

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH
CHRISTMAS EXAMINATIONS 1ST SEMESTER 2002

2nd SCIENCE
Geology
Structural and Palaeontology (GE211)

PAPER ONE
Prof. B.P.J. Williams
Mrs Emma Gallagher
Mr Pat O'Connor

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. Write short notes on **4** of the following a) axial planar cleavage b) interlimb angle in folding c) strike-slip faulting d) true dip versus apparent dip e) compass-clinometer f) true thickness versus vertical thickness of a bed g) way up criteria.
2. Describe, with diagrams, the various methods of calculating the strike lines for a dipping bed that crops out on the land surface
3. Describe, with the aid of appropriate diagrams, practical methods used in differentiating between folded and faulted strata on a map.
4. Discuss the episodic nature of the stratigraphic record. In your answer refer to the different types of stratigraphic break and their significance.

SECTION B

5. Archaeocyathans and sponges dominated Cambrian reefs. Compare and contrast the morphology and palaeobiology of both groups.
6. Discuss buoyancy in relation to the success of the Class Cephalopoda.
7. Discuss the diverse feeding habits of the Class Echinodermata using examples you have studied to illustrate your answer.
8. Describe using illustrations the main life modes of the brachiopods. Why were bivalves more successful than brachiopods after the Permian extinction?