

GLY-302 PETROLOGY

2nd Hour Exam Study Guide

Concepts and Facts:

Classification of detrital sedimentary rocks (i.e. the 3 matrix-based diagrams and how to use them)

Characteristics of textural maturity including specific hierarchy of: matrix removal, sorting, rounding.

Definitions of immature, submature, mature, and supermature sediments.

Depositional environment (for clastic rocks) and textural maturity (see handout).

How the phi scale is defined and how to use it.

How to interpret the standard deviation on a grain size analysis (it's relation to sorting).

Some controls on sorting.

Facts and controls on cements in detrital sedimentary rocks.

Causes for color in mudrocks.

Names of (4) common clay minerals in sedimentary rocks & your basic clay forming reaction.

What chemical weathering does to the chemistry of rocks (what's released & what's left behind).

Specific reason why shale is the most abundant sedimentary rock type.

How mineral composition is used in provenance studies.

What is the ZTR index and what can it tell you about the sedimentary rock.

How metamorphic accessory minerals can sometimes be used to interpret the unroofing of mountain belts.

Sedimentary structures and what can be interpreted from them.

Classification of limestones (i.e. the modified Dunham diagram and how to use it)

Specific reasons why limestone typically forms in warm water.

Specific reasons why limestone typically forms on the edge of a continent.

Origin of dolostone including the specific dolomite forming reaction and controls on it.

Chemical details on Dorag dolomitization.

Basic understanding of the reflux model for evaporite formation.

Sequence of evaporite mineral (calcite, gypsum, halite) precipitation.

What role BIF's played in changes in ocean chemistry and composition of our atmosphere.