2ND SEM. 2010/11

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME	:	**BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION & TECHNOLOGY YEAR III**
COURSE CODE	:	**FSNT 307**
TITLE OF PAPER	:	**FOOD NUTRIENT ANALYSIS**
TIME ALLOWED	:	**TWO (2) HOURS**
INSTRUCTIONS	:	**ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS**

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QUESTION ONE [COMPULSORY]

a. One compound has maximum absorbance at 300 nm wavelength and another one at 720 nm wavelength. With proper justification, show which of the two compounds exhibits a higher energy transition?

(10 Marks)

b. Draw clearly labelled typical graphs of alkali against pH during the titration of two weak acids, one having one pKa value and the other with two pKa values.

(10 Marks)

c. Discuss the principles of crude fibre analysis.

(10 Marks)

d. Give the safety precautions that you need to take when working in a chemical food· analysis laboratory'

(10 marks)

[TOTAL MARKS = 40]

QUESTION TWO

a. Discuss the importance of proper sampling in food analysis.

(15 Marks)

b. Discuss five possible sources of errors during the determination of ash content of meat and measures you would take to minimize them.

(15 Marks)

[TOTAL MARKS = 30]

QUESTION THREE

a) Give the main principles of separation in ion exchange chromatography, size exclusion chromatography and partition chromatography.

(15 Marks)

b) Discuss ways of using paper chromatography to identify and quantitatively determine a food constituent.

(15 Marks)

[TOTAL MARKS = 30]

QUESTION FOUR

a. In many food analysis reports, concentration of constituents is expressed on a dry weight basis. Discuss the importance of this trend.

(10 Marks)

b. A food sample had a moisture content of 30% and a protein content of 28%. Calculate the protein content on a dry weight basis.

(10 Marks)

c. Discuss the limitations of moisture determination by the oven drying method.

(10 Marks)

[TOTAL MARKS = 30]