



1ST SEM. 2014/15

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN FOOD
SCIENCE, NUTRITION AND
TECHNOLOGY YEAR IV**

COURSE CODE : FSNT 403

**TITLE OF PAPER : FOOD INGREDIENT TECHNOLOGY
IN PRODUCT DEVELOPMENT**

TIME ALLOWED : TWO (2) HOURS

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

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 (COMPULSORY)

- (a) Define the following terms:-
i. Food additive
ii. Mutagen
iii. Procarcinogen
(12 Marks)
- (b) Explain how the following toxicity tests are conducted on food additives :-
i. Acute test
ii. Subacute test
iii. Chronic test
(10 marks)
- (c) Explain how the following values are obtained:-
i. Acceptable daily intake (ADI)
ii. Maximum residue level (MRL)
(12 Marks)
- (d) How is the mutagenicity and carcinogenicity of food compounds tested?
(6 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- (a) Explain consumer perceptions on food additives.
(8 Marks)
- (b) Define the following classes of food additives and give an example of a compound for each and its application :-
i. Preservative
ii. Emulsifier
iii. Antioxidant
iv. Chelating agent
(16 Marks)
- (c) State **three (3)** reasons for using food colours in food.
(6 Marks)

[TOTAL MARKS = 30]

QUESTION 3

(a) Explain how the following stabilizers are obtained, explain **two (2)** of their properties and give **one (1)** application example in each case:-

- i. Pregelatinized starch
- ii. Cross-linked starch
- iii. Locust bean gum

(15 Marks)

(b) Describe the function of the following food additives, giving a food example in each case:-

- i. Sorbitol
- ii. Sodium cyclamate
- iii. Potassium iodide

(15 Marks)

[TOTAL MARKS = 30]

QUESTION 4

(a) Explain the properties of the different types of carrageenan.

(15 Marks)

(b) Describe the function of the following food additives, giving a food example in each case:-

- i. Simplex
- ii. Olestra
- iii. High fructose corn syrup

(15 Marks)

[TOTAL MARKS = 30]