Name:_____Answer Key_____ Date:_____Period:_____

EARTH SCIENCE FINAL EXAM STUDY GUIDE

Ch 1: Mapping

1. On the global grid, the equator is at 0 degrees. Is the equator a line of longitude or latitude?

Latitude

2. What type of map shows the differences in elevation? *Topographic map*

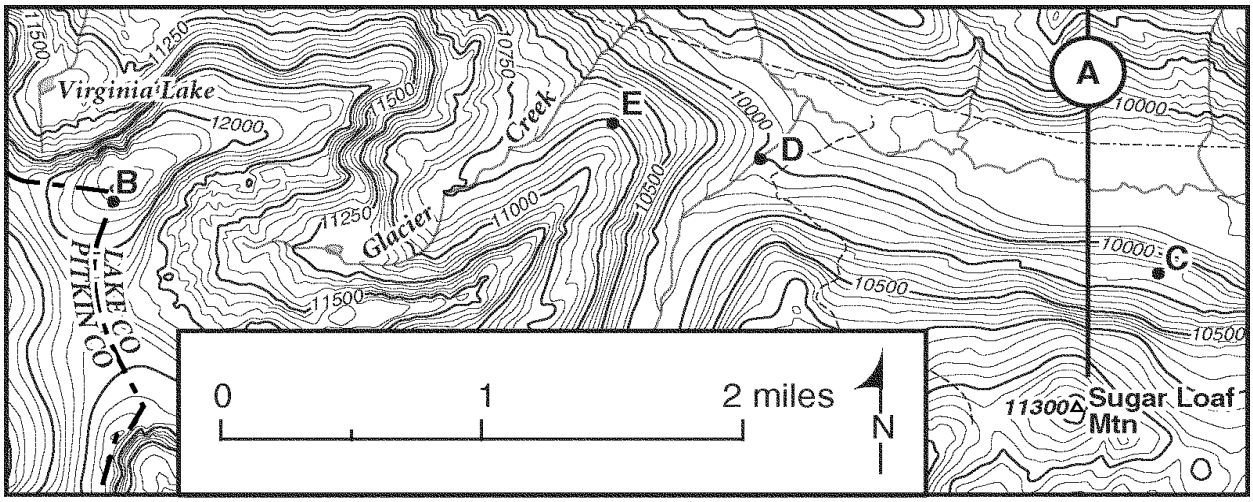


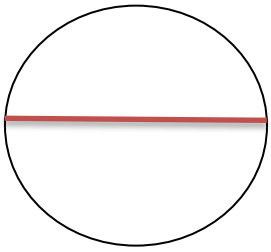
Figure 1-2

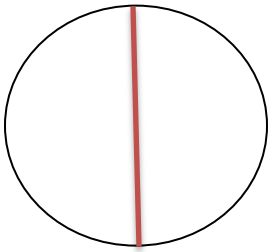
3. In Figure 1-2, what is the approximate elevation of point D? *10,000*

4. In Figure 1-2, what is the elevation of Sugar Loaf Mountain? *11,300*

5. In Figure 1-2, what is the approximate distance in miles between 'B' and 'C'? *4 miles*

6. Draw lines of latitude on Circle A. Draw lines of Longitude on Circle B.

A 

B 

7. On a topographic map, contour lines that close together indicate a(n) ____.
   a. gentle slope
   b. ocean
   c. hill
   d. steep slope

8. On a topographic map, the shape of an area with contour lines that are very far apart is ____.
   a. nearly flat
   b. very steep
   c. mountainous
   d. strong winds

Ch 3: Rocks

9. Define Rock. *A mixture of minerals*

10. *Complete the table.*

Type of Rock	Definition	Characteristics
Igneous	*A rock formed from magma or lava when it cools and crystallizes.*	*Random crystals, coarse-grained or fine-grained.*
Metamorphic	*A rock formed by a rock deep in earth under heat and pressure.*	*Dense, foliated or nonfoliated*
Sedimentary	*A rock formed from weathered products from rocks that have been transported, deposited, compacted and cemented.*	*Layers, fossils, brittle, mud cracks, ripple marks.*

11. How is a sedimentary rock formed? *A rock formed from weathered products from rocks that have been transported, deposited, compacted and cemented.*

