

National University of Ireland, Galway  
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 2001

**2nd SCIENCE  
GEOLOGY (GE212)**

**PAPER ONE**

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Prof. P.D. Ryan  
Prof. Mike Williams  
Dr. M. Feely

Time allowed: Three hours

Answer four questions: **two** from Section A and **two** from Section B.

Allow about 45 minutes for each question.

Please use separate Answer Books for each section.

Illustrate your answers with neat sketches and diagrams where appropriate.

**SECTION A**

1. Discuss the geological and environmental problems associated with the disposal of radioactive waste.
2. What geological features control the movement of groundwater in limestone areas. How may this movement be measured?
3. Describe the Pleistocene history of Ireland.
4. Briefly outline the geological evolution of Ireland during the lower palaeozoic.

## SECTION B

5. Give an account of the symmetry elements present in the holosymmetric class from each of the seven crystal systems.
6. Write an illustrated account of the atomic structural classification of the Silicates. Comment on the development of cleavage in the Amphibole and Pyroxene Groups.
7. Show how Bowen's Reaction Series provides a framework for the classification of some of the common igneous rocks.
8. Write short notes on the following:
  - (a) Open and closed forms
  - (b) Hornfels
  - (c) Phenocrysts
  - (d) Porphyroblastic texture.