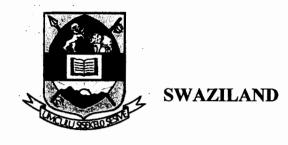
2ND SEM. 2011/2012

UNIVERSITY OF



FINAL EXAMINATION

:

PROGRAMME

BACHELOR OF SCIENCE IN FOOD

SCIENCE, NUTRITION & TECHNOLOGY YEAR III

COURSE CODE

FSNT 307/401

TITLE OF PAPER

FOOD NUTRIENT ANALYSIS

TIME ALLOWED

TWO (2) HOURS

INSTRUCTIONS

ANSWER QUESTION ONE

AND ANY OTHER TWO (2)

QUESTIONS

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QUESTION 1 [COMPULSORY]

- a) Draw two labelled typical graphs of alkali against pH during the titration of two fruit juices, one with one pK_a and the other with two pK_a values. (10 marks)
- b) The percentage of nitrogen in a given protein is 12.5%. Calculate the conversion factor for use in Kjeldahl protein analysis procedure. (10 marks)
- c) A food sample had a moisture content of 40% and a fat content of 30%. Calculate the fat content on a dry weight basis. (10 marks)
- d) Describe the principles of hydrometry and give two examples of its use in food analysis. (10 marks)

[TOTAL MARKS = 40]

QUESTION 2

- a) One compound has maximum absorbance at wavelength of 540 nm and another one at 450 nm. With proper justification, show which of the two compounds exhibits a higher energy transition (10 marks)
- b) Briefly describe the principles of fluorescence spectroscopy. (10 marks)
- c) Explain the relationship between Transmittance and Absorbance. (10 marks)

[TOTAL MARKS = 30]

QUESTION 3

Discuss five possible sources of errors during food analysis and measures you would take to minimize them.

[TOTAL MARKS = 30]

QUESTION 4

- a) What is the difference between the principles of separation in ion exchange chromatography and electrophoresis? (10 marks)
- b) How can thin layer chromatography be used in identifying and estimating the amount of a compound in a food sample? (10 marks)
- c) Discuss one difference and one similarity between gas chromatogram and a
 HPLC chromatogram. (10 marks)

[TOTAL MARKS = 30]