# *Investigating Oceanography 2nd edition Sverdrup Test Bank*

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# Chapter 02 Test Bank – Static Key

1. Identify all of the types of plate boundaries that are associated with active volcanism.

**X** Divergent
**x** Ocean-Ocean Convergent
__ Transform
__ Continent-Continent Convergent
**x** Ocean-Continent Convergent

*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

2. Identify all of the different observations Alfred Wegener used to support his theory of continental drift.

__ Seafloor magnetic anomalies.
**x** Geographic fit of the continents.
**x** Studies of fossil plants and animals.
__ Dipping zones of earthquakes at ocean trenches.
**x** Patterns of glaciation.
__ Shallow earthquakes along transform faults.
**X** Matching bodies of rock on either side of the Atlantic.
**x** Alignment of mountain ranges when the Atlantic is closed.
__ High heat flow at oceanic ridges

*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Review the evidence in a written summary Alfred Wegener used to support his hypothesis of continental drift and the evidence supporting plate tectonics.*
*Section: 02.02 History of a Theory: Continental Drift*
*Topic: History of a Theory: Continental Drift*

3. Identify all of the different observations used to support Harry Hess' theory of seafloor spreading.

**x** Seafloor magnetic anomalies.
__ Geographic fit of the continents.
__ Studies of fossil plants and animals.
**x** Dipping zones of earthquakes at ocean trenches.
__ Patterns of glaciation.
**x** Shallow earthquakes along transform faults.
__ Matching bodies of rock on either side of the Atlantic.
__ Alignment of mountain ranges when the Atlantic is closed.
**x** High heat flow at oceanic ridges.

*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Understand the evidence for seafloor spreading.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

4. Earth's inner core is liquid whereas its outer core is solid.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

5. The refraction and shadow patterns of seismic P