

Geology 101 - Fall 2008
Final Exam Questions

1. Some geological processes operate on a very short time scale. Some operate on a very long time scale. Some are somewhere between. Give examples of each, and tell how many seconds-minutes-days-years-millennia-etc. they take place. How do the different processes, short-medium-long time scale, affect and shape the earth?
2. How do layers of rock change when they experience compressional or tensional (extensional) forces? Make drawings and describe what may result in each case.
3. What are fossils? What are some different kinds? How do they form and how are they preserved? How are fossils used to determine the age of geological formations?
4. What causes winds? Describe the nature of winds associated with a high pressure center. Describe the nature of winds associated with a low pressure center. How does the Coriolis force affect winds?
5. What are continental glaciers and how are they different from mountain glaciers? What parts of the United States were covered with ice during the last major period of continental glaciation? When did this occur? What evidence do we have to show that the glaciers were once there?
6. Where does electrical energy come from in the United States today? That is, what is the major source of the electricity we use? What other sources are there, and how much do they contribute to our needs? Describe how the different sources of electricity contribute to global warming? Is it possible to have electricity without adding to the global warming problem? Describe how. Should the United States enact laws to ensure that, in the future, we get more of our electricity from wind or solar power? Why or why not?
7. What are the most common minerals in sedimentary rocks? Why? What are the most common minerals in igneous rocks? Why? What are the most common minerals in metamorphic rocks? Why? (To answer this question you should name specific minerals when appropriate, and name mineral groups when appropriate.)
8. One key thing that sedimentologists think about is the "environment of deposition." They have observed that different sedimentary rocks form in different places. Explain this and give specific examples to support your explanation.
9. Where in the world (what plate tectonic settings) do most of the earthquakes occur? Name the most important places. Explain why.
10. Discuss the plate tectonic settings where each of the following occur in ocean and in continental regions, and name one example (give geographical location) of each in an oceanic area, and one example of each in a continental area.
 - plates moving apart
 - plates converging (coming together)
 - plates sliding past each other
 - hot spot volcanism

