

2ND SEM. 2008/2009



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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

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

COURSE CODE : FSNT 305

**TITLE OF PAPER : FUNCTIONAL FOOD AND DIET
SUPPLEMENT**

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) Define the following terms and give an example of a food product which each term applies:-
- i. Functional food
 - ii. Nutraceuticals
 - iii. Standardization
 - iv. Substitution
- [12 marks]
- b) Discuss **four** categories of food stuffs that are suitable for nutrient addition.
- [16 marks]
- c) Discuss any **five** general principles for the addition of nutrients to foods as per Codex Alimentarius.
- [10 marks]
- d) Discuss amino acid complementation as it applies to cereal grain and legume composites.
- [4 marks]

[Total = 40 marks]

QUESTION 2

- a) Discuss the following mechanisms in the development of low calorie foods
- i. Calorie dilution
 - ii. Ingredient substitution
 - iii. Calorie extraction
- [12 marks]
- b) Explain why mineral supplementation may be necessary in the following cases
- i. Calcium, Phosphorus and Iron supplements during pregnancy and lactation
 - ii. Iron and Calcium supplements in adolescence and elderly persons
 - iii. Iodine in certain populations
- [12 marks]
- c) Discuss **three** fortification techniques
- [6 marks]

[Total = 30 marks]

QUESTION 3

- a) Discuss how the following functional food components prevent each of the following diseases:-
- i. Cardiovascular diseases
 - 1. Fibre
 - 2. Omega-3-fatty acids
 - ii. Cancer
 - 1. Fibre
 - 2. Antioxidants
- [20 marks]
- b) Discuss which food components you would add to prevent the following conditions
- i. Neural tube defects
 - ii. Osteoporosis
- [10 marks]
- [Total = 30 marks]

QUESTION 4

- a) Explain the usage of the following terms in nutritional labeling:-
- i. Nutrient claim
 - ii. Health claim
 - iii. Medical claim
- [15 marks]
- b) Discuss the functional food components that are said to be capable of improving:-
- i. Immune system
 - ii. Mood and behaviour
 - iii. Intellectual performance
- [15 marks]
- [Total = 30 marks]