GEOG 101 STUDY GUIDE

EXAM 03 – EARTH'S CHANGING LANDSCAPES

Readings due:

Physical Geography, Mason et al, units 27-34

Questions for review:

1. How old is the Earth? How do we know this?
2. Define accretion and differentiation as they relate to the planetesimal hypothesis.
3. What are endogenic forces?
4. What are the two types of indirect evidence we use to study the Earth's core and mantle? Have we ever drilled down to the mantle?
5. Explain P and S waves. What are the differences between each?
6. What is generated by the Earth's Outer Core?
7. What is the Asthenosphere and why is it important?
8. What are the differences between oceanic and continental crust? Which is denser, and which, therefore, "floats" over the other?
9. Explain geomagnetic reversal and polar wandering.
10. What are the three types of "north"?
11. What is a mineral? What is a rock?
12. What are two most common elements found in the Earth's crust?
13. What are the two subclasses of igneous rocks and how do they form?
14. What is a pluton? What is a batholith?
15. What are the three subclasses of sedimentary rocks and how do they form?
16. How do metamorphic rocks form? What is foliation?
17. Define historical geology.
18. What was Ussher's "Young Earth" model and how did he derive it?
19. Compare and contrast catastrophism and uniformitarianism. Which is used in science?
20. What was James Hutton's big contribution to geology?
21. What are the differences between relative and absolute dating? Give an example of each.
22. Define the principles of superposition, original horizontality, and cross-cutting relationships and explain how they are used in geology.
23. What is Occam's Razor and how does it relate to geologic inquiry?
24. Explain the basics of radiometric dating. What is a half-life and how do we apply it to the dating of rocks?
25. What is "The Ring of Fire"?
26. Fully explain each component to Plate Tectonics. Be sure to include seafloor spreading, continental drift, convection in the Mantle, radioactive decay, and the three different plate boundaries.

27. Who was Alfred Wegner and what was his contribution to the Theory of Plate Tectonics? What did he get wrong? What evidence did he provide?
28. When did Pangaea form?
29. What did Harry H. Hess contribute to the Theory of Plate Tectonics?
30. How did the study of magnetic reversals lead to the final acceptance of the Theory of Plate Tectonics?
31. The San Andreas Fault is what kind of plate boundary? What kind of fault is it?
32. What is a "hot spot"?
33. Define and diagram normal, reverse, and strike-slip faults. Which stresses lead to each fault type? Which faults have hanging and foot walls and how do you differentiate them?
34. How did the Appalachian Mountains form and when?
35. How did the Himalaya Mountains form and when?
36. Define focus and epicenter.
37. Compare and contrast the ways in which scientists measure the intensity and magnitude of earthquakes.
38. What is the difference between magma and lava?
39. What are the three main things emitted from a volcano?
40. What determines how dangerous a volcanic eruption will be? What are the two types of eruptions?
41. Compare and contrast shield and stratovolcanoes. What type of eruption does each volcano have and why? Where do we usually find each type of volcano?
42. How did Mount Saint Helens erupt and was it a surprise?
43. How do we harness geothermal energy?

Don't forget your Scantron form and #2 pencil!