

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Semester 2 Examinations 2010/11

Module Title: Nutritional Analysis

Module Code: BIOL7018

School: School of Science

**Programme Title: Bachelor of Science (Honours) in Herbal Science
 Bachelor of Science (Honours) in Nutrition and Health Science**

**Programme Code: SHERB_8_Y2
 SNHSC_8_Y2**

**External Examiner(s): Prof. E. Williamson, Dr. A. Gallagher
Internal Examiner(s): Germain Leveille**

**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 and Glycaemic Load, 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 relations to other possible methods.**

Q5.

- a) Discuss relation between protein content in a food and protein utilisation.**
- b) Talk about the difference between protein deficiency and protein malnutrition. What are the main diseases resulting from these conditions?**