

Earth Science Ch. 4 Practice Test

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 1. Holes drilled several kilometers into Earth's crust provide direct evidence about Earth's interior in the form of

a.	seismic waves.
b.	rock samples.
c.	liquid iron.
d.	volcanic eruption.

____ 2. Geologists obtain indirect evidence about Earth's interior by

a.	measuring pressure differences at Earth's surface.
b.	estimating temperature inside earth.
c.	directly looking under the many layers.
d.	recording and studying seismic waves.

____ 3. Using data from seismic waves, geologists have learned that Earth's interior is made up of several

a.	continents.
b.	layers.
c.	ridges.
d.	trenches.

____ 4. What is the correct order (starting from the surface) of Earth's layers?

a.	crust, outer core, inner core, mantle
b.	mantle, outer core, inner core, crust
c.	crust, mantle, outer core, inner core
d.	outer core, inner core, crust, mantle

____ 5. Earth's inner core is

a.	a dense ball of solid metal.
b.	a layer of molten metal.
c.	a layer of hot rock.
d.	a layer of rock that forms Earth's outer skin.

____ 6. Earth's mantle is

a.	a layer of molten metal.
b.	a layer of hot rock.
c.	a dense ball of solid metal.
d.	a layer of rock that forms Earth's outer skin.

____ 7. Earth's magnetic field results from movements in the

a.	mantle.
b.	outer core.
c.	inner core.
d.	crust.

____ 8. When you touch a hot pot or pan, energy moves from the pot to your hand. This is called

a.	magnetic energy.
b.	indirect evidence.
c.	subduction.
d.	heat transfer.

____ 9. The transfer of energy through empty space is called

a.	conduction.
b.	convection.
c.	radiation.
d.	subduction.

____ 10. Heat transfer within a fluid takes place by

a.	convection currents.
b.	radiation.
c.	conduction.
d.	density.
11. When the heat source is removed from a fluid, convection currents in the fluid will	
a.	speed up.
b.	change direction.
c.	eventually stop.
d.	continue at the same rate forever.
12. Scientists think that convection currents flow in Earth's	
a.	continents.
b.	mantle.
c.	lithosphere.
d.	inner core.
13. According to Wegener's hypothesis of continental drift,	
a.	Earth's surface is made up of seven major landmasses.
b.	the continents do not move.
c.	Earth is slowly cooling and shrinking.
d.	the continents were once joined together in a single landmass.
14. What is Pangaea?	
a.	the name of a German scientist
b.	the name of the supercontinent that existed millions of years ago
c.	another name for continental drift
d.	the name of an ancient fossil
15. Which type of evidence was NOT used by Alfred Wegener to support his continental drift hypothesis?	
a.	evidence from landforms
b.	evidence from fossils
c.	evidence from human remains
d.	evidence from climate
16. Any trace of an ancient organism that has been preserved in rock is called a	
a.	landform.
b.	continent.
c.	fossil.
d.	landmass.
17. Most geologists rejected Alfred Wegener's idea of continental drift because	
a.	they were afraid of a new idea.
b.	Wegener was interested in what Earth was like millions of years ago.
c.	Wegener used several different types of evidence to support his hypothesis.
d.	Wegener could not identify a force that could move the continents.
18. What technology did scientists use in the mid-1900s to map the mid-ocean ridge?	
a.	satellites
b.	deep-sea diving
c.	submarines
d.	sonar
19. In sea-floor spreading, molten material rises from the mantle and erupts	
a.	along the edges of all the continents.
b.	along mid-ocean ridges.
c.	in deep-ocean trenches.

