

**Autumn Examinations 2012/2013**

**Module Title: Science of Food and Health (CA module)**

<b>Module Code:</b>	FOOD6001
<b>School:</b>	Science and Informatics
<b>Programme Title:</b>	Bachelor of Science (Honours) in Nutrition & Health Bachelor of Science (Honours) in Herbal Science Bachelor of Science (Honours) in Pharmaceutical Biotechnology Bachelor of Science in Applied Biosciences
<b>Programme Code:</b>	SNHSC_8_Y1 SHERB_8_Y1 SPHB1_8_Y1 SBIOS_7_Y1
<b>Internal Examiners:</b>	Dr. Máire Begley Ms. Anna Murphy
<b>External Examiners:</b>	Dr. Anne Nelson

**Instructions:** Answer **Q1** and **three** other questions.

All questions carry equal marks (25 marks).

**Duration:** 2 hours

**Sitting:** Autumn 2013

**Requirements for this examination:** Calculator

**Note to Candidates:** Please check the Programme Title and the Module Title to ensure that you have received the correct examination paper.  
If in doubt please contact an Invigilator.

**Q1. COMPULSORY QUESTION.** Answer all parts.

- (a) Describe the principle of the Bradford test. **(4 marks)**
  - (b) What is the purpose of sulphuric acid in the Gerber test? **(2 marks)**
  - (c) Given the recommended daily allowance (RDA) value of 80mg for Vitamin C (ascorbic acid), calculate the % RDA if there was 30mg of ascorbic acid present in a food product. **(3 marks)**
  - (d) Give two reasons to explain why fermented foods and beverages are the most popular way of delivering probiotics to the gut. **(3 marks)**
  - (e) 100g of Dominos 14" Cheese Pizza, Ultimate Deep Dish Crust consists of 11.36g of protein, 10.34g of fat, 33.93g of carbohydrate, 42.09g of water and 561mg of sodium. Calculate the total calorie value per 100g of the pizza. **(8 marks)**
  - (f) Calculate the percentage of energy derived from fat in the above pizza. **(5 marks)**
- (25 marks)**

**Q2.**

- (a) Explain the purpose of the Food Pyramid used in the Republic of Ireland and outline in detail its recommendations. **(10 marks)**
  - (b) List the main healthy eating guidelines to reduce the risk of cancer in the body. **(5 marks)**
  - (c) Explain what a functional food is. **(5 marks)**
  - (d) List five disadvantages of dietary supplements for athletes. **(5 marks)**
- (25 marks)**

### **Q3.**

- (a) Outline the main functions of dietary fibre or non-starch polysaccharide in the body. (5 marks)
  - (b) Distinguish between food allergy and food intolerance. (8 marks)
  - (c) Define the terms probiotic and prebiotic and give an example of each. (8 marks)
  - (d) List four factors that influence the nutritional requirements of a sports person. (4 marks)
- (25 marks)**

### **Q4.**

- (a) Distinguish with the aid of diagrams the difference between a saturated fatty acid and a monounsaturated fatty acid. (8 marks)
  - (b) Explain the term glycaemic index (GI) and describe the main benefits of a GI diet for a diabetic. (8 marks)
  - (c) Describe how the different dietary fats in foods affect the levels of cholesterol in the body. (6 marks)
  - (d) State the three main benefits that probiotics and prebiotics can have on human health. (3 marks)
- (25 marks)**

### **Q5.**

- (a) List the main functions of vitamins in the human body. (5 marks)
  - (b) Describe briefly what Coeliac Disease is and the consequences of Coeliac Disease for the body. (8 marks)
  - (c) Explain what a phytochemical is. Give two examples of phytochemicals and state their potential benefits to the human body. (8 marks)
  - (d) Outline the main concerns with caffeine supplementation for athletes. (4 marks)
- (25 marks)**

**Q6.**

- (a) Distinguish between an essential and a non-essential amino acid. Give one example of each. **(6 marks)**
  - (b) State the main dietary changes that can help control the symptoms of Irritable Bowel Syndrome. **(8 marks)**
  - (c) Describe the main lifestyle changes to reduce the risk of heart disease. **(6 marks)**
  - (d) Explain how foods containing plant sterols (e.g. Benecol) work. **(5 marks)**
- (25 marks)**