Name: _____ Unit X
Mr. Willis Geophysics
Conceptual Physics: _____ Need extra help?
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X

Unit X Study Guide

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

____ 1. The study of Earth's composition, structure, and history is called
a. seismology.
b. physics.
c. chemistry.
d. geology.

____ 2. The two layers that make up the lithosphere are the
a. upper mantle and lower mantle.
b. oceanic crust and continental crust.
c. inner core and outer core.
d. crust and upper mantle.

____ 3. The three main layers of Earth's interior are the
a. crust, core, and lithosphere.
b. crust, mantle, and core.
c. mantle, inner core, and outer core.
d. crust, mantle, and asthenosphere.

____ 4. A naturally occurring, inorganic solid with a crystal structure and a characteristic chemical composition is a
a. Rock.
b. fossil.
c. mineral.
d. piece of granite.

____ 5. Rocks are classified as
a. sandstone, limestone, or granite.
b. organic, intrusive, or clastic.
c. igneous, metamorphic, or sedimentary.
d. sedimentary, intrusive, or metamorphic.

____ 6. Intense heat, intense pressure, or reactions with hot water can modify a pre-existing rock to form a(an)
a. metamorphic rock.
b. sedimentary rock.
c. igneous rock.
d. organic rock.

____ 7. A series of processes in which rocks are continuously changed from one type to another is called
a. a volcanic eruption.
b. the rock cycle.
c. geology.
d. melting.

____ 8. The hypothesis that the continents move slowly over Earth's surface and once were joined into one supercontinent is called
a. Plate tectonics.
b. continental drift.
c. sea-floor spreading.
d. subduction.

____ 9. New ocean crust is formed along
a. mid-ocean ridges.
b. subduction zones.
c. mountain belts.
d. trenches.

____ 10. A subducting oceanic plate
a. is less dense than the plate it moves under.
b. is pushed up and over the continental crust.
c. sinks into the mantle, forming a trench.
d. moves horizontally in the opposite direction past the other plate.

____ 11. The heat that drives mantle convection comes from the gradual cooling of Earth's interior and
a. the sun.
b. the decay of radioactive isotopes.
c. sea-floor spreading.
d. trenches.

____ 12. Plates slide past each other, and crust is neither created nor destroyed, at a
a. convergent boundary.
b. divergent boundary.
c. mid-ocean ridge.
d. transform boundary.

____ 13. Geologists have inferred that Earth's outer core is liquid because
a. P waves cannot pass through the outer core.
b. S waves speed up in the outer core.
c. S waves are bent downward as they travel through the outer core.
d. S waves cannot pass through the outer core.

____ 14. Most of Earth's liquid fresh water is found in
a. groundwater.
b. lakes and streams.
c. reservoirs.
d. glaciers.

____ 15. A permeable layer of rock that is saturated with water is called a(an)
a. Water table.
b. lake.
c. watershed.
d. aquifer.

____ 16. Which of the following is an example of erosion?
a. to wear down and carry away rock and soil through the force of gravity
b. to wear down and carry away rock and soil through the action of wind
c. to wear down and carry away rock and soil through the action of water
d. all of the above

____ 17. Which of the following is NOT an agent of chemical weathering?
a. rainwater
b. oxidation
c. frost wedging
d. carbonic acid

____ 18. A rapid mass movement of large amounts of rock and soil down a slope is called a
a. landslide.
b. Slump.
c. creep.
d. mudflow.

____ 19. Tilted telephone poles and fences curving in a downward direction on a hillside are evidence of
a. a landslide.
b. a mudflow.
c. a slump.
d. creep.

____ 20. A stream's ability to erode depends mainly on
a. its temperature.
b. the size of the sediment in the stream.
c. its speed.
d. the shape of its valley.

____ 21. Meanders, V-shaped valleys, and oxbow lakes are all features formed by
a. glaciers.
b. surface water erosion.
c. water deposition.
d. groundwater erosion.

____ 22. A sediment deposit formed when a stream flows into a lake or the ocean is called a(an)
a. alluvial fan.
b. delta.
c. meander.
d. natural levee.

____ 23. Caves are formed by erosion from
a. glaciers.
b. streams.
c. wind.
d. groundwater.

____ 24. Groundwater forms caves and sinkholes by the process of
a. chemical weathering.
b. physical weathering.
c. condensation.
d. mineral deposition.