12. A rock that forms from cooling lava is classified as an ____. *Extrusive igneous*

13. What processes form metamorphic rocks? *Heat and pressure*

Ch 5: Weathering

14. What type of weathering occurs when physical forces break rock into smaller pieces without changing the rock's chemical composition is called ____. *Mechanical weathering*

15. When water freezes, its volume ____. *increases*

16. Which of the following is the result of chemical weathering?
    a. a rock that has been changed into one or more new compounds
    b. a rock that has been broken into tiny pieces
    c. a rock that has been split in two

17. Whenever the characteristics and chemical composition of weathered materials have been altered, they have undergone what type of weathering? *Chemical weathering*

18. List 3 factors that affect the rate of weathering in rocks?
Climate, rock characteristics, and exposed surface area of rock

19. Chemical weathering would be ____.
    a. most effective in a warm, dry climate
    b. most effective in a cold, dry climate
    c. most effective in a warm, humid climate
    d. equally effective in any climate

Ch 6: Running Water and Ground Water

20. What is the main factor on how much erosion a river will create?
    It's velocity or speed of the water moving down the river

21. Compare a young to a mature river and list features found in both.
    Young = fast moving, high erosion, water falls, steep gradient, V-shape valleys
    Mature = slower moving, less erosion, meanders, ox bow lakes, gentle gradient, U-shape valleys, flood plains

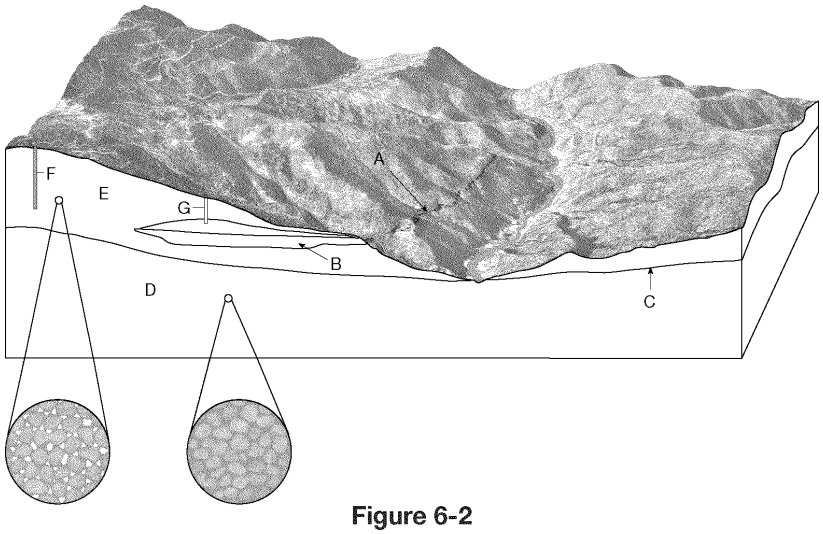


Figure 6-2

22. In Figure 6-2, what letter labels the zone of saturation? *D*

23. What feature is labeled C in Figure 6-2? *Water table*

24. In Figure 6-2, which of the wells shown will NOT be able to pump water? *F*

25. Groundwater is found underground in the zone of ____. *Aeration*

26. The ability of a stream to erode and transport material depends largely on its ____. *Velocity*

27. If a river's gradient because becomes less steep, what will happen to the velocity of the river? *Slow down*

28. The flat portion of a valley floor adjacent to a stream channel is called a ____. *Flood plain*

29. A loop-like bend in the course of a stream is called a(n) ____. *meander*

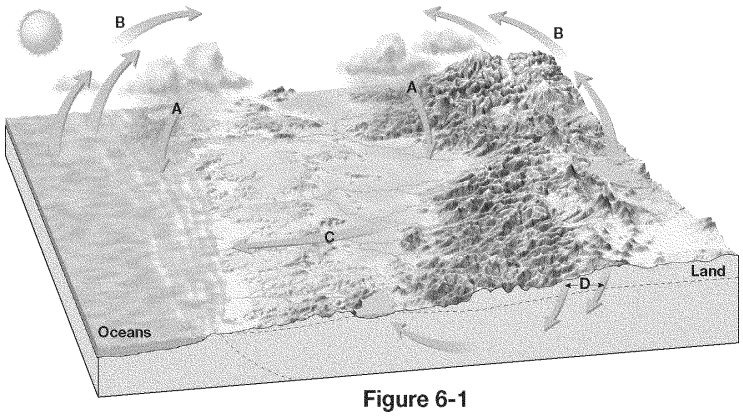


Figure 6-1

30. What process is illustrated by the arrows labeled A in Figure 6-1? *precipitation*

31. In Figure 6-1, what process is illustrated by the arrows labeled D? *infiltration*

32. What is the energy source for the water cycle shown in Figure 6-1? *Sun*

33. The water cycle is the ____. *Water constantly moves among the oceans, the atmosphere, the solid earth, and the biosphere. This unending circulation of Earth's water supply is the water cycle.*

