

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Autumn Examinations 2011

Module Title: Environmental Science and Industrial Hygiene (CA)

Module Code: ENVI7001

School: Biological Science

Programme Title: Bachelor of Science in Applied Biosciences & Biotechnology – Year 3
Bachelor of Science in Food Science & Technology – Year 3
Bachelor of Science in Agriculture – Year 3

Programme Code: SBIBI_7_Y3
SFSTE_7_Y3
BAGRI_7_Y3

External Examiner(s): Dr Anne Nelson
Internal Examiner(s): Dr Rosemary Rea

Instructions: Answer any 3 questions below. All questions carry equal marks.

Duration: 2 Hours

Sitting: Autumn 2011

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. Air pollution is the release of chemicals and particulates into the atmosphere. Discuss this statement using the following headings:

- Primary and secondary air pollutants (**6 marks**)
- Smog - make reference to similarities between London smog (1952) and Donora smog (1948) (**6 marks**)
- Acid Rain (**6 marks**)
- Greenhouse effect (**6 marks**)
- The role of the Environmental Protection Agency (**6 marks**)

(30 marks)

Q2. Discuss the disposal methods for municipal solid waste and compare the advantages and disadvantages of each. Define source reduction and provide two examples.

(30 marks)

Q3. (a) List the categories of pollutants found in wastewater and discuss the treatment of wastewater.

(20 marks)

(b) Describe a suitable method for the biological assessment of water quality.

(10 marks)

(30 Marks)

Q4. Discuss the generation of energy using nuclear power. Include in this discussion:

- The nuclear fuel cycle (**6 marks**)
- Fission and fusion reactions (**6 marks**)
- Operation of a nuclear power plant (**6 marks**)
- Advantages and disadvantages of nuclear fuel (**6 marks**)
- Compare and contrast coal and nuclear power as sources of energy (**6 marks**)

(30 marks)

Q5. *'Occupational (Industrial) Hygiene is the discipline of anticipating, recognising, evaluating and controlling health hazards in the working environment with the objective of protecting worker health and well-being and safeguarding the community at large.'*

Discuss this statement using the following headings:

- Aims of Industrial Hygiene (**4 marks**)
- Classes of environmental stresses (**8 marks**)
- Potential routes of entry for harmful agents into the body (**8 marks**)
- Control of Hazards (**10 marks**)

(30 marks)