d.	at the north and south poles.
20. Mid-ocean ridges are	
a.	found in all of Earth's oceans.
b.	found only in the Pacific Ocean.
c.	located mostly along coastlines.
d.	long deep-ocean trenches.
21. How did scientists discover that rocks farther away from the mid-ocean ridge were older than those near it?	
a.	by observing eruptions of molten material on the sea floor
b.	by mapping rocks on the sea floor using sonar
c.	by determining the age of rock samples obtained by drilling on the sea floor
d.	by measuring how fast sea-floor spreading occurs
22. What did scientists in a submersible see when they observed the mid-ocean ridge?	
a.	a colliding boundary
b.	rocks formed by the rapid hardening of molten material
c.	the movement of Earth's plates
d.	convection currents in the ocean
23. The process by which the ocean floor sinks beneath a deep-ocean trench and back into the mantle is known as	
a.	convection.
b.	continental drift.
c.	subduction.
d.	conduction.
24. Old oceanic crust is more dense than new oceanic crust because it is	
a.	hot.
b.	moving toward a deep-ocean trench.
c.	cool.
d.	closer to the mid-ocean ridge.
25. Most geologists think that the movement of Earth's plates is caused by	
a.	conduction.
b.	earthquakes.
c.	convection currents in the mantle.
d.	Earth's magnetic field.
26. The geological theory that states that pieces of Earth's lithosphere are in constant, slow motion is the theory of	
a.	subduction.
b.	plate tectonics.
c.	deep-ocean trenches.
d.	sea-floor spreading.
27. A place where two plates slip past each other, moving in opposite directions, is known as a	
a.	sliding boundary.
b.	spreading boundary.
c.	colliding boundary.
d.	rift valley.
28. A rift valley forms at a	
a.	colliding plate boundary
b.	spreading plate boundary.
c.	sliding boundary.
d.	deep-ocean trench.
29. A collision between two pieces of continental crust at a colliding boundary produces a	
a.	mid-ocean ridge.
b.	deep-ocean trench.

c.	rift valley.
d.	mountain range.

30. The place where two plates come together is known as a

a.	sliding boundary.
b.	spreading boundary.
c.	colliding boundary.
d.	rift valley.

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

31. To study Earth's interior, geologists often rely on indirect methods, such as evidence from fossils.

32. Pressure increases from Earth's surface toward the center of Earth.

33. The outermost layer of Earth is called the mantle.

34. The transfer of heat by the movement of heated fluid is called conduction.

35. Mantle material rises in convection currents because heated materials become more dense.

36. Alfred Wegener provided evidence from landforms, fossils, and climate in support of his theory of the shrinking Earth.

37. Oceanic crust near the mid-ocean ridge is younger than oceanic crust farther away from the ridge.

38. If subduction occurs faster than oceanic crust can be created, an ocean will expand.

39. Along a spreading boundary, two plates slip past each other, moving in opposite directions.

40. Along the Mid-Atlantic ridge, the North American plate and the Eurasian plate are moving apart at a very slow rate.

Completion

Complete each statement.

41. Earthquakes produce _____ that travel through Earth.

42. Geologists learn about Earth's interior by studying _____, which move through Earth.

43. The part of the mantle called the _____ is made of soft rock that bends like plastic.

44. _____ is a rock with a fine, dark texture that makes up the oceanic crust.

45. Scientists think that the _____, made of liquid iron and nickel, moves to produce Earth's magnetic field.

46. When you touch a hot plate, the transfer of heat from the plate to your hand is called _____.

47. The energy from the sun that warms your face is transferred by a process called _____.

48. In the mantle, heat is transferred as soft rock flows slowly in cycles known as _____.
49. The hypothesis of _____ was that all the continents once were joined as a single supercontinent and have since drifted apart.
50. Wegener believed that the continents had once been joined in one landmass he called _____.
51. To support his hypothesis, Alfred Wegener provided evidence from _____, traces of ancient organisms preserved in rock.
52. The process of _____ continually adds new crust to the ocean floor along both sides of the mid-ocean ridge.
53. Samples collected by the *Glomar Challenger* showed that the youngest rocks on the ocean floor are found in the center of _____.
54. Subduction occurs where the oceanic crust bends down toward the mantle at a(n) _____.
55. The ocean floor sinks beneath a deep-ocean trench and back into the mantle in a process known as _____.
56. The lithosphere is broken into sections called _____, which float on top of the asthenosphere.
57. The formation of volcanoes and mountain ranges can be explained by the theory of _____.
58. When continental plates pull apart at a spreading boundary on land, a(n) _____ forms.
59. Two of Earth's plates slip past each other, moving in opposite directions, along a(n) _____ boundary.
60. A continental plate collides with an oceanic plate at a(n) _____ boundary.

Short Answer

Use the diagram to answer each question.

61. Earth's solid inner core is surrounded by the hot, molten metal of which layer?
62. The asthenosphere is part of which layer of Earth?
63. Pressure increases with depth toward the center of Earth. In which layer would you expect pressure to be the greatest?
64. Which layer of Earth is made up partly of crust and partly of mantle material?
65. Based on the diagram, describe one of the major differences between oceanic crust and continental crust.
66. According to the theory of plate tectonics, which layer of the earth is broken into separate sections called plates?

