

Semester I Examinations, 2003/2004

Exam Code(s)	4EV2
Exam(s)	4th Year B.Sc. (Environmental Science)
Module Code(s)	MI403
Module(s)	Environmental Microbiology and Waste Management I
Paper No.	1
Repeat Paper	
External Examiner(s)	Dr. Peter D. Moore
Internal Examiner(s)	Professor E. Colleran

Instructions:

Answer THREE Questions

**Please indicate clearly the numbers of the questions
answered on the first page of your Answer Book**

Duration	3 hrs
No. of Answer books	

Requirements:

Handout	
MCQ	
Statistical Tables	
Graph Paper	
Log Graph Paper	
Other Material	

No. of Pages	2
Department(s)	

- Q.1** Compare and contrast the use of chlorine and ozone for disinfection of potable water supplies. In your answer, focus on practical problems and advantages/disadvantages associated with both processes (20 marks).
- Q.2** Critically discuss the role of activated sludge systems for the aerobic biological treatment of domestic sewage (20 marks).
- Q.3** Discuss the use of septic tanks for small-scale sewage treatment in Ireland (15 marks).
Critically comment on the growing use of Puraflow Systems as “add-on” units to septic tanks (5 marks).
- Q.4** Compare and contrast the use of chemical and biological methods for phosphate removal from wastewater (20 marks).
- Q.5** Discuss the application of vertical and horizontal reed beds for domestic sewage treatment and comment on their advantages and disadvantages (20 marks).
- Q.6** (i) Describe what you understand by the collective term “sewage sludge” (5 marks).
(ii) Discuss the advantages, disadvantages and potential use of sewage sludge in agriculture (15 marks).
- Q.7** (i) Describe the various successive stages involved in anaerobic digestion of organic compounds (10 marks).
(ii) Discuss the role of anaerobic digestion in energy recovery from, and stabilisation of, sewage sludge (10 marks).