Exam 2 Review

I. Chapter 3 (Plate Tectonics)

A. Explain paleomagnetism.

1. What are polar wandering curves and why were they useful in showing continental drift?
2. What is a polar reversal?
3. How was paleomagnetism used to show sea-floor spreading?

B. Plate Tectonics Theory

1. What is a lithospheric plate?
    a) What is the difference between continental and oceanic plates.
2. What is a divergent plate boundary?
    a) What geologic feature occur at divergent plate boundaries?
3. What is a convergent plate boundary?
    a) What geologic features occur at oceanic-oceanic convergent plate boundaries?
    b) What geologic features occur at oceanic-continental convergent plate boundaries?
    c) What geologic features occur at continental-continental convergent plate boundaries?
4. What mechanisms are responsible for plate tectonics?
    a) Describe convection models
    b) Slab-pull
    c) Ridge push

II. Geologic Time

A. Relative time

1. be able to define relative time

2. be able to define and apply the six principles of relative dating:
    a) superposition
    b) original horizontality
    c) lateral continuity
    d) cross cutting
    e) inclusion
    f) fossil succesion
3. be able to describe Neptunism
4. be able to describe Catastrophism
5. be able to describe Uniformitarianism

B. Absolute time

1. be able to define absolute time
2. be able to describe radiometric dating
    a) be able to define
        (1) alpha decay
        (2) beta decay
        (3) electron capture
    b) Be able to define what a half-life is
        (1) what is a parent isotope
        (2) what is a daughter isotope
    c) be able to construct a generic half-life plot
    d) be able to determine the absolute age of a rock or fossil using isotope abundance and half-life information
3. be able to describe carbon dating

4. You should also know what materials can be radiometrically dated and what the dates represent.

III. Chapter 5 (Rocks, fossils, and time)

A. Rocks

1. Be able to describe what is meant by the term "geologic record."
2. Be able to define stratigraphy:
   a) how is composition, origin, age relationships, and geographic extent used in stratigraphy?
   b) Be able to describe what a bedding plane is
      (1) what do individual bedding planes signify within the geologic record
   c) be able to define and apply **principle of superposition**
   d) be able to define and apply the **principle of inclusion**
   e) be able to distinguish between a buried lava flow and a sill using superposition and inclusions
   f) be able to define unconformity
      (1) be able to define and explain the formation of a(n):
         (a) disconformity
         (b) nonconformity
         (c) angular unconformity
   g) be able to define the principle of lateral continuity
   h) be able to define sedimentary facies
3. be able to explain/describe what a marine transgression is
   a) what effect does a marine transgression have on marine facies
   b) what sequence would you expect to find as a result of a marine transgression

c) what is a finning upward sequence?

d) what are the causes of marine transgressions

4. be able to explain/describe what a marine regression is

a) what effect does a marine regression have on marine facies

b) what sequence would you expect to find as a result of a marine regression

c) what is a coarsening upward sequence?

d) what are the causes of marine regressions

B. Fossils

1. be able to describe what a fossil is

a) be able to explain the difference between body fossils and trace fossils

b) be able to explain and give examples of altered remains and unaltered remains

c) Define the terms:

(1) recrystallization

(2) permineralization

(3) replacement

(4) carbonization

(5) mold

(6) cast

d) be able to describe what is meant by the term "fossil record"

e) be able to describe the conditions necessary to produce fossils

f) be able to define the **principle of fossil succession** and explain how it is used in relative time.

g) be able to define/describe a fossil assemblage

C. Stratigraphic terminology

1. be able to describe a lithostratigraphic unit
   a) what is a formation, member, bed
2. be able to describe a biostratigraphic unit
   a) what is a biozone
3. be able to describe a timestratigraphic unit
   a) what is a system
4. be able to describe time units
   a) eons, era, period
5. What is correlation?
6. what is the difference between time-stratigraphic correlation and lithostratigraphic correlation
7. How are fossil assemblages used in time-stratigraphic correlation
   a) what is the range zone
   b) what is the geologic range
   c) what is a concurrent range zone