

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH
CHRISTMAS EXAMINATIONS 1ST SEMESTER 2000

2nd SCIENCE
Geology
Structural and Palaeontology

PAPER ONE
Prof. J.F. Dewey
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 four of the following
pitch, true thickness, isopachs, clinometer, inlier, magnetic north, the left hand rule.
2. Draw a sketch of a folded sequence of rocks and clearly label the following features:
ANTIFORM, SYNFORM, AXIS, AXIAL SURFACE, HINGE, LIMB. How can we use strike lines drawn on the fold limbs to identify the fold axis and the plunge of the hinge.
3. Describe, with the aid of diagrams, the different fault types. How may one calculate the throw of a non-rotational fault that displaces a planar surface.
4. Outline, using sketches, the various types of stratigraphic break and describe how each occurs.

SECTION B

1. Bivalves and brachiopods appear similar but belong to different phyla. Describe the main differences between each group in their anatomy and lifestyles.
2. Outline using examples the main modes of taphonomic preservation in fossil deposits.
3. What is a parazoan? Your answer should include discussion of sponges, archaeocyathans and stromatoporoids.
4. Describe the morphology of a typical trilobite and briefly note the main evolutionary trends within the group.