

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Semester 1 Examinations 2008/09**

**Module Title:     Fundamentals of Microbiology**

**Module Code:        BIOM6007**

**School:                Science**

**Programme Title:    Bachelor of Science in Applied Biosciences – Stage 2**

**Programme Code:        SBIOS\_7\_Y2**

**External Examiner(s):     Dr. Don Faller**  
**Internal Examiner(s):    Ms. Deirdre Gilroy**

**Instructions:            Answer Question 1 and TWO other questions. All  
questions carry equal marks**

**Duration:                2 Hours**

**Sitting:                  Winter 2008**

**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. Answer FOUR of the following six questions. Each question has equal marks.
- (a) Describe and illustrate the different stages of bacterial growth.
  - (b) List and describe the direct and indirect ways of measuring bacterial cell numbers.
  - (c) Illustrate the differences between the pour plate and spread plate method of growing bacteria. List an advantage and disadvantage of each method.
  - (d) Compare the spontaneous generation of disease and Koch's postulates.
  - (e) Describe, in detail, the differences between Gram positive and Gram negative bacterial cell wall structure.
  - (f) The number of cells in a bacterial cell culture was measured at 9 am and 3 pm on the same day. The cell numbers at 9 am were 10,000 cells/ml and at 3 pm were 100,000 cells/ml. Calculate the generation time.
- Q2. Discuss the role of the endosymbiont theory in our understanding of the evolution of eukaryotes.
- Q3. Compare four different fermentations in terms of energy production, an example of a microorganism which uses the fermentation and end products produced.
- Q4. Outline the impact of microbes on the environment and human activities.