

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Semester 2 Examinations 2010/2011

Module Title: Fundamentals of Microbiology II

Module Code: BIOM6006

School: Science

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

Programme Code: **SBIOS_7_Y2**
 SPHBI_8_Y2
 SNHSC_8_Y2

External Examiner(s): Dr. J. Bird, Dr. A. Gallagher, Dr. A. Nelson
Internal Examiner(s): Dr. D. Gilroy

Instructions: Answer Three questions. All questions carry equal marks.

Duration: 2 Hours

Sitting: Summer 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. Describe how the following molecular characteristics are used to determine the relatedness of microorganisms:
- (i) T_m (8 marks)
 - (ii) 16S rRNA (8 marks)
 - (iii) NA Hybridisation (9 marks)
- Q2. (a) Draw and label the structure of a *Penicillium* species. (5 marks)
- (b) Describe the life cycle of *Phytophthora infestans*. (15 marks)
- (c) On what type of culture media do fungi like to grow? (5 marks)
- Q3. (a) What is a virus? (3 marks)
- (b) Describe the seven stages of viral replication and explain what occurs at each stage. (14 marks)
- (c) Summarise the possible effects that animal viruses may have on the cells they infect. (8 marks)
- Q4. Write short notes on **two** of the following genera. In your answer mention their medical importance and tests used to aid their identification.
- (i) *Pseudomonas*
 - (ii) *Streptococcus*
 - (iii) *Staphylococcus*
 - (iv) *Bacillus* (25 marks)
- (12.5 x 2)
- Q5. Write notes on **two** of the following topics:
- (i) Cryptosporidiosis
 - (ii) Legionnaires' disease
 - (iii) The Influenza virus
 - (iv) The Coliform group (25 Marks)
- (12.5 x 2)