

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Semester 1 Examinations 2009/10**

**Module Title: Analytical Microbiology**

**Module Code:** BIOM 7001

**School:** School of Science

**Programme Title:** Bachelor of Science in Applied Biosciences and Biotechnology

**Programme Code:** SBIBI\_7\_Y3

**External Examiner(s):** Dr. D. Faller  
**Internal Examiner(s):** Mr. B. Walsh  
Dr. A. Coffey

**Instructions:** Answer **2 Questions** from Section A and **2 Questions** from Section B

**Duration:** 2 hours

**Sitting:** Winter 2009

**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.

**SECTION A**  
**(answer two questions)**

- Q1. (a) What are pyrogens? (3 marks)  
(b) What is the importance of endotoxins? (4 marks)  
(c) What is the structure of endotoxins? (4 marks)  
(d) What is the mechanism of the LAL test? (6 marks)  
(e) What are the methods available for endotoxin detection? (8 marks)
- Q2. Write concise notes on machine based methods for the detection of microorganisms. (25 marks)
- Q3. (a) What is an EU directive? (4 marks)  
(b) Outline the structure of directive 2001/83/EC. (8 marks)  
(c) Article 51 of directive 2001/83/EC defines the duties of a qualified person. What are the duties of a **QP**? (8 marks)  
(d) What is the FDA **PAT** initiative? Give an example with which you are familiar. (5 marks)

**Section B**  
**(answer two questions)**

- Q4. Write an essay on sterility testing for pharmaceutical products and biomedical devices.
- Q5. List the common on-line resources available to the analytical microbiologist and give a detailed account of the information available in each.
- Q6. Write an essay on detection of *E. coli* O157 in food with emphasis on confirmatory tests that can be used.