

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Semester 2 Examinations 2010/11

Module Title: Nutritional Analysis

Module Code: BIOL7018

School: Science

Programme Title: Bachelor of Science (Honours) in Herbal Science – Year 2
 Bachelor of Science (Honours) in Nutrition and Health Science - Year 2

Programme Code: **SHERB_8_Y2**
 SNHSC_8_Y2

External Examiner(s): Prof. E. Williamson, Dr. A. Gallagher, Dr. Julia Green
Internal Examiner(s): Mr. Germain Levieille

Instructions: **Answer any 3 of the 5 questions asked. Each question carries a
equal mark weighing.**
 Please state clearly the questions addressed in your paper.

Duration: 2 Hours

Sitting: Summer 2011

Requirements for this examination:

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. (a) Describe the chemical diversity of carbohydrates in foods.
- (b) Describe two of the enzymatic methods available to determine the concentration of glucose. How do they compare with chromatographic methods?
- Q2. (a) Give short descriptions and definitions for:
1. EAR
 2. RDA
 3. Tolerable Upper-Intake Level (UL)
 4. Adequate Intake (AI)
- (b) Discuss the concept of optimal nutrition and how it relates to dietary reference standards.
- (c) Supported by examples, elaborate on the micronutrients recommended intakes and the health issues resulting from deficiencies and toxicity levels.
- Q3. (a) Give a definition for both Glycaemic Index (G.I.) and Glycaemic Load (G.L.), and the interrelation between GI and GL.
- (b) Discuss the meaning of Glycaemic Index in human nutrition and the risks associated with sustained high GI diet.
- Q4. (a) Describe the Kjeldahl method and discuss its advantages and limitations.
- (b) Total protein concentration of a food ingredient can be measured through a number of spectrophotometric methods. Which of these methods would you apply to determine the total protein content of a food product? Explain your choice of method in relation to other possible methods.
- Q5. (a) Discuss the relationship between protein content in a food and protein utilisation.
- (b) Discuss the difference between protein deficiency and protein malnutrition. What are the main diseases resulting from these conditions?