Ch 7: Glaciers

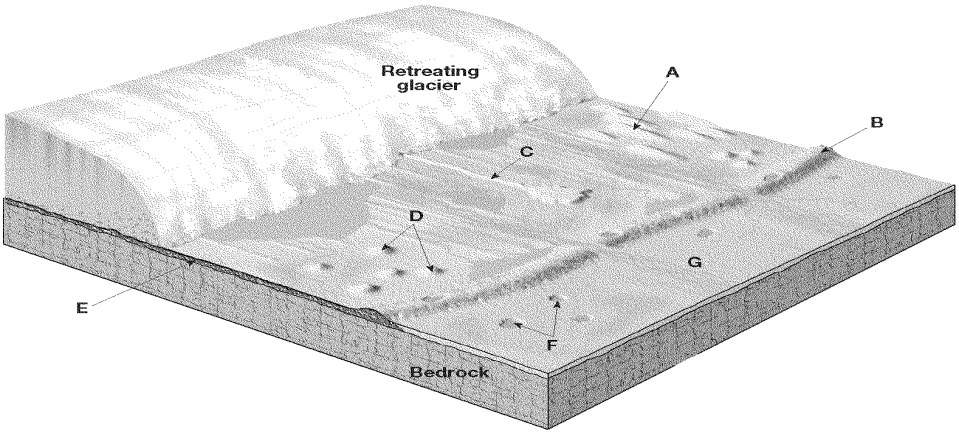


Figure 7-1

34. Identify the features labeled in figure 7-1. *A = drumlins, B= E end moraine, C = esker, D = kame, E = ground moraine, F = Kettles, G = outwash plain*
35. Define a glacier. *Snow that stays year round.*

Ch 8: Earthquakes

36. A zone of weakness or a break in Earth's crust is known as what? *Fault*
37. Where do most present-day faults occur? *Plate boundaries*
38. A tectonic plate boundary where colliding plates slide past each other (such as the San Andreas fault in California) is an example of: *transform fault*

39. What is the minimum number of seismograph stations from which scientists must collect data to locate the epicenter of an earthquake? *3*

40. What is the difference between the Focus and Epicenter? *Focus is the first initial movement below ground, the epicenter is directly above the focus on the surface.*

41. A tsunami is typically caused when? *An earthquake on the ocean floor with the ocean floor thrusting upwards.*

42. The Mexico City earthquake caused much damage because many structures were built on an old sandy lake bed. When the earthquake struck, many foundations settled unevenly or sank into the ground causing the buildings to collapse. What type of seismic wave did most of the damage?
    Surface wave
43. P-waves from a seismic event can be detected on the other side of the globe, but S-waves from the same disturbance cannot be detected on the other side of the globe. This indicates to geologists that.

a. S-waves are slower than P-waves
b. the continents are drifting apart
c. the middle of Earth is liquid
d. the earthquake causing the waves was especially severe.

44. The largest earthquake ever recorded was in Chile. Using the Richter scale this number would be close to what? *10*

45. Thousands of earthquakes take place every day. Most earthquakes

a. kill large numbers of people
b. occur in California
c. kill few but cause much damage
d. can't even be felt by people

Ch 9: Plate Tectonics

46. What causes the tectonic plates of earth to move? *Convection forces in the mantle*

47. The Atlantic Ocean is growing larger. How does paleomagnetism proves this? *Same age same polarity in the rocks are found the same distance from the middle ridge, with youngest rocks found closer to the middle and older rocks found closer to shore.*

48. What forms when one oceanic plate is forced beneath another plate? *A subduction zone, a trench, and a volcanic island arc will form.*

49. Why is coal, which comes from life that died a long time ago found in parts of Illinois?
    a. Illinois once had a tropical climate (warm, humid)
    b. Illinois once had an arctic climate
    c. Illinois is located on a subduction zone
    d. Illinois is located near a large body of water

