

ESC 115 Physical Geology

Test 2

Spring, 2008

The first 5 questions refer to the slides we will view together in class. Please use the space provided to answer the questions.

1. **(9 pts)** The rock shown is andesite. What is the plate tectonic setting in which it is likely to occur? Draw a labelled sketch to illustrate it.

2. **(9 pts)** The picture shown is a salt dome in South Louisiana. How does this relate to plate tectonics? How does it relate to petroleum production?

3. **(8 pts)** How are the east coast and west coast of the United States different tectonically? Use a sketch as needed to explain what you mean. What is one other factor that has shaped the coastlines?

4. **(6 pts)** In the picture shown, where is the youngest portion of the continent located. Why? Explain in terms of plate tectonics.
5. **(8 pts)** Of the three mountain ranges (A, B, and C) circled on the figure, which two are most alike in their tectonic origin. Explain with a labelled sketch.
6. **(8 pts)** Where in the world is continental rifting producing the beginnings of a new ocean? What are the intrusive and extrusive forms of the rocks that are produced? What was the role of technology developed in World War II in understanding plate tectonics?
7. **(12 pts)** Create a table of mafic, intermediate, and felsic igneous rocks and provide both the intrusive and extrusive types.

8. **(6 pts)** How fast do tectonic plates move? Name two ways we can measure this rate.
9. **(6 pts)** What precursor events (things that happen before an eruption) could be used to predict that a volcano might soon erupt? Name three, with explanations of why they occur and indicate a volcano may soon erupt.
10. **(4 pts)** This semester has seemed fragmented in part because of the snow days and holidays. However, we still have half the semester remaining. What are two ways we can improve the course?
11. **(8 pts)** How do volcanoes at a mantle hotspot differ if they are under a continent versus under an ocean? What are two factors that determine how explosive a volcano is? How does this relate to the essay on Lake Nyos?

12. (4 pts) How do island atolls form? Draw a picture to illustrate the process.

13. (12 pts) Draw three labelled sketches for each of the major rock types (igneous, sedimentary, and metamorphic) showing examples of how and where each is likely to form.