



**2<sup>ND</sup> SEM. 2012/13**

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**FSNT 411 (S)**

**UNIVERSITY OF SWAZILAND  
SUPPLEMENTARY EXAMINATION PAPER**

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

**COURSE CODE : FSNT 411**

**TITLE OF PAPER : FUNCTIONAL FOODS AND DIET  
SUPPLEMENTS**

**TIME ALLOWED : TWO (2) HOURS**

**INSTRUCTIONS : ANSWER QUESTION ONE (1) AND ANY OTHER  
TWO (2) QUESTIONS. ILLUSTRATE YOUR  
ANSWERS WITH DIAGRAMS WHERE NEEDED**

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

**QUESTION 1 [COMPULSORY]**

- (a) Discuss the different types of fatty acids from health benefit point of view. (15 Marks)
- (b) With the help of a sketch, explain the stages in functional food product design. (10 Marks)
- (c) Discuss the technological challenges in developing functional foods (15 Marks)

**[TOTAL MARKS = 40]****QUESTION 2**

- (a) Explain the following: (20 Marks)
- i. Nano-encapsulation
  - ii. Probiotics
  - iii. Emulsion delivery system
  - iv. Symbiotic food
  - v. Whole grain
- (b) Outline the steps in commercial yogurt production. (10 Marks)

**[TOTAL MARKS = 30]****QUESTION 3**

- (a) List the factors that influence the choice of an encapsulant. (12 Marks)
- (b) With the help of a flowchart, describe the manufacture of acidophilus milk. (18 Marks)

**[TOTAL MARKS = 30]****QUESTION 4**

- (a) List **five (5)** applications of amphiphilic cyclodextrin as an encapsulant. (10 Marks)
- (b) Explain a symbiotic functional product and outline the steps in formulating such a product. (10 Marks)
- (c) Outline the steps involved in functional confectionery product. (10 Marks)

**[TOTAL MARKS = 30]**