



1ST SEM. 2012/13

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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 201

TITLE OF PAPER : FOOD SCIENCE

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1) AND
ANY OTHER TWO (2) QUESTIONS**

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CHIEF INVIGILATOR**

QUESTION 1 (COMPULSORY)

Food constituents function in a variety of ways in food systems to give us products with desirable gastronomic (organoleptic) quality attributes and nutrition.

- (a) Identify and explain the function of sugar (sucrose) in different baked products specifically cakes, scones and breads. (6 Marks)
- (b) Identify and explain the role and function(s) of proteins in the following food systems.
- i) Soufflé or Angel food cake (6 Marks)
 - ii) Meat balls (6 Marks)
 - iii) Egg custard (6 Marks)
- (c) What range or class(es) of food constituents would you use to produce a clear, thin-flowing, low calorie and non-gelling sauce? Give an example of a food system that would require such a sauce. (6 Marks)
- (d) i) Describe the discipline 'Food Science and Technology'. (3 Marks)
- ii) Explain **two (2)** of the subject areas or areas of specializations under this broad discipline. (4 Marks)
- iii) Why do we need to have more practicing professionals in the area of Food Science and Technology in Swaziland? (3 Marks)

[TOTAL MARKS = 40]

QUESTION 2

There are several colour pigments and flavour compounds that naturally occur in plant foods like crops, vegetables and fruits.

- (a) Identify and describe **two (2)** broad classes of these colour pigments, and give examples of two sub-classes under each broad class. (8 Marks)
- (b) Give examples of foods that are good to excellent sources of each of these broad classes of colour pigments (4 Marks)
- i) Name **two (2)** types or classes of vegetables or crops that contain distinct flavour compounds and name the type of compound(s) contained in these vegetables or crops. (8 Marks)
 - ii) How important are these compounds in the diet? (4 Marks)

- (c) What is an emulsifier? What properties does it have that enable it to function as an emulsifier? Give an example of a commercial food system in which it was used.

(6 Marks)

[TOTAL MARKS = 30]

QUESTION 3

- (a) Explain how you would select and prepare oil for frying large quantities of food like a 100 fat cakes or 20 Kg of chips. **(6 Marks)**
- (b) Identify and describe the different stages that frying oil passes through from the time it is from a retail outlet to when it must be thrown away. **(10 Marks)**
- (c) What would you do to delay frying oil from breaking down in quality or to extend its frying life. Explain why you would do as indicated. **(8 Marks)**

- (d) What does industry do to give frying fats the strength they need during frying? **(6 Marks)**

[TOTAL MARKS = 30]

QUESTION 4

Your father or mother owns a herd of cattle. You are to select one of them that will be slaughtered to celebrate your graduation. You want a cow that will give good quality meat.

- (a) What guidelines would you follow in selecting such a cow? **(8 Marks)**
- (b) How would you ensure that the meat from that cow will be tender when cooked? **(8 Marks)**
- (c) How would you ensure that the meat will be tender and juicy after it is cooked? **(5 Marks)**
- (d) Draw an example of the structure of a meat muscle and label the different muscles in that cut of meat. **(9 Marks)**

[TOTAL MARKS = 30]