

OLLSCOIL NA hÉIREANN**NATIONAL UNIVERSITY OF IRELAND, GALWAY**

SEMESTER II EXAMINATIONS, 2003

Fourth Year (Denominated B.Sc. Degree in Marine Science; Honours)*MR 401: Advanced Topics Paper II*

Prof. M.J. Dring
and the internal examiners

Time allowed: 3 hours

Answer four questions, at least one from each section

Section A

1. Write an essay on the bacterial communities at the sediment/water interface in the deep ocean. Where does their food supply come from, what do they do, how are they adapted to their environment and how do we study them?
2. Describe the summer phytoplankton distribution on the continental shelf around Ireland.
3. Write a brief essay on Marine Biodiversity.

Section B

4. Describe, with suitable examples, the short and long-term effects of major oil pollution incidents.
5. What are the main contamination problems in coastal waters, with particular reference to the Irish Sea?
6. ***EITHER***
Trace metals may be potentially bio limiting or toxic in the marine environment, discuss.

OR

(MR401 continued)

(OR)

Chemical speciation is of major importance in determining biohazard. Discuss this statement with reference to arsenic and mercury.

Section C

7. Write an essay describing genetic profiling technology. List the potential applications of this technology in biological studies.
8. "The analysis of small subunit ribosomal RNA gene sequences has proved a useful tool for studies of marine bacterial communities". Discuss.
9. Discuss critically the methods that could be used to analyze the microbial communities of the deep sub-seafloor biosphere.