

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Summer Examinations 2012**

<b>Module Title:      Nutritional Analysis</b>
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**Module Code:**                BIOL7018

**School:**                        Biological Sciences

**Programme Title:**        BSc (Hons) in Herbal Science – Year 2  
                                      BSc (Hons) in Nutrition and Health Science – Year 2

**Programme Code:**        SHERB\_8\_Y2  
                                      SNHSC\_8\_Y2

**External Examiner(s):**    Dr Julia Green, Dr Alison Gallagher  
**Internal Examiner(s):**    Germain Levieille

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

**Duration:**                    2 Hours

**Sitting:**                        Summer 2012

**Requirements for this examination:**

<p><b>Note to Candidates:</b> 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.</p>
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**Q1:**

- a) What is the evolution of bone density during an individual lifetime? (8 marks)
- b) Give a definition of peak bone density. (4 marks)
- c) What are the nutritional factors contributing to bone development? (10 marks)
- d) Discuss the consequences of poor nutrition affecting bone structure in children and in adults. (12 marks)

**Q2:**

- a) Give short descriptions and definitions for: (16 marks)
  - 1. EAR
  - 2. RDA
  - 3. Tolerable Upper-Intake Level (UL)
  - 4. Adequate Intake (AI)
- b) What are relationships between these above listed dietary requirement intakes measurements? (8 marks)
- c) Discuss the Health implications of deficiencies and excessive intakes of key vitamins. Illustrate with a few examples. (10 marks)

**Q3:**

- a) Give a definition of the Glycaemic Index of a food product. (7 marks)
- b) What is the Glycaemic Load of that same food product? (7 marks)
- c) Discuss the relationship between Glycaemic Index, Glycaemic Load and Insulin Index. (8 marks)
- d) Elaborate on the health effects and the risks associated with sustained high GI diet. (12 marks)

**Q4:**

- a) Describe the principles of diet-planning. (10 marks)
- b) Discuss how the food pyramid can contribute to respect these principles. (8 marks)
- c) Discuss the health implications of choice within the food groups that make up the food pyramid. (8 marks)
- d) Discuss the contribution of physical activity to health. (8 marks)

**Q5:**

- a) Define Estimated Energy Requirement (EER). (5 marks)
- b) Discuss the factors affecting the EER of an individual. (8 marks)
- c) What the definition of the AMDR (Acceptable Macronutrient Distribution Range)? (5 marks)
- d) Give an estimation of the values of AMDR of major macronutrients. (8 marks)
- e) Discuss the obesity problem in Ireland in terms of EER and AMDR. (8 marks)