

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

**Autumn Examinations 2010/11**

**Module Title: 21st Century Health (CA)**

**Module Code: PHOL6004**

**School: Biological Science**

**Programme Title:** Bachelor of Science in Applied Biosciences & Biotechnology – Year 2  
Bachelor of Science (Honours) in Nutrition and Health Science – Year 2  
Bachelor of Science (Honours) in Pharmaceutical Biotechnology – Year 2

**Programme Code:** SBIOS\_7\_Y2  
SNHSC\_8\_Y2  
SPHBI\_8\_Y2

**External Examiner(s): Dr. Don Faller, Dr. Ann Gallagher, Dr. Jerry Bird**  
**Internal Examiner(s): Ms. Anna Murphy**

**Instructions: Answer any four Questions**

**Duration: 2 Hours**

**Sitting: Autumn 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 in detail, giving examples, the clinical parameters that can be used to measure health and wellbeing. (8 Marks)
- (b) Write a brief note on the adverse effects uncontrolled Diabetes can have on the human body. (9 Marks)
- (c) Distinguish between a benign and malignant tumour. List the main methods by which a malignant tumour can spread in the body. (8 Marks)
- Q2. (a) Describe in detail the main dietary changes that can be made to reduce the risk of heart disease in the body. (8 Marks)
- (b) Write a brief note on the main differences between mature stem cells and early stem cells to include advantages and disadvantages of each. (9 Marks)
- (c) Describe briefly four factors that have contributed to the increase in antibiotic resistance in microbes. (8 Marks)
- Q3. (a) Write a brief note on how gene therapy can be used to treat disease in the human body. (8 Marks)
- (b) Write a brief note on Cholesterol to include:
- (i) Effects of LDL and HDL cholesterol on the body
  - (ii) Effects of Dietary fats on LDL and HDL cholesterol levels in the body
  - (iii) Type of foods that lower cholesterol levels in the body. (9 Marks)
- (c) List four main causes of strokes in the body. State four main factors that increase a person's risk of getting a stroke. (8 Marks)
- Q4. (a) Describe in detail the process involved in the formation of soft plaque in the arteries. (9 Marks)
- (b) Write a detailed note on the types of Diabetes that can occur in the body. (8 Marks)
- (c) Distinguish between Primary Tuberculosis and Secondary Tuberculosis. (8 Marks)

- Q5. (a) Define the term Obesity. Describe the main health consequences that can occur in the body as a result of obesity. (9 Marks)
- (b) Write a brief note on MRSA to include the risk factors for the two main types of MRSA. (8 Marks)
- (c) Describe briefly the main types of carcinogens that can increase the risk of free radical formation in the body. (8 Marks)
- Q6. (a) Write a note on Pre-Diabetes to include definition, diagnosis method and the importance of diagnosing the pre-diabetes stage. (10 Marks)
- (b) Explain briefly what is meant by a phytochemical. State the main beneficial effects of phytochemicals in the body, including some examples. (8 Marks)
- (c) List seven main risk factors for coronary heart disease (7 Marks)