

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 2000

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

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

Prof. J.F. Dewey
Prof. P.D. Ryan
Dr. D.M. Williams
Dr. P. Orr
Dr. M. Feely
Dr. K. Moore

Time allowed: Three hours

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

1. Sedimentology and Economics
2. Evolutionary biology is better served by molecular phylogeny than palaeontology: to what extent do you agree or disagree with this statement?
3. Plate tectonics can account for the observed global distribution and diversity of metamorphic facies.
4. Uses of Sedimentary geochemistry.
5. "Palaeobiologists over emphasise the importance of exceptionally preserved biotas in their study of the history of life on Earth". Discuss this statement.
6. The importance of isostasy in continental tectonics.
7. The uplift of high pressure metamorphic rocks.
8. Discuss the importance of mineral enrichment in terms of the rock cycle, and with reference to economic development; location of industry, industrial growth of a nation, substitution of materials, etc. Include your personal fieldwork experiences as examples of mineralization and use diagrams where appropriate.
9. Describe the population and environmental hazards associated with the different igneous provinces. Use your knowledge of magma composition from basaltic to rhyolitic to explain the phenomena you describe.