Exam 1 Review

I. Chapter 1 (Introductory Principles)

A. Big Bang

1. Be able to describe what is meant by an apparent redshift and how is applied to the big bang
    a) Why does the observed redshift suggest the possibility of a big bang
2. When did the big bang occur?
3. How old is our solar system?

II. Chapter 2 (Earth Materials)

A. Chemistry

1. Be able to describe the structure of an atom
    a) what is a proton and where is it located?
    b) what is a neutron and where is it located?
    c) what is a electron and where is it located?
    d) What is the relationship between the number of electrons and the number of protons within an atom?
    e) What is the Atomic Number of an atom?
    f) What is the Atomic Mass of an atom?
2. Bonding
    a) Be able to describe ionic bonding
    b) be able to describe covalent bonding.

B. Minerals

1. What is the definition of a mineral?

   a. What is the difference between a mineral and a rock?

2. Be able to explain the differences between the major mineral groups (silicates, carbonates, oxides...etc.)

C. Igneous Rocks

1. What is an igneous rock?
2. How does the rate of cooling affect the texture of an igneous rock?
3. How does temperature affect the mineral composition of an igneous rock?
4. How does mineral growth within a cooling magma affect the properties of the magma?
5. What is meant by partial melting?

III. Chapter 6 (Sedimentary Rocks)

A. What is a clastic sedimentary rock?

B. What is a chemical sedimentary rock?

C. How do clastic sedimentary rocks form?

1. What terms are used to describe the grain size of clastic sedimentary rocks
2. What do grain sizes tell us about the environment in which the sediment was deposited?
3. What does sorting refer to?
4. What does rounding refer to?

D. What is the difference between chemical and biochemical sedimentary rocks

E. What are sedimentary structures

1. Describe bedding(stratification)
    a) define: Beds, lamination
2. Describe how graded bedding forms
3. Describe how cross-bedding forms
    a) Tabular cross beds
    b) trough cross beds
    c) herringbone cross beds
4. Describe how ripple marks form
    a) current ripple marks (asymmetrical)
    b) wave-formed ripples (symmetrical)
5. Describe how mud cracks form
6. What are biogenic sedimentary structures?
7. How do the major sedimentary environments differ from one another?