

National University of Ireland, Galway
OLLSCOIL NA hÉIREANN, GAILLIMH

SUMMER EXAMINATIONS 1999

2nd 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 sedimentary lithologies (rock types) and structures that are likely to be observed in fluvial (river) environments.
4. How does coal form? When observed in the rock record, what lithologies (rock types) is it normally associated with?

SECTION D: Metamorphic rocks and processes

Answer EITHER question 5 OR question 6.

5. Describe the different physical conditions which result in contact, dynamic and regional metamorphism. Give examples of the lithologies produced in each type of metamorphism.
6. Describe how cleavage forms in rocks. Illustrate how cleavage is manifested in different rock types.

SECTION E: Structural geology

Answer EITHER question 7 OR question 8.

7. Draw labelled diagrams to illustrate the features of (i) a reverse fault and (ii) an open fold.

8. Draw labelled diagrams to illustrate the features of (i) an angular unconformity and (ii) isoclinal folds.

SECTION F: Global geology

Answer EITHER question 9 OR question 10.

9. Describe, using diagrams, the characteristics of destructive plate margins.
10. In an area of poor exposure, a geologist mapping in the field observes a variety of sedimentary rocks: Cambrian shales, Triassic evaporites, Devonian shales, Jurassic limestones 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.