

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 2001

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

PAPER THREE (GE 417)

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

Time allowed: Three Hours

Answer three questions, **one** from **Section A** and **two** from **Section B**.
You should spend 80 minutes on question one and about 50 minutes each on the two questions from Section B.

SECTION A

1. It is convenient to view changes upward changes in the lithologies of the circum Troodos sedimentary cover as a response to shallowing sea levels driven by tectonic uplift. This disguises the lateral complexity in depositional environments and thus lithofacies that can be generated at any given time. Discuss these statements. Note that the use of sketch diagrams, particularly three-dimensional block diagrams, is encouraged. You are provided with a list of localities with which you should be familiar, Your text and illustrations should make explicit reference to this.

OR

Summarise the economic potential of Cyprus geology in terms of both:

- (a) ophiolite stratigraphy, and
- (b) sedimentary stratigraphy.

Choose one hard rock economic deposit and one soft rock economic deposit and describe their formation, using diagrams were appropriate. Use examples that you have seen in the field.

SECTION B

2. Discuss the various models, which account for the formation of sedimentary basins in continental lithosphere.
3. Show, citing examples, how the evolution of a triple junction along a plate margin in continental lithosphere can affect the geological evolution of this margin.
4. Write an essay on 'Orogenic Collapse' OR on 'The Uplift of high and ultra-high pressure metamorphic rocks'
5. Give an account of ONE of the major orogenic events to have affected Europe during the Phanerozoic.