

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 2003

**B.Sc. (HONOURS) DEGREE
GEOLOGY
EARTH SCIENCES**

PAPER THREE (GE406, GE422)

Prof. B.P. Williams
Prof. P.D. Ryan
Prof. D.M. Williams
Dr. P. Orr

Time allowed: **THREE HOURS**

Answer **four** questions: **two** from Section A, and **two** from Section B.
Please use separate Answer Books for each Section.

Illustrate your answers with neat sketches and diagrams where appropriate.

SECTION A (GE 406)

1. Assess the contribution of the fossil record to our understanding of the evolution of hominids.
2. Write an essay on the affinities and functional morphology of conodonts.
3. "The evidence for an explosive radiation (of marine Metazoa in the Cambrian) may seem overwhelming, but it does depend on the geological record providing a true narrative of events" (Fortey et al. 1996). Discuss this statement.
4. Write short essays on two of the following
 - (a) The extinction of the Neanderthals
 - (b) What defines life?
 - (c) The theory of dexiothetism
 - (d) "the affinities of Ediacaran organisms are unknown - or rather the affinities are well known to individual experts, each of whom has a different opinion" (Erwin 2001). Discuss this statement

SECTION B GE422

5. Discuss sea-level changes in the Quaternary.
6. Outline the controlling factors in the formation of ripple marks.
7. Using named examples describe the formation and evolution of major deltas.
8. What sedimentary processes operate on submarine fans? How do these control the distribution of facies on such fans?