

**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?