

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Autumn Examinations 2012

Module Title: Nutritional Analysis

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: Autumn 2012

Requirements for this examination:

<p>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.</p>
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Q1:

- (a) Define BMI. How do you calculate it? What is its unit? (8 marks)
- (b) Specify the BMI range which is considered:
- (i) Healthy (4 marks)
 - (ii) Overweight (4 marks)
 - (iii) Obese (4 marks)
- (c) Give an example of your choice to illustrate the calculation of:
- (i) a healthy BMI
 - (ii) an overweight BMI (6 marks)
- (d) Discuss the implications and possible causes of the evolution of BMI in the Irish population based on conclusions of the SLAN 2007. (8 marks)

Q2:

Discuss the health implications of deficiencies and excessive intakes of liposoluble vitamin A. Illustrate with examples of deficiency and excess conditions.

(34 marks)

Q3:

- (a) Lipids can make an important contribution to the energy intake of an individual. Outline current recommendations for dietary lipid intakes. (7 marks)
- (b) Discuss the different types of fatty acids within lipids and their respective health qualities and risks. (12 marks)
- (c) Another potentially important contributor to total energy intake can be alcohol.
- (i) Calculate the number of unit(s) of alcohol provided by a 150ml glass of wine containing 12% alcohol. (4 marks)
 - (ii) What will be the calories contributed by the alcohol in this glass of wine? (4 marks)
- (d) Discuss the notion of “empty calories”. (7 marks)

Q4:

- (a) Diet planning is guided by six main principles. What are they and what does each of these principles mean? (10 marks)
- (b) Discuss how these principles can be used to meet the guidelines expressed in the food pyramid. (12 marks)
- (c) Comment on the balance between “energy in” and “energy out” and the contribution of physical activity to general health. (12 marks)

Q5:

- (a) Give a definition of the Basal Metabolic Rate (BMR). (8 marks)
- (b) What is the relationship between BMR and the Estimated Energy Requirement (EER)? (8 marks)
- (c) Discuss the factors affecting the EER of an individual. (8 marks)
- (d) Energy can come from a variety of food sources and nutrients. Give a definition of the Acceptable Macronutrient Distribution Range (AMDR) and provide the AMDR for each macronutrient. (10 marks)