

## ROCK/MINERAL EXAM STUDY GUIDE

This exam will have two parts:

- 1) 50(ish) MC questions (Dec.15<sup>th</sup>)
- 2) 40(ish) rock and mineral ID's (Dec.17<sup>th</sup>)

Things to do to aid in your studying...

Complete the following numbered objectives.

1.
  - a. Be able to explain how and where a granite is (felsic magma) formed?
  - b. Be able to explain how and where a diorite is (intermediate magma) formed?
  - c. Be able to explain how and where a basalt is (mafic magma) formed?

Be sure you use the words **assimilation, partial melting, magma mixing, decompressional melting,** and **differentiation** in your answer!

2. Draw or interpret a picture of a regressive or transgressive sedimentary sequence and explain why it looks like it does.
3. Come up with a way to distinguish between **shale, slate,** and **phyllite.**
4. Come up with a way to distinguish between **halite, fluorite, quartz, gypsum** and **calcite.**
5. Come up with a way to distinguish between **chemical limestone, sandstone, marble** and **quartzite.**
6. Come up with a way to distinguish between **pumice** and **volcanic tuff.**
7. Come up with a way to distinguish between **granite** and **gneiss**
8. Make a list of sedimentary rocks and sedimentary structures you would find at the following environments:  
Deep water marine, near shore marine, desert, mountain stream, estuary.
9. Be able to...
  - a. identify the basic rocks and minerals we studied.
  - b. describe the basic chemistry behind a mineral and the definition of a mineral.
  - c. describe how igneous rocks can form (basalt vs. diorite vs. granite).
  - d. describe how sedimentary rocks are formed and how they relate to a paleo-environment.
  - e. describe how metamorphic rocks are related to a unique pressure/temperature environment.
  - f. describe the different types of volcanoes and what kind of rocks they produce.

Vocabulary: differential melting, decompressional melting, igneous rocks, sedimentary rocks, intrusive, extrusive, porphyritic, vesicular, frothy, felsic, mafic, intermediate, Bowen's reaction series, aphanitic, phaneritic, pegmatitic, geothermal gradient, mud cracks, graded bedding, cross bedding, streak, luster, cleavage, hardness, stratovolcano, cinder cone volcano, shield volcano, pyroclastic flow, viscosity of magma, Aa, pahoehoe, caldera, crater, sediment, boulder-pebble-sand-silt-clay, lithification, cementation, compaction, poorly vs. well-sorted, carbonates, evaporates, organic sedimentary rock formation, foliation, differential stress, gneissic texture, schistose texture, slaty cleavage, regional metamorphism, contact metamorphism, metamorphic facies, isotope, atomic number, atomic mass, sub-atomic particles