

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 2003

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

PAPER FOUR (GE406/411/412/417/422)

Prof. B.P. Williams
Prof. P.D. Ryan
Prof. D.M. Williams
Dr. P. Orr
Dr. M. Feely
Dr. S. Baxter
Dr. K. Moore

Time allowed: **THREE HOURS**

Write an essay on **one** of the following topics:

1. Sequence stratigraphy
2. The economics of sedimentology
3. How important are exceptional faunas to our understanding of the history of life on earth?
4. " ... experts still cling to the idea that life began early in the Earth's 4.5 billion year history. This stance looks like an act of faith, given that the origins of life remain a mystery" (Jon Copley, New Scientist 22 February 2003). Discuss this statement.
5. Metamorphic petrology provides a focal point for the student of crustal evolution.
6. 'Granite is not a rock which was simple in its origin but might be produced in more ways than one' (J.B. Jukes, 1863)
7. The formation and exhumation of high-pressure and ultra-high pressure metamorphic terranes during continental collision
8. Write an essay on how deep geophysical surrounding of the lithosphere can aid in constructing tectonic models in an ancient orogen.

9. 'Human exploitation of fossil fuels has an insignificant effect on the Earth'. Discuss.
10. Compare and contrast the geological hazards related to (a) constructive plate margins, (b) conservative plate margins, (c) destructive plate margins and (d) hot spot volcanoes.