

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Semester 1 Examinations 2010

Module Title: Analytical Microbiology

Module Code: BIOM 7001

School: Science

Programme Title: BS Applied Bioscience & Biotechnology
 BSc Analytical & Pharmaceutical Chemistry

Programme Code: SBIBI_7_Y3,
 SCHEM_7_Y3
 SCHQA_8_Y3

External Examiner(s): Dr Don Faller
Internal Examiner(s): Dr Brigid Lucey

Instructions: Answer 3 questions, one from section A, one from Section B, and the remaining question from either A or B. Use separate exam books for each section. Each question carries equal marks.

Duration: 2 Hours

Sitting: Winter 2010

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

Q1. Discuss how current design principles, and the equipment and technology used in cleanrooms help in sterile manufacture.

Q2. Discuss sterility testing under the following headings:

- (a) Membrane filtration sterility testing
- (b) Product flush sterility testing
- (c) How to prevent false positive results

Note: All parts carry equal marks.

Section B

Q3. Outline the significance of (a) enterococci and (b) cryptosporidia when detected from water samples. Explain how each organism may be isolated and identified. Discuss whether the enumeration of these organisms is important.

Q4. Write an essay on the isolation and identification of **two** selected Gram-negative organisms when using a combination of culture and biochemical methods, and indicate whether molecular methods are likely to have an advantage over these conventional techniques.