Use the diagram to answer each question.

67. What feature occurs at X and how does it form?
68. What feature occurs at Y, and how does it form?

69. What is happening at Z?
70. Which type of plate boundary occurs at X?
71. Identify the three plates in the diagram and name the materials that make up each plate.
72. Which type of plate boundary occurs at Y?

Essay

73. Compare and contrast the outer core and the inner core.
74. Describe the convection currents that occur inside Earth's asthenosphere.
75. Were Africa and South America ever joined? Cite evidence from a landform and fossil to support your answer.
76. Describe how the shapes of present-day continents support the theory of continental drift.
77. How are magnetic stripes near mid-ocean ridges evidence for sea-floor spreading?
78. The Eurasian and North American plates share a common border in the Atlantic Ocean. Name this border and explain what plate activity occurs there.
79. According to the theory of plate tectonics, explain what causes changes in Earth's surface.
80. Compare and contrast what occurs when two oceanic plates collide, when two continental plates collide, and when an oceanic and a continental plate collide.

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Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: L2
OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.
STA: S 6.1 BLM: comprehension
2. ANS: D PTS: 1 DIF: L2
OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.
STA: S 6.1 BLM: comprehension
3. ANS: B PTS: 1 DIF: L1
OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.
STA: S 6.1.b BLM: knowledge
4. ANS: C PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: comprehension
5. ANS: A PTS: 1 DIF: L1
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: knowledge
6. ANS: B PTS: 1 DIF: L1
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: knowledge
7. ANS: B PTS: 1 DIF: L1
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: comprehension
8. ANS: D PTS: 1 DIF: L2
OBJ: CaES.4.2.1 Explain how heat is transferred. STA: S 6.3.a
BLM: application

9. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.4.2.1 Explain how heat is transferred. STA: S 6.3.d
 BLM: knowledge

10. ANS: A PTS: 1 DIF: L1
 OBJ: CaES.4.2.2 Identify what causes convection currents. STA: S 6.3.c
 BLM: knowledge

11. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.4.2.2 Identify what causes convection currents. STA: S 6.3.c
 BLM: comprehension

12. ANS: B PTS: 1 DIF: L2
 OBJ: CaES.4.2.3 Describe convection currents in Earth's mantle.
 STA: S 6.4.c BLM: comprehension

13. ANS: D PTS: 1 DIF: L1
 OBJ: CaES.4.3.1 Explain Alfred Wegener's hypothesis about the continents.
 STA: S 6.1.b BLM: knowledge

14. ANS: B PTS: 1 DIF: L2
 OBJ: CaES.4.3.1 Explain Alfred Wegener's hypothesis about the continents.
 STA: S 6.1.b BLM: comprehension

15. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.
 STA: S 6.1.a BLM: comprehension

16. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.
 STA: S 6.1.a BLM: knowledge

17. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.4.3.3 Explain why other scientists of Wegener's day rejected his hypothesis.
 STA: S 6.1.a BLM: comprehension

18. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.a
 BLM: comprehension

19. ANS: B PTS: 1 DIF: L1
 OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.e
 BLM: knowledge

20. ANS: A PTS: 1 DIF: L2
 OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.a
 BLM: comprehension

21. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.4.4.2 List the evidence for sea-floor spreading. STA: S 6.1.a
 BLM: comprehension

22. ANS: B PTS: 1 DIF: L2
 OBJ: CaES.4.4.2 List the evidence for sea-floor spreading. STA: S 6.1.a
 BLM: comprehension

23. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
 STA: S 6.1.e BLM: knowledge

24. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
 STA: S 6.1.c BLM: comprehension

25. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.c
 BLM: comprehension

26. ANS: B PTS: 1 DIF: L1
 OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.c
 BLM: knowledge

27. ANS: A PTS: 1 DIF: L1
 OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
 BLM: knowledge

28. ANS: B PTS: 1 DIF: L1
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.d
BLM: knowledge
29. ANS: D PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.d
BLM: application
30. ANS: C PTS: 1 DIF: L1
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: knowledge

