

## G202 Quiz 1 Study Guide

### Recommended Study Techniques

- (1) go over pre-lab questions / study them
- (2) review the "How to Study" sheet handed out at beginning of term
- (3) use the concepts below as a guide to help you focus on your notes
- (4) memorize terms and concepts
- (5) go over your on-line homework questions / answers, make sure you know the answers
- (6) go back over the labs and make sure you can do the tricks / skills
- (7) review some of the important figures in your lab manual and text
- (8) go to the lab and look at the lab answer keys, minerals and rocks, work with the samples in lab
- (9) review the techniques for working with maps / air photos
- (10) change your socks and drink plenty of water
- (11) avoid alcoholic beverages / parties the night before the quiz
- (12) clean your room....

**NOTE: I would spend a minimum of 4-5 hours studying for this quiz if I wanted to do well.**

### Part 1. Lecture Concepts

#### Key Words

Environmental Spheres	map view	carbonates
Lithosphere	cross-section view	oxides
Biosphere	3-D view	sulfates
Hydrosphere	metric / English units	halides
Age of the Earth	mass	rock cycle
Ultimate Driving Forces	temperature	igneous
Climate	density	metamorphic
Gravity	rock	sedimentary
Tectonics	mineral	magma / lava
Crustal Composition	element	fast-cooling lava
Core	compound	slow-cooling magma
Mantle	atom	two-phase cooling
Crust	nucleus	extrusive / lava
Oceanic Crust	electron	intrusive / magma
Continental Crust	proton	weathering
Asthenosphere	neutron	sediment
Lithosphere	mineral properties	sediment transport
"Plates"	crystal form	sediment burial
Scientific Method	luster	lithification
Hypothesis	color	fossil
Experimental Design	streak	metamorphic
Unit Algebra	hardness	foliation
Unit Conversion	cleavage	non-foliated
Graphing	fracture	heat-pressure-chemical
Equation of Line	specific gravity	granite
Slope of Line	rock forming minerals	basalt
$y=mx + B$	silicates	obsidian

sandstone	chemical
shale	sediment size fractions
limestone	gravel
siltstone	sand
gneiss	silt
slate	clay
marble	grain shape
quartz	grain sorting
feldspar	rock types
muscovite	sandstone
biotite	conglomerate
Plate Tectonics	shale
Continental Drift	limestone
Plate Boundaries	evaporites
Convergent	crystalline vs. microcrystalline
Divergent	coal
Transform	clastic / nonclastic
Spreading Center	marine
Subduction Zone	nonmarine
Volcanic Arc	fluvial
Mountain Building	lacustrine
Weathering	glacial
Erosion	sedimentary structures
Sediment	methods of transport
Agents of Transport	bedload
Wind	suspension
Water	dissolved load
Ice	cross-stratification
Gravity	graded bedding
Physical Weathering	reverse grading
rock fragmentation	normal grading
frost wedging	asymmetric ripples
unloading/release	symmetric ripples
Thermal Expansion	flute casts
Root Wedging	cast vs. mold
Animal Burrowing	mudcracks
Chemical Weathering	raindrop imprints
carbon dioxide	Sedimentary Environments
carbonic acid	river
water	tidal flat
Clay (size / mineral)	lake
weathering	estuary
sediment	beach
erosion	shelf
lithification	reef
compaction	deep ocean
cementation	
Sed. Rock types	
Detrital	
Biochemical	

## Questions for Thought

How do the three ultimate driving forces relate to anything that we've covered since the beginning of the term?

What is the elemental composition of the Earth's crust? atmosphere?

What is the difference between a rock and mineral? Can you sketch the rock cycle yet?

What is the controlling factor of mineral properties? Why are they different?

What is the crust anyhow? Can you draw a diagram of the interior of the Earth (core, mantle, asthenosphere, crust)?

What factors influence how fast a rock will weather? Do all rocks weather at the same rate?

What is the difference between weathering and erosion?

What are the two meanings of the word "clay"?

What do rocks inherently decompose? Why are clay minerals stable at the Earth's surface?

What is the sedimentary process from start to finish?

How does transport energy relate to grain size of deposits? (e.g. would you find boulders in the deep ocean?)

What are the basic marine and nonmarine sedimentary environments?

What are sedimentary structures and how are they used to reconstruct sedimentary environments?

What type of environment do the various sed. rock types form? e.g. sandstone, conglomerate, evaporites, coal, mudcracks, limestone, etc. where would these rocks form at the earth's surface?

## 2. Lab Skills to Work On

Applying the scientific method

basic metric / english unit conversion

graphing

drawing sketch maps and cross-sections

Identifying basic mineral properties

    which minerals / rocks fizz?

    metallic vs. nonmetallic

    light vs. dark colored

    1 or 3 directions of cleavage

can you do a basic mineral hardness test?

Could you identify an igneous, sedimentary vs. metamorphic rock?

what about the three diff. types of sed. rocks?

Can you estimate: grainsize? sorting? grading? angularity?

What about basic paleocurrent directions? How can you tell which way the fluid was moving when the sediment was deposited?

What about recognizing some basic sedimentary structures?

Associating a specific rock type to a possible sedimentary environment?