

Autumn Examinations 2013/2014

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

Module Code: FOOD6001

School: Science and Informatics

Programme Code: SNHSC_8_Y1

SHERB_8_Y1

SPHB1_8_Y1

SBIOS_7_Y1

Internal Examiners: Dr. Máire Begley

Ms. Anna Murphy

External Examiner: Dr. Tom O'Connor

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

All questions carry equal marks (25 marks).

Duration: 2 hours

Sitting: Autumn 2014

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) Explain why milk is pasteurized. (2 marks)
 - (c) Given the recommended daily allowance (RDA) value of 80mg for Vitamin C (ascorbic acid), calculate the % RDA if there was 42mg 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) List three pieces of information which must be appear on a food label under current General Labelling Legislation. (3 marks)
 - (g) Name a test that can be used to estimate the glucose concentration in soft drinks. (2 marks)
- (Total = 25 marks)**

Q2. (a) Discuss Macronutrients under the following headings:

- (i) Types of Macronutrients
 - (ii) Functions of each of these Macronutrients
 - (iii) Food sources of each of these Macronutrients
- (12 marks)
- (b) Explain the term 'Synbiotic' in relation to functional foods. (5 marks)
 - (c) Give examples of food compounds that can interfere with mineral absorption in the body. (5 marks)
 - (d) State the main benefits that probiotics and prebiotics have on human health. (3 marks)

Q3. (a) Distinguish with the aid of diagrams the difference between a saturated fatty acid and a polyunsaturated fatty acid. (8 marks)

(b) State the functions of water in the body and describe briefly the effect that water depletion can have on the body. (8 marks)

(c) State the main health consequences for a person if they are obese. (4 marks)

(d) Explain the FODMAP diet for the management of Irritable Bowel Syndrome. (5 marks)

Q4. (a) Describe the term Biological Value of Protein. (4 marks)

(b) Name two foods containing high Biological Value Protein and two foods containing low Biological Value Protein. (4 marks)

(c) Define the terms Prebiotic and Probiotic and give one example of each. (6 marks)

(d) List the three monosaccharides and three disaccharides and state the main food source of each. (6 marks)

(e) Explain the term 'Phytochemical'. Describe the main health benefits of phytochemicals in the body. (5 marks)

Q5. (a) Describe the main dietary requirements to reduce the risk of heart disease. (7 marks)

(b) As outlined by the Institute of Sport in Ireland, state the main proposed health benefits of caffeine consumption for athletes. (6 marks)

(c) Explain what is meant by the Glycaemic Index and describe the benefits of a low GI diet for Diabetics. (6 marks)

(d) Distinguish between a Macromineral and a Micromineral to include one example of each. (6 marks)

Q6. (a) Write a note on the current Food Pyramid used in the Republic of Ireland explaining its function and its main recommendations. (10 marks)

(b) Explain the difference between a food allergy and a food intolerance and give one example of each. (8 marks)

(c) Explain how diet can increase the risk of a person developing cancer. (7 marks)