

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Autumn Examinations 2013**

**Module Title:      Nutritional Analysis**

**Module Code:          BIOL7018**

**School:                  Science & Informatics**

**Programme Title:**    B.Sc. (Honours) in Herbal Science  
                              B.Sc. (Honours) in Nutrition and Health Science

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

**External Examiner(s):** Dr. J. Green, Prof T. Sweeney,  
**Internal Examiner(s):** Germain Levieille

**Instructions:**          Answer any 4 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:**                 Autumn 2013

**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) Give definitions for: (10 marks)
- DRI
  - EAR
  - RDA
  - Tolerable Upper-Intake Level (UL)
  - Adequate Intake (AI)
- b) What are relationships between these above listed values? (5 marks)
- c) Give a definition of the AMDR (Acceptable Macronutrient Distribution Ranges). (5 marks)
- d) Give an estimation of the values of AMDR. (5 marks)
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- Q2.** a) Explain the physiological phenomenon of thirst and the regulation of water intake. (10 marks)
- b) Describe the Three-Compartment Model of fluid repartition in human body, with an indication proportion of water and key minerals. (7 marks)
- c) Elaborate on the importance of mineral intake and balance in the regulation of acid-base balance of the body fluids. (8 marks)
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- Q3.** a) What are the roles of Selenium in the body? (5 marks)
- b) Give examples of nutritional sources of Selenium and variations of Selenium levels in these foods. (5 marks)
- c) Describe the Selenium absorption and excretion in human body. (7 marks)
- d) What are the requirements in Selenium? (3 marks)
- e) Elaborate on the issues of Selenium deficiency and excess. (5 marks)

- Q4.** a) Give a definition of a vitamin. (5 marks)
- b) What are the fat soluble vitamins? (4 marks)
- c) Describe the sources and the chemical nature of Vitamin D. (8 marks)
- d) Discuss the risks associated with deficiency of Vitamin D. (8 marks)

- Q5.** a) Give definition for BMR (Basal metabolic rate). (3 marks)
- b) How is BMR estimated? (5 marks)
- c) Give a definition of the Total Energy Expenditure (TEE). (5 marks)
- d) What are the components of the TEE? (5 marks)
- e) Discuss the role of physical activity on TEE and the weight management. (7 marks)