

**CORK INSTITUTE OF TECHNOLOGY**  
**INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Semester 2 Examinations 2009/10**

**Module Title:      Nutritional Analysis**

**Module Code:        BIOL7018**

**School:                Biological Sciences**

**Programme Title:    B.Sc. (Hons) in Herbal Science – Stage 2**

**Programme Code:    SHERB\_8\_Y2**

**External Examiner(s):    Prof. Liz Williamson**

**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 2010**

**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) Carbohydrates have an important role in the texture of food products. Discuss their role and functions from a food texture point of view.
- (b) Describe the production of sweetening ingredients from starch. Explain the nutritional issues arising from the excessive uses of such ingredients.
- Q2. Development of rancidity in lipids-containing foods is a constant problem.
- (a) Discuss the process of oxidation of lipids and its contributing factors.
- (b) How is it possible to limit the effects of lipid oxidation?
- Q3. Describe three main methods of extraction of fat and oil used in food. What further post-extraction processing would be applied to extracted oils?
- Q4. Describe two of the enzymatic methods available to determine the concentration of glucose.
- How do they compare with chromatographic methods?
- Q5: (a) Protein nutritional value revolves around the concept of “complete protein” and “protein efficiency value”. Explain this concept and its implications in Human Nutrition.
- (b) Total protein concentration of a food ingredient can be measured through a number of methods. Which of these methods would you apply to determine the total protein content of a food product? Explain your choice of method.