

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Autumn Examinations 2013/14

Module Title: Environmental Science and Industrial Hygiene CA

Module Code: ENVI7001

School: Science

Programme Title: BSc in Applied Biosciences with Biotechnology
BSc in Nutrition and Health Science
BSc in Food and Health Science
BSc in Agriculture

Programme Code: CR_SBIBI_7
CR_SNHSC_8
CR_SFSTE_7
CR_BAGRI_7

External Examiner(s): Dr. Tom O'Connor
Internal Examiner(s): Dr. Rosemary Rea, Emma Gabriel

Instructions: Answer **question 1** and **2** other questions. All questions carry equal marks.

Duration: Time = 2 hours

Sitting: Autumn 2014

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.** Discuss the purpose and method of the following tests used to assess the quality of a water sample:
- Microbiological Examination (coliforms) **(30 marks)**
 - Suspended solids **(20 marks)**
- Q2.** Discuss the following:
- Secondary treatment (activated sludge) of wastewater **(20 marks)**
 - Traditional sanitary landfill for disposal of municipal solid waste **(14 marks)**
 - Waste to Energy Incineration for disposal of municipal solid waste **(16 marks)**
- Q3.** (a) List the aims of industrial hygiene and classes of environmental stresses that can be encountered in the workplace **(12 marks)**.
- (b) Discuss thermal inversion **(14 marks)**.
- (c) Define point and non-point sources of water pollution. Discuss the causes and impact of eutrophication on a water body **(24 marks)**.
- Q4.** Discuss the generation of energy using nuclear power under the following headings:
- Nuclear Fuel Cycle **(10 marks)**
 - Fission and Fusion Reactions **(10 marks)**
 - Operation of a pressurised water reactor **(20 marks)**
 - Disposal of radioactive waste **(10 marks)**