

# Cork Institute of Technology

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

(NFQ Level 8)

Autumn 2006

### **Advanced Microbial Topics**

(Time: 3 hours)

Answer FOUR Questions.  
One from each section (A, B and C)  
and one other of your choice.  
Please use separate answer books for each section.

Examiners :  
Dr. A. Coffey  
Dr. D. Gilroy  
Dr. H. O' Shea  
Prof. R. Fitzgerald

### Section A - Microbial Biotechnology

- Q1. Discuss the bacteriophage problem in food fermentations and describe how biotechnology can be applied to reduce the problem. (25 marks)
- Q2 Discuss the general layout of a fermentation plant and also the principal activities, which occur in the different locations. (25 marks)

## Section B – Analytical Microbiology

- Q3. Discuss three molecular type methods you have studied for analysing microbial genomes.

**or**

Describe the principle and microbiological applications of each of the following techniques:

- Flow cytometry
- Fourier-Transform Infra Red Spectroscopy
- Indirect Conductimetry (25 marks)

- Q4. Discuss the history and future prospects of rapid and instrumental microbiological methods. (25 marks)

## Section C – Virology

- Q5. Discuss the family Togaviridae. (25 marks)
- Q6. Discuss, using examples, how viruses survive in the community. (25 marks)