

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Autumn Examinations 2008/09

Module Title: Fundamentals of Microbiology II

Module Code: BIOM 6006

School: Biological Sciences

Programme Title: Bachelor of Science in Applied Biosciences – Year 2

Programme Code: SBIOS_7_Y2

External Examiner(s): Dr Don Faller

Internal Examiner(s): Dr Siobhán O' Sullivan

Instructions: Answer **Question 1 and **2** other questions**

Duration: 2 Hours

Sitting: August 2009

Requirements for this examination: None

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. Write short notes on **15** of the following:

1. Illustrate the reproductive strategy of the α protobacterium *Caulobacter*
2. Identify significant beneficial or detrimental effects of the genera *Clostridium*, *Bacillus*, *Listeria* and *Lactobacillus*
3. List five ways in which fungi are beneficial
4. Describe snapping cell division.
5. How are prokaryotes classified in modern day classification?
6. List three common types of reproduction in prokaryotes.
7. Viruses are described as **obligate intracellular parasites**- explain *each* of the underlined terms
8. List three reasons why viruses are classified as non living entities
9. How does our immune system respond to viruses?
10. Describe the appearance and function of prosthecae in *alphaproteobacteria*
11. Explain the function of heterocysts in term of both photosynthesis and nitrogen fixation.
12. Differentiate between a prion and a viroid
13. Discuss the important role of bacteria in nitrogen fixation and nitrification
14. Identify and illustrate six basic shapes of prokaryotic cells
15. Compare two kinds of extremophile
16. List six common features of viruses
17. List three significant roles played by methanogens in the environment
18. List three features of *Archae* that distinguish them from bacteria

19. **Illustrate** how Bdellovibrio attacks other Gram negative bacteria
 20. Enzymes of extremophiles are often used in molecular biology, why?
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- Q2. Discuss prions and the role they play in human disease.
 - Q3. Compare the lytic and lysogenic cycle in bacteria.
 - Q4. Discuss the challenges of culturing viruses in the laboratory.