

National University of Ireland, Galway  
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 1999

3rd SCIENCE  
GEOLOGY [GE 312]

PAPER THREE

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

Time allowed: Three hours

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

Illustrate your answers with diagrams where appropriate.

SECTION A

1. Discuss the principles and uses of sedimentary geochemistry.
2. Critically review the basic criteria involved in sequence stratigraphy.
3. Briefly discuss the influence of tectonics on sedimentation.
4. Describe the principal environments of limestone formation.

## SECTION B

5. Discuss between Konzentrat and Konservat Lagerstätten (10% of marks) and  
Discuss, using examples from the fossil record, the different criteria that can be used to classify Konservat Lagerstätten (90% of marks).
6. Distinguish between life, neighbourhood and transported fossil assemblages. What taphonomic indices could be studied to discriminate between each?
7. Discuss, using examples with which you are familiar, how study of the ichnofauna can assist in discriminating between different palaeoenvironments.
8. The biogeographic distributions of fossil organisms have been explained by reference to two main models. Outline the basic principles of each model.