

# Cork Institute of Technology

## Bachelor of Science (Honours) in Applied BioSciences - Award

(NFQ Level 8)

Spring 2007

### Science of Food & Healthcare

(Time: 3 Hours)

#### Instructions

Answer FIVE questions. Answer **Three** from  
Section A and **Two** from Section B.  
Please use separate answer books for each section

Dr. T. Beresford  
Dr D. Gilroy  
Ms. E. McDonnell

### Section A

- Q1. Your boss asks you to set up a method of sensory analysis to evaluate a new food product that the company has developed. Describe how you would approach this task and highlight the method which you would use, giving reasons for doing so. (20 marks)
- Q2. Discuss the role of nutrition in the prevention, development and treatment of heart disease. (20 marks)
- Q3. With respect to GM Soya, describe the following: -  
Development of herbicide resistance  
Potential benefits  
Consumer concerns  
Methods of detection (20 marks)
- Q4. (a) Describe the advice you would give to an athlete regarding their diet to enhance performance and the use of ergogenic aids. (10 marks)  
(b) Discuss how nutritional requirements change during pregnancy. (10 marks)

- Q5. Define active packaging and give examples of active packaging systems used for various food products. (20 marks)

### Section B

- Q6. Write an essay on the role of:  
(a) Mercury as a food contaminant  
(b) Dioxins as environmental pollutants. (20 marks)
- Q7. Define the terms “NOAEL” and “ADI” in relation to the safety evaluation of food additives. What relationship exists between these terms? Discuss the rationale for the use of a Safety Margin in the calculation of “ADI” for food additives. (20 marks)
- Q8. (a) Why do hydrolases (E.C. 3) currently dominate the global industrial enzyme market? Include in your answer **at least** 3 examples of industrial hydrolytic enzymes. (20 marks)

### OR

- (b) Outline the use of microbial and fungal amylases, glucoamylases and isomerases in the production of high fructose corn syrups (HFCS) from starch. In your answer comment on the following:

- Key characteristics of each enzyme group
- Steps involved in HFCS production.

(20 marks)