2010 Barge^2 Earth Science 1st Semester Final Review Questions

Be able to read Topographic maps. Know what contour lines and contour intervals mean.

Compare and contrast how Heat is transferred through the following processes:
Conduction Convection Radiation

Describe the Composition (key gases) of the atmosphere.

What is the relationship between temperature and height (or layers)?

What is the relationship between pressure and height?

What is Coriolis Effect? How is air moved because of it?

Explain what a Low pressure system is and what a High pressure system is. Be sure to include what is happening to air at the surface of the earth and the type of weather that is associated with each system.

Using a diagram and words, explain how pressure differences cause wind.

Draw a diagram of a sea breeze and a land breeze indicating how air is moving in each instance.

Using a diagram and words explain how clouds form.

Describe the water cycle

Using a weather map (such as USA Today or maps at weather.com), identify fronts, high & low pressure systems and weather associated with each. Reasonably predict weather for different cities using the map.

What are four types of air masses, and properties of these types?

Weather Fronts
Warm / Cold / Occluded / Stalled
What does each front mean (in terms of the movement of air masses)?
What happens (in terms of weather) with each kind of front?

What is a mineral? What are the four parts of the definition?

Explain how the following are used to identify minerals:
Color; luster; streak; hardness; specific gravity; magnetic; acid

Given a sample of minerals, use your database chart of mineral properties to identify a mineral.

Describe the rock cycle – the major types of rocks and the processes that rocks go through move through the cycle (a diagram may be helpful).

Compare or contrast the following terms:

- Igneous rocks – extrusive & intrusive
- Sedimentary rocks – weathering (sediments), deposition, lithification, cementation
- Sedimentary rocks – clastic, chemical, organic
- Metamorphic rocks – foliated & nonfoliated

What are the 3 Laws of Relative Dating (original horizontality, superposition, cross-cutting relationships)
Can you identify different types of unconformities?

- Disconformity, nonconformity and angular unconformity

What are the different Types of Fossils? How can you use fossils to date the rocks?

Absolute Dating:

- Radioactivity – can you explain what radioactive dating is?
- Half Life – can you explain what a half life is? Can you use a half life to figure out how old a fossil or rock is?

Constellations

- Why aren't the same constellations visible at night all year long?
- Why are there different constellations visible during different seasons?
- What does this have to do with the orbit of the earth around the sun?
- From Chicago, how do stars appear to move across the sky?
- Be able to identify on a star chart and describe where in the sky (northern sky or southern sky) you can find the following constellations and their brightest stars:
  - Fall
    - Summer Triangle – Cygnus (Deneb), Lyra (Vega), Aquila (Altair)
    - Cassiopeia, Ursa Major, Ursa Minor
  - Winter
    - Orion (Betelgeuse, Rigel), Canis Major (Sirius), Canis Minor (Procyon), Gemini (Pollux, Castor), Auriga (Capella), Taurus (Aldebaran)

Earthquakes

- What is the difference between P and S waves?
- Are you able to find the epicenter and magnitude of an earthquake given 3 seismograms?