



**2<sup>ND</sup> SEMESTER 2011/2012**

**UNIVERSITY OF SWAZILAND**  
**FINAL EXAMINATION PAPER**

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

**COURSE CODE : FSNT 411**

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

**TIME ALLOWED : TWO 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 technological challenges associated with functional food development. (10 Marks)
- b. Discuss the different types of fatty acids (fats) from health benefit point of view. (10 Marks)
- c. Define dietary fiber and describe the health benefits as an ingredient in functional foods. (10 Marks)
- d. Discuss the importance of antioxidants in foods. (10 Marks)

**[TOTAL MARKS = 40]**

**QUESTION 2**

- a. Discuss the health benefit of prebiotics in functional foods and give two examples of prebiotics. (8 Marks)
- b. Describe the components of soy used in functional food development and outline their health benefit. (8 Marks)
- c. Define a functional confectionery and outline the steps in formulating such a product. (8 Marks)
- d. Explain the role of Micro-encapsulation in functional food production. (6 Marks)

**[TOTAL MARKS = 30]**

**QUESTION 3**

- a. Discuss the health benefit of probiotics in functional foods and give two examples of probiotics. (8 Marks)
- b. Describe the health benefits of plant sterols. (6 Marks)
- c. Define a functional spread and outline the steps in formulating such a product. (8 Marks)
- d. Describe the aims of a delivery system for an emulsion in functional foods. (8 Marks)

**[TOTAL MARKS = 30]**

**QUESTION 4**

- a. Describe the health aspects of functional colonic foods. (8 Marks)
- b. Describe dairy ingredients in functional food development. (7 Marks)
- c. Explain a symbiotic functional product and outline the steps in formulating such a product. (7 Marks)
- d. Give a brief explanation on the natural products for weight management. (8 Marks)

**[TOTAL MARKS = 30]**