Earth Science 2nd Semester Finals Study Guide

Weather

1. 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.

2. What are types of air masses, and properties of these types?

3. 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?

Apollo Missions

4. Explain why the following Apollo Flights are important. Give complete answers.
   a. Apollo 1
   b. Apollo 8
   c. Apollo 11
   d. Apollo 13
   e. Apollo 17

5. Define a *Spinoff* in relation to NASA. Give an example of one.

6. Which President gave NASA the challenge to go to the moon? What year did he do this?

Rocks and Minerals

7. What is a mineral?

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

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

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

11. Compare or contrast the following terms:
    a. Igneous rocks – extrusive & intrusive
    b. Sedimentary rocks – weathering (sediments), deposition, lithification, cementation
    c. Sedimentary rocks – clastic, chemical, organic
    d. Metamorphic rocks – foliated & nonfoliated

12. What are the 3 Laws of Relative Dating (original horizontality, superposition, cross-cutting relationships)?

13. Can you use the three laws above to put rock layers in relative order?

14. Can you describe what the following types of fossils are and how they are formed?
    Replaced remains; molds; casts; trace fossils; original remains

15. How can you use index fossils to date the rocks?

16. Can you explain how relative and absolute dating are different?

17. Can you explain what a half-life is and how parent & daughter particles are related to it?

18. Can you use radioactive isotopes and their half life to date rocks and fossils?

19. Eons, Eras, Periods, Epochs – What do these terms mean?

Plate Tectonics

20. History of Plate Tectonics – can you describe the following discoveries?
    Wegner - Pangea
    Holmes – convection/mantle
    Hess – sea floor spreading
    Idea of Plates in the crust

21. Could you identify plates using only earthquake or volcano data?

22. Behavior of plates at boundaries & patterns of earthquake & volcano data – can you identify the patterns in data for each type of behavior found at plate boundaries?
    Convergent [subduction & buckling]
    Divergent – rift
    Horizontal movement – transform

23. Earthquakes – can you define the following terms?
    Focus, epicenter, magnitude, seismograph, seismogram

24. Can you identify earthquake locations using seismograms & nanograms? Go through Virtual Earthquake #2?

25. Can you find the magnitude of an earthquake using seismograms? Go through Virtual Earthquake #2?

26. Can you explain how P and S waves are similar and how they are different? Can you identify their basic characteristics?