50. List the evidences for Wegener's Continental Drift hypothesis? *Same rocks & fossils found on different continents, continents fit like puzzle pieces, glacial streak marks in Africa and Australia.*

51. What type of boundary occurs where two plates move together, causing one plate to descend into the mantle beneath the other plate? *Convergent boundary*

52. In Figure 1-1, Identify each letter. *A= crust, B = upper mantle, C = lower mantle, D = Outer core, E Inner core. A + B = lithosphere*

53. What are the three main parts of the geosphere?
    Crust, mantle, core

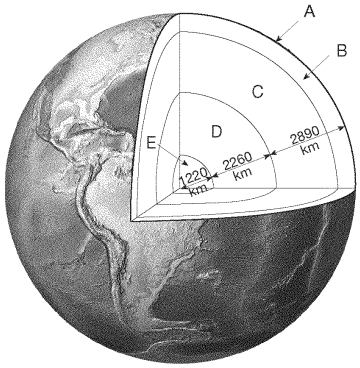


Figure 1-1

Ch 10: Volcanoes

54. List 3 factors that helps determine whether a volcanic eruption will be violent or quiet.
    Amount of dissolved gases, temperature, and amount of silica (composition)

55. Highly explosive volcanoes tend to have what type of magma?
    a. magma with high silica, high viscosity, and higher gas content
    b. magma with low silica, low viscosity, and lower gas content
    c. magma with low silica, high viscosity, and lower gas content
    d. magma with no silica, high viscosity, and no gas content

56. The broad, slightly dome-shaped volcanoes of Hawaii are what type of volcanoes?
    Shield volcano

57. A volcano that is fairly symmetrical and has both layers of lava and pyroclastic deposits is a ____.
    Composite (Stratovolcano) volcano

58. What is a caldera? *A large depression in a volcano*

59. The volcanic features formed at divergent ocean plate boundaries are ____.
    a. oceanic ridges
    b. volcanic island arcs
    c. continental volcanic arcs
    d. ocean trenches

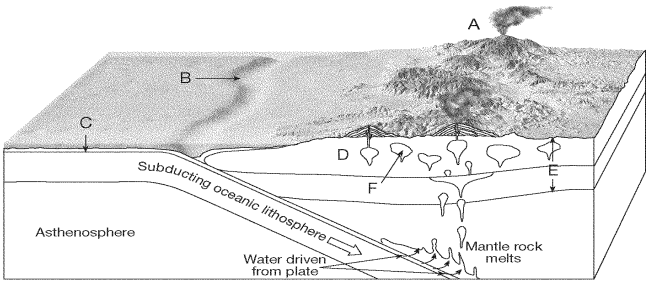


Figure 10-2

60. What type of plate boundary resulted in the volcanic activity illustrated in Figure 10-2? *Ocean – continental convergent plate boundary.*

61. Which type of landform develops at plate boundaries where one oceanic plate descends beneath another oceanic plate? *Volcanic island arc*

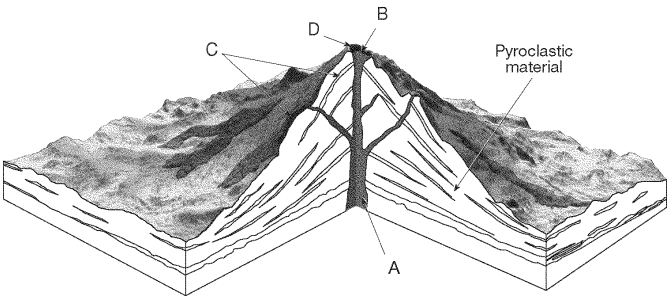


Figure 10-1

62. What feature is labeled D in Figure 10-1? *Crater or Vent*

63. What feature is labeled A in Figure 10-1? *Pipe*

64. What type of volcano is illustrated in Figure 10-1? *Composite volcano*

Minerals

65. Define mineral. *is natural occurring, inorganic solid with orderly crystalline structure and a definite chemical composition.*
66. Why is color not often a useful property in identifying minerals? *Same mineral can have different colors*
67. Define each property of a mineral. *Color, Streak = color in powder form, luster = describe how light reflects from the surface, hardness = how well it can be scratched, cleavage = the tendency to break along flat even surfaces, Density = mass / volume*