____ 25. Wind erodes the land by
a. deflation and oxidation.
b. abrasion and chemical weathering.
c. deflation and plucking.
d. deflation and abrasion.

____ 26. Deposits formed from windblown sand are called
a. moraines.
b. loess.
c. dunes.
d. cirques.

____ 27. Which of the following describes the changing conditions in the ocean as depth increases?
a. pressure increases, light decreases, and temperature decreases
b. pressure decreases, light decreases, and temperature decreases
c. pressure increases, light increases, and temperature decreases
d. pressure increases, light increases, and temperature increases

____ 28. Why do most ocean organisms live above a water depth of 500 meters?
a. Pressure below that depth is too great.
b. Temperature below that depth is too high.
c. Pressure below that depth is too low.
d. Light below that depth is too bright.

____ 29. Deep currents in the ocean are caused by
a. deep upwelling.
b. salinity changes with depth.
c. wind blowing across the ocean surface.
d. density differences of ocean water.

____ 30. What type of ocean current brings cold water from the deep ocean to the surface?
a. a density current
b. upwelling
c. a surface current
d. a current caused by wind

Completion
Complete each sentence or statement.

31. The study of the composition, structure, and history of Earth is called _____.

32. The crust and upper mantle together form the _____.

33. The process by which oceanic plates sink into the mantle through a trench is called _____.

34. The sinking of dense slabs of lithosphere and _____ from within Earth drive the mantle convection current.

35. The type of sedimentary rock that forms when fragments of pre-existing rocks are cemented together is called a(an) _____ rock.

36. Alfred Wegener proposed that a continent was formed by continental drift. This supercontinent was called _____.

37. The _____ scale is used to indicate the energy released by an earthquake.

38. Subduction occurs at _____ plate boundaries.

39. A rock that allows water to flow through it is said to be _____.

40. Fresh water on Earth occurs in lakes, ponds, rivers, streams, in groundwater, in the atmosphere as water vapor, and in _____.

41. _____ is the process by which rocks are chemically altered or physically broken down into fragments at or near Earth's surface.

42. The main agent of chemical weathering is _____.

43. Deposits of windblown dust are called _____.

44. The process by which sand is moved along a shore is called _____.

45. The carbonic acid that is involved in the formation of caves is formed when rainwater combines with _____ in the air.

46. The _____ is a gently sloping plain covered with shallow water along the edges of continents.

47. Currents in the deep ocean are caused by density differences in ocean water. These density differences are caused by temperature and _____ differences.

