



1ST SEM. 2006/2007

PAGE 1 OF 3

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN HOME
ECONOMICS [FOOD SCIENCE AND
TECHNOLOGY OPTION] YEAR V**

COURSE CODE : FST 505

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

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER (3) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

PAGE 2 OF 3**QUESTION 1 [COMPULSORY]**

- a) Discuss the principles that govern the use of food additives
[10 marks]
- b) Discuss consumer perception of food additives and why you think they are unfounded.
[5 marks]
- c) Explain the term GRAS and give examples of GRAS food substances. Explain what constitutes Food Additives
[5 marks]
- d) What are the limitations in the use of sulphur dioxide (SO₂) in food, and what inherent problems exist in nitrites and nitrates in meat products.
[5 marks]

[Total = 25 marks]**QUESTION 2**

- a) Explain the function of preservatives in food and which preservatives would you choose in the following applications
- i. To control mold and bacterial growth in bread
 - ii. To inhibit mold and yeast growth in fruit juices and condiments
 - iii. Prevent yeast growth in wines
 - iv. To prevent growth of *Clostridium botulinum* in meat products
- [10 marks]
- b) What are antioxidants? Name three natural antioxidants and three synthetic antioxidants.
[6 marks]
- c) Explain the function of emulsifiers in food and give two examples of food that rely on emulsifier to maintain their quality.
[4 marks]
- d) Explain the function of sequestrants or chelating agents in food and give examples of a sequestrant.
[5 marks]

[Total = 25 marks]

QUESTION 3

Discuss the source, functional properties and the application of the following stabilizers and thickeners:-

- (i) Alginate
- (ii) Carrageenan
- (iii) Starch
- (iv) Carboxy methyl cellulose (CMC)
- (v) Pectin

[Total = 25 marks]

QUESTION 4

Name two food additives in each category and give an example of a food product in which it can be used.

- i. Bleaching and maturing agent
- ii. Artificial sweetener
- iii. Flavouring and flavour enhancers
- iv. Firming agent
- v. Anticaking agent

[Total =25 marks]

QUESTION 5

Name two food additives in each of the following category and give an example of a food product in which it can be used.

- vi. Gums
- vii. Clarifying agent
- viii. Fat replacer
- ix. Crystallization inhibitor
- x. Enzyme

[Total = 25 marks]