

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Semester 1 Examinations 2010/2011

Module Title: Introductory Microbiology

Module Code: BIOM 6008

School: Science

Programme Title: BSc (Hons) Herbal Science – Stage 2
 BSc Horticulture – Stage 2

Programme Code: CR_SHERB_8_Y2
 CR_BHORT_7

External Examiner(s): Professor E Williamson, Dr. J. Green
Internal Examiner(s): Dr. D. Gilroy

Instructions: Answer THREE Questions. All questions have 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.

- Q1. (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)
- Q2. (a) With the aid of graphs explain the differences that exist between bacteriostatic, bacteriocidal and bacteriolytic antimicrobial agents. (12 marks)
- (b) Discuss the use of heat as a method to control microbial populations. (8 marks)
- Q3. (a) What is a virus? (4 marks)
- (b) Describe the seven stages of viral replication and explain what occurs at each stage. (14 marks)
- (c) How do plant viruses enter host cells (2 marks)
- Q4. (a) Draw a typical growth curve for a bacterial population in a batch culture and describe what occurs in each phase of growth. (10 marks)
- (b) With the aid of a test tube diagram show how oxygen levels can influence the growth rate of a culture and identify the different bacterial classes based on their sensitivity to oxygen. (6 marks)
- (c) Explain the differences between spread plate and pour plate techniques. (4 marks)

Q5. Write short notes on **two** of the following genera:

Pseudomonas

Streptococcus

Staphylococcus

Bacillus

(20 marks)

Q6. Write notes on **two** of the following topics:

Cryptosporidiosis

Legionnaires' disease

The Influenza virus

The Coliform group

(20 marks)