



**1<sup>ST</sup> SEM. 2010/2011**

**PAGE 1 OF 3**

**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY 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**

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

**QUESTION 1 [COMPULSORY]**

- a. Discuss **four** principles that govern the use of food additives and **two** consumer perceptions regarding food additive.

[12 marks]

- b. Explain how each of the following values are determined.

- i. Lethal Dosage Level (LD50)
- ii. No Observable Effects Level (NOEL)
- iii. Acceptable Daily Intake (ADI)
- iv. Maximum Residue Level (MRL)

[16 marks]

- c. Discuss the **three** stages in cancer development

[9 marks]

- d. Define food additive.

[3 marks]

**[Total = 40 marks]**

**QUESTION 2**

- a. Discuss the salts, mode of action and the application of each of the following food preservatives:-

- i. Potassium nitrite
- ii. Sorbic acid
- iii. Benzoic acid

[15 marks]

- b. Describe the properties of surface active agents or emulsifiers, giving an example and application.

[10 marks]

- c. State **three** reasons for using food colours in food

[ 5 marks]

**[Total = 30 marks]**

**QUESTION 3**

- a. Discuss the properties, interaction with  $\text{Ca}^{2+}$  cation and applications of alginic acid and its salts.

[15 marks]

- b. Explain 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. Annato extract
- v. Potassium iodide

[15 marks]

[Total =30 marks]

**QUESTION 4**

- a. Explain properties of the different types of carrageenan and their interaction with Potassium, Sodium and Calcium.

[15 marks]

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

- i. Calcium gluconate
- ii. Mono sodium glutamate
- iii. Glycerol and D-Sorbitol
- iv. Silicon dioxide
- v. Potassium bromate and ammonium persulfate

[15 marks]

[Total=30marks]

---