

Ollscoil na hÉireann, Gaillimh
National University of Ireland, Galway

SUMMER EXAMINATIONS, 2002

Third University Examination In Engineering (Environmental)
M.Sc. Examination in Biomedical Science

CH306 - ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

Professor J. Evans
Professor R. N. Butler
Professor M. J. Hynes
Dr. J. Simmie
Dr. D. Leech

Time allowed: **Two** hours

Answer **four** questions

Marks: All questions carry equal marks.

1. Answer (a) and (b).
 - (a) Sketch the essential features of a sanitary landfill.
 - (b) Decomposition of organic matter in the landfill produces:
 - (i) What gas?
 - (ii) In what quantities?
 - (iii) When does the production of gas peak?
 - (iv) What can the gas be used for?
2. Write a short note on the function of the pH electrode.
3. Describe the means by which the Galway water supply is treated prior to distribution to householders. Outline any advantages and/or disadvantages of the procedures used.
4. Describe the basis for and the impact of the Nitrate Directive on Irish farming. What option should the Government take with respect to Nitrate Vulnerable Zones (NVZ)? Explain your answer.
5. Describe the advantages and disadvantages of the major classes of 'pesticides'.
6. Describe the key features of an environmental management system. Refer in your answer to ISO 14001:1996.
7. Write a short account of endocrine disrupters.