



1ST SEM. 2010/2011

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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 (2) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 [COMPULSORY]

- a. Analyse nitrites and sulphites, justifying clearly why they are used in food processing, how they react with food, and their health concerns.
[20 marks]
- b. Explain how the Acceptable Daily Intake (ADI) and Maximum Residue Level (MRL) are determined.
[10 marks]
- c. Explain each of the following terms:-
a. Food additive.
b. Genotoxic compound
c. Procarcinogen
d. NOEL
[10 marks]

[Total = 40 marks]

QUESTION 2

- a. Discuss the function of the following food additives, giving a food example in each case:
i. Disodium EDTA
ii. Polysorbate 60
iii. Tertiary butylated hydroquinone (TBHQ)
[15 marks]
- b. Explain calcium induced alginate gellation and its possible application in food.
[10 marks]
- c. Describe the following tests:
i. Acute test
ii. Chronic test
[5 marks]

[Total = 30 marks]

QUESTION 3

a. Discuss the function of each of the following food additives, giving a food example in each case

- i. Locust bean gum
- ii. Sorbitol
- iii. Sodium cyclamate
- iv. Annatto extract
- v. Potassium iodide

[15 marks]

b. Describe properties of the different types of carrageenan and their interaction with milk proteins at high and low pH.

[15 marks]

[Total =30 marks]

QUESTION 4

a. Describe the function of each of the following food additives, giving a food example in each case

- a. Turmeric
- b. L-glutamic acid
- c. Glycerol
- d. Sucralose
- e. Calcium silicate

[15 marks]

b. Explain each of the following food additives and give an example in each class

- i. Chelating agents
- ii. Surface active agent
- iii. Fungicidal preservative
- iv. Antioxidant
- v. Anticaking agent

[15 marks]

[Total = 30 marks]