MODIFIED TRUE/FALSE

31. ANS: F, seismic waves
PTS: 1 DIF: L2
OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.
STA: S 6.1.a BLM: comprehension
32. ANS: T PTS: 1 DIF: L2
OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.
STA: S 6.1.b BLM: comprehension
33. ANS: F, crust
PTS: 1 DIF: L1
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: knowledge
34. ANS: F, convection
PTS: 1 DIF: L1
OBJ: CaES.4.2.2 Identify what causes convection currents. STA: S 6.3.c
BLM: knowledge
35. ANS: F, less
PTS: 1 DIF: L2
OBJ: CaES.4.2.2 Identify what causes convection currents. STA: S 6.4.c
BLM: application
36. ANS: F, continental drift
PTS: 1 DIF: L1
OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.
STA: S 6.1.a BLM: knowledge
37. ANS: T PTS: 1 DIF: L2
OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.a
BLM: application
38. ANS: F, shrink
PTS: 1 DIF: L2
OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
STA: S 6.1.c BLM: application
39. ANS: F, sliding
PTS: 1 DIF: L1
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: knowledge
40. ANS: T PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: comprehension

COMPLETION

41. ANS: seismic waves

PTS: 1 DIF: L1

OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.

STA: S 6.1 BLM: knowledge

42. ANS: seismic waves

PTS: 1 DIF: L2

OBJ: CaES.4.1.1 Explain how geologists learn about Earth's inner structures.

STA: S 6.1.b BLM: comprehension

43. ANS: asthenosphere

PTS: 1 DIF: L2

OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.

STA: S 6.1.b BLM: comprehension

44. ANS: Basalt

PTS: 1 DIF: L1

OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.

STA: S 6.1.a Framework BLM: knowledge

45. ANS: outer core

PTS: 1 DIF: L2

OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.

STA: S 6.1.b BLM: comprehension

46. ANS: conduction

PTS: 1 DIF: L2 OBJ: CaES.4.2.1 Explain how heat is transferred.

STA: S 6.3.c BLM: application

47. ANS: radiation

PTS: 1 DIF: L2 OBJ: CaES.4.2.1 Explain how heat is transferred.

STA: S 6.3.d BLM: application

48. ANS: convection currents

PTS: 1 DIF: L2

OBJ: CaES.4.2.3 Describe convection currents in Earth's mantle.

STA: S 6.4.c BLM: comprehension

49. ANS: continental drift

PTS: 1 DIF: L2

OBJ: CaES.4.3.1 Explain Alfred Wegener's hypothesis about the continents.

STA: S 6.1.a BLM: comprehension

50. ANS: Pangaea

PTS: 1 DIF: L1

OBJ: CaES.4.3.1 Explain Alfred Wegener's hypothesis about the continents.

STA: S 6.1.a BLM: knowledge

51. ANS: fossils

PTS: 1 DIF: L2

OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.

STA: S 6.1.a BLM: comprehension

52. ANS:

sea-floor spreading

sea floor spreading

PTS: 1 DIF: L2
OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.c
BLM: comprehension
53. ANS:
mid-ocean ridges
mid ocean ridges

PTS: 1 DIF: L2
OBJ: CaES.4.4.2 List the evidence for sea-floor spreading. STA: S 6.1.a
BLM: comprehension
54. ANS:
deep-ocean trench
deep ocean trench

PTS: 1 DIF: L2
OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
STA: S 6.1.d BLM: comprehension
55. ANS: subduction

PTS: 1 DIF: L1
OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
STA: S 6.1.d BLM: knowledge
56. ANS: plates

PTS: 1 DIF: L2
OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.c
BLM: comprehension
57. ANS: plate tectonics

PTS: 1 DIF: L2
OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.e
BLM: comprehension
58. ANS: rift valley

PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.e
BLM: comprehension
59. ANS: sliding

PTS: 1 DIF: L1
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: knowledge
60. ANS: colliding

PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: comprehension

SHORT ANSWER

61. ANS:
the outer core

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis

62. ANS:
the mantle

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis

63. ANS:
the inner core

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis

64. ANS:
the lithosphere

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis

65. ANS:
Continental crust is thicker.

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis

66. ANS:
the lithosphere

PTS: 1 DIF: L2
OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.c
BLM: comprehension

67. ANS:
At X, the mid-ocean ridge occurs along a boundary between two oceanic plates. The plates are moving apart, causing molten material to repeatedly rise from the mantle, erupt, and harden as solid rock along the center of the ridge.

PTS: 1 DIF: L2
OBJ: CaES.4.4.1 Explain the process of sea-floor spreading. STA: S 6.1.e
BLM: analysis

68. ANS:
At Y, a deep-ocean trench is forming. Two plates of different densities are colliding. The oceanic crust is denser and plunges beneath the continental crust, forming a trench.

