UNIVERSITY OF SWAZILAND

FINAL EXAMINATION

PROGRAMME	:	**BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION & TECHNOLOGY YEAR IV**
COURSE CODE	:	**FSNT 401**
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 1 (COMPULSORY)

a) Why is it advisable to express results of food analysis on dry matter basis? A cassava variety has a moisture content of 62% and starch content of 30%. Calculate the starch content on a dry matter basis. (10)

b) Fat 'Á' has a higher percentage of polyunsaturated fatty acids than fat 'B'. Which one of the two has a higher oxidative stability and which one has a higher iodine value? (10)

c) Draw a typical graph of alkali against pH during the titration of two organic acids one with one and the other with two pKa values. (10)

d) What are the limitations of protein determination using the Kjeldahl method? (10)

(TOTAL MARKS 40)

QUESTION 2

a) What are the differences between the particulate theory and the wave theory of electromagnetic radiation and how does each find application in food analysis? (20)

b) Briefly describe the principles of fluorescence spectroscopy, citing appropriate examples. (10)

(TOTAL MARKS 30)

QUESTION 3

a) Discuss possible sources of errors in food analysis. (20)

b) What do you understand by vendors' risk and consumer risk in acceptance food sampling? (10)

(TOTAL MARKS 30)

QUESTION 4

a) Discuss two principles of separation in column chromatography (12)

b) Briefly discuss how to identify and quantify a compound using gas chromatography. (12)

c) Give two methods that can be used to quantify a compound in paper chromatography. (6)

(TOTAL MARKS 30)