

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SPRING EXAMINATIONS 1999

**3RD CIVIL ENGINEERING
GEOLOGY (Part 2)**

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SECTION C: Sedimentary rocks and processes

Answer EITHER question 3 OR question 4.

3. Describe the geological requirements for accumulation of hydrocarbons.
4. Describe, giving examples, how study of present day sedimentation allows us to interpret depositional environments throughout the geological record.

SECTION D: Metamorphic rocks and processes

Answer EITHER question 5 OR question 6.

5. Describe the changes in mineralogy which are observed in argillaceous rocks (mudstones) with increasing dynamic metamorphism.
6. Compare the effects of contact metamorphism on mudstone, limestone and sandstone.

SECTION E: Structural geology

Answer EITHER question 7 OR question 8.

7. Draw labelled diagrams to illustrate the features of (i) a normal fault and (ii) an open fold.
8. Use elastic rebound theory to describe how stress is preserved in different rock types.

SECTION F: Global geology

Answer EITHER question 9 OR question 10.

9. Describe, using diagrams, the characteristics of constructive plate margins.
10. In an area of poor exposure, a geologist mapping in the field observes a variety of sedimentary rocks: Jurassic limestones, Devonian shales, Triassic sandstones and Carboniferous limestones. How did (s)he work out the ages of the rocks? Place these in stratigraphical succession; oldest at the base of the column, youngest at the top.