PTS: 1 DIF: L2
OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
STA: S 6.1.e BLM: analysis

69. ANS:
The edge of plate B is plunging beneath plate C and melting in the mantle.

PTS: 1 DIF: L2
OBJ: CaES.4.4.3 Describe the process of subduction at deep-ocean trenches.
STA: S 6.1.e BLM: analysis

70. ANS:
spreading

PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: analysis

71. ANS:

Plates A and B are made of oceanic crust and lithosphere. Plate C is made of continental crust and lithosphere.

PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: analysis
72. ANS:
colliding

PTS: 1 DIF: L2
OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c
BLM: analysis

ESSAY

73. ANS:
The outer core is hot, molten iron and nickel under extreme pressure. Convection currents cause movements in the liquid outer core. Scientists hypothesize that these movements cause Earth's magnetic field. The outer core surrounds the inner core, which occupies the center of Earth. The inner core is also iron and nickel and is also extremely hot. But pressure within the inner core is so great that it remains a solid.

PTS: 1 DIF: L2
OBJ: CaES.4.1.2 Identify the characteristics of Earth's crust, mantle, and core.
STA: S 6.1.b BLM: analysis
74. ANS:

Earth's hot core and mantle provide a source of heat that drives convection currents in the asthenosphere. The asthenosphere is a layer of the upper mantle that can flow very slowly. The soft, plastic material of the asthenosphere slowly rises, spreads out, and pushes cooler material out of the way. Then the cooler material sinks back through the asthenosphere. These convection currents have flowed inside Earth for billions of years.

PTS: 1 DIF: L2
OBJ: CaES.4.2.3 Describe convection currents in Earth's mantle.
STA: S 6.4.c BLM: comprehension
75. ANS:

Rock from a mountain range in Africa matches up with similar rock in South America, suggesting that the two were once joined. A type of fossil plant has been found on both continents. The seedlike structures of this plant could not have traveled the great distances now separating the continents. Therefore, it seems likely that the two landmasses once were joined together.

PTS: 1 DIF: L3
OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.
STA: S 6.1.a BLM: synthesis
76. ANS:

According to the theory of continental drift, the continents once were joined together in a single landmass. The continents have since moved slowly over Earth's surface to their present positions. On a map, the outlines of some present-day continents look as if the continents could fit together like pieces of a jigsaw puzzle.

PTS: 1 DIF: L2
OBJ: CaES.4.3.2 List the evidence used by Wegener to support his hypothesis.
STA: S 6.1.a BLM: comprehension
77. ANS:

Magnetic stripes in the oceanic crust show the direction of Earth's magnetic field when the oceanic crust formed. Oceanic crust contains iron. As new crust cools and hardens, the iron atoms line up according to the direction of Earth's magnetic field at that time. But Earth's magnetic field occasionally reverses itself. Scientists found that the pattern of magnetic reversals on the sea-floor was the same

on both sides of the mid-ocean ridge. This supported the idea of sea-floor spreading.

PTS: 1 DIF: L2

OBJ: CaES.4.4.2 List the evidence for sea-floor spreading. STA: S 6.1.a

BLM: application

78. ANS:

The common boundary is a spreading plate boundary. At this boundary, a crack in the crust occurs along which new molten rock surfaces and hardens. Because this boundary occurs in the ocean, a mid-ocean ridge forms.

PTS: 1 DIF: L2

OBJ: CaES.4.4.2 List the evidence for sea-floor spreading. STA: S 6.1.c

BLM: application

79. ANS:

According to the theory of plate tectonics, the lithosphere is made up of a number of plates that contain oceanic and continental crust. These plates are in constant slow motion, driven by convection currents in the mantle. As they move, the plates collide, pull apart, or grind past each other, creating landforms on Earth's surface.

PTS: 1 DIF: L2

OBJ: CaES.4.5.1 Explain the theory of plate tectonics. STA: S 6.1.c

BLM: comprehension

80. ANS:

When two oceanic plates collide, one bends and slides under the other, forming a trench. When two continental plates collide, they squeeze the crust upward into mountain ranges. When an oceanic and a continental plate collide, the oceanic plate slides beneath the continental plate. The oceanic plate begins to melt as it sinks back into the mantle. This melting forms magma, which then may erupt through the continental plate as volcanoes.

PTS: 1 DIF: L2

OBJ: CaES.4.5.2 Describe the three types of plate boundaries. STA: S 6.1.c

BLM: analysis