value" and "saponification value". [8 marks]
- c. What is the role of an emulsifier in food systems? [8 marks]
- d. Milk was heated at 120° C for 10 minutes and it turned brownish. Give two possible reactions that could have caused the browning colouration. [8 marks]
- e. Discuss the role of hydrogen bonding in aqueous solutions. [8 marks]

[TOTAL MARKS = 40]**QUESTION 2**

- a) Discuss the conditions that favour Maillard reactions and give at least three negative effects of the reactions. [20 Marks]
- b) Starch can be digested by alpha amylase while cellulose is not digestible. What is the cause of the difference in digestibility? (10 Marks)

[TOTAL MARKS = 30]**QUESTION 3**

- a) Discuss the importance of fat in the human diet. [15 Marks]
- b) What do you understand by the term essential fatty acid? [6 Marks]
- c) Define hydrogenation as it refers to oil and give one advantage and two disadvantages of the process. [9 marks]

[TOTAL MARKS = 30]**QUESTION 4**

- a. Discuss the major causes of post harvest deterioration in fruits and vegetables. [12 Marks]
- b. When a potato is cut, the cut surface is likely to turn brown. What is the difference between this browning and the browning observed in fried potato chips? [8 Marks]
- c. Pectin is a good gelling agent. Explain how this happens and its application in food processing. (10 marks)

[TOTAL MARKS = 30]