

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Semester 1 Examinations 2011/12

Module Title: Introductory Microbiology

Module Code: BIOM6008

School: Science

Programme Title(s): Bachelor of Science (Honours) in Herbal Science – Stage 2
Bachelor of Science in Horticulture

Programmes Code(s): SHERB_8_Y2 / BHORT_7_Y2

External Examiner(s): Dr Julia Green,

Internal Examiner(s): Dr. Olivia Cashman, Dr. Deirdre Gilroy

Instructions: Answer two questions from Section A and
two questions from Section B

Duration: 2 Hours

Sitting: Semester 1 2011/12

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. If in doubt please contact an Invigilator.

Section A

Q1.

(a) With the aid of a diagram show the structural arrangements of the prokaryotic cell. (5 Marks)

(b) Write a short note on any three of the following:

a. Plasmids

b. Prokaryotic cell wall

c. Endospores

d. Flagella (20 marks)

Q2.

(a) Bacteria can be divided into groups on the basis of their Carbon, Energy and Hydrogen/Electron sources, describe these. (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) In a few sentences, indicate how the bacterial endospore differs from the vegetative cell in structure, chemical composition and ability to resist extreme environmental conditions. (9 Marks)

Q3. Outline the process of DNA replication with the aid of a diagram. Name and describe the function of each of the enzymes involved in the process. (25 marks)

Section B

Q4.

(a) With the aid of graphs explain the differences that exist between bacteriostatic, bacteriocidal and bacteriolytic antimicrobial agents. (12 Marks)

(b) Explain with the aid of a diagram the processes involved in viral replication. (13 marks)

Q5.

(a) Discuss Decontamination, Disinfection and Sterilisation (5 marks)

(b) Discuss methods for controlling microbial growth (20 marks)

Q6. Discuss the Structure, Classification and Reproduction of Fungi. (25 marks)