48. The _____ is used by geologists to determine the relative ages of sedimentary rock layers.

49. The top of the region where pore spaces in rock and soil are filled with groundwater is referred to as the _____.

50. Wave erosion is caused by abrasion and the _____ of waves.

Short Answer

51. What theory explains how Earth's plates form and move?

52. What part of Earth's core is liquid?

53. How do geologists classify rocks as igneous, sedimentary, or metamorphic?

54. In what two types of locations do most volcanoes occur?

55. Describe the physical properties of the three layers of the mantle.

56. Why did most geologists initially reject Alfred Wegener's hypothesis of continental drift?

57. What are three common features of fast-moving streams in mountainous areas?

58. What are two features formed by deposition that are often found in caves?

59. Describe the changes in amount of light, temperature, and pressure as depth in the ocean increases.

60. Briefly describe how upwelling occurs in the ocean.

61. What is the water cycle?

62. What is the land area that contributes to a river system called?

63. List at least four agents of erosion.

64. Compare and contrast weathering and erosion.

65. Describe three ways that wind erosion moves sediment.

Essay

66. Describe the rock cycle.

67. Use plate tectonics to explain where mountains form.

68. How can earthquakes be used to map the location of a plate boundary?

69. Explain how a stream transports sediment of various sizes.

70. Describe and discuss what causes surface currents and deep currents in the ocean.

Other

USING SCIENCE SKILLS

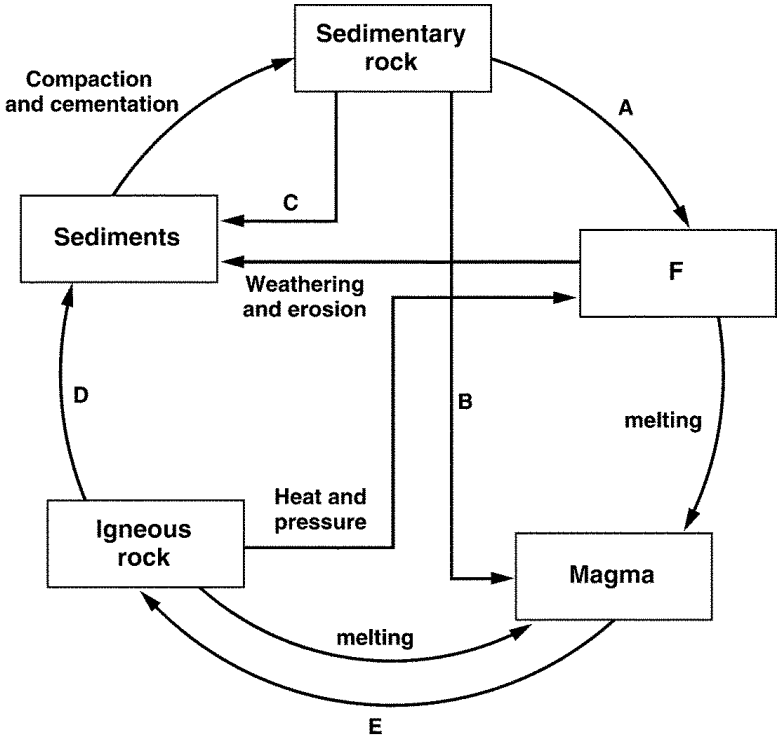

Figure 22-2

71. **Classifying** What type of rock would fit into Figure 22-2 at the location shown by the letter F?

72. **Interpreting Graphics** In Figure 22-2, what processes are represented by the arrow labeled A?

73. **Interpreting Graphics** In Figure 22-2, what process is represented by the arrow labeled D?

74. **Drawing Conclusions** Use Figure 22-2 to describe how an igneous rock could turn into a sedimentary rock and then into a metamorphic rock.

75. **Using Models** Use Figure 22-2 to describe the process involved in the formation of a sedimentary rock.

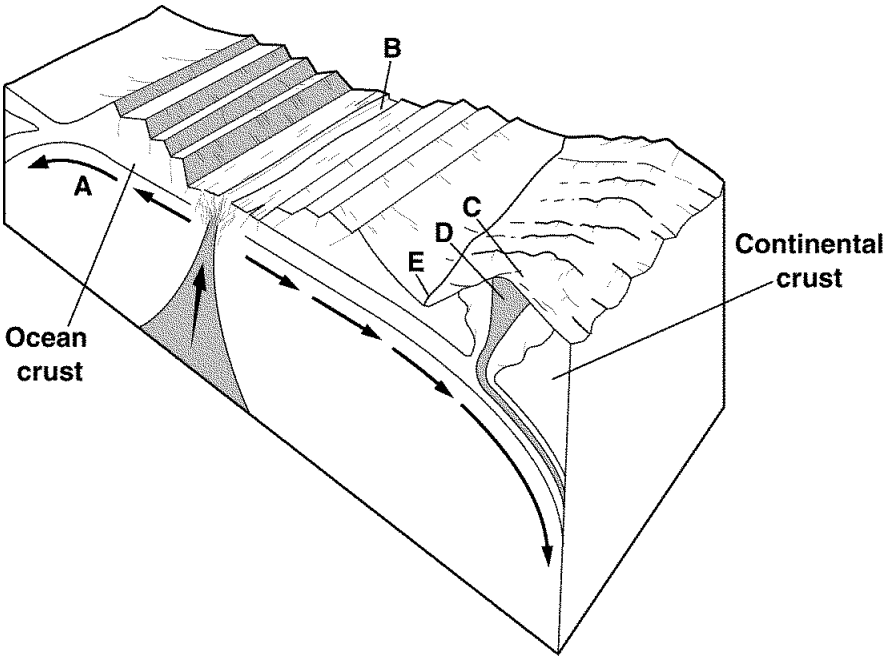

Figure 22-3

76. **Interpreting Graphics** In Figure 22-3, what process is occurring in the area labeled D, and what feature will result at C?

77. **Interpreting Graphics** In Figure 22-3, what is occurring at A?

78. **Interpreting Graphics** In Figure 22-3, what is occurring at the feature labeled B?

79. **Using Models** Use Figure 22-3 to identify where new crust is being created and where it is being destroyed. Give the letters on the diagram and the terms used to describe these areas.

80. **Classifying** In Figure 22-3, what type of plate boundary is illustrated at E?