

Cork Institute of Technology
Higher Certificate in Science in Applied Biology – Award
(NFQ – Level 6)
Summer 2006
Environmental Science
(Time: 2 Hours)

Instructions
Answer FOUR questions. All questions carry
equal marks.

Examiners: Dr. A. Petersen
Prof. R. Fitzgerald

- Q1. (a) Define or explain the following population terms:
Deathrate; Natality (birthrate); Age distribution; Sex ratio.
(4 x 1.5 marks)
- (b) Calculate the annual rate of natural increase in a population of 50,000 people, whose deathrate each year is 750 and where birthrate is 1500 per year. (5 marks)
- (c) Say which two factors may change/influence the annual rate of natural increase. (2 marks)
- (d) Write an informative account of human population growth, highlighting and explaining the differences between developed and developing countries. (12 marks)
- Q2. (a) List the major unsustainable practices/trends that threaten the global environment. (4 marks)
- (b) Write an informative account of TWO of your listed threats. (2 x 8 marks)
- (c) Clearly explain what is meant by the term “sustainable yield”. (5 marks)
- Q3. (a) Outline the structure and gaseous composition of the Earth’s atmosphere. (5 marks)
- (b) Review the biological importance of ozone and describe the predicted consequences of global climate change. (20 marks)
- Q4. (a) Define the following terms: (a) Hazard (b) Health

- (c) Mortality (d) Morbidity
(e) Epidemiology (5 marks)

(b) Provide a summary account of the leading causes of mortality in most developed countries (MDC) and less developed countries (LDC). (5 marks)

(c) Write a concise account of chemical hazards in relation to human health. (15 marks)

Q5. (a) List at least 5 major classes of pollutants in surface waters in Ireland. (5 marks)

(b) Discuss the significance of and factors influencing dissolved oxygen levels in water. (8 marks)

(c) Write a detailed essay on the problems and effects of eutrophication in Irish lakes. (12 marks)

Q6. (a) Briefly describe the historical approach to wastewater disposal. (5 marks)

(b) Write a descriptive account of the secondary treatment of sewage and indicate its efficiency in removing undesirable constituents. (15 marks)

(c) Outline the use of chlorine as a disinfectant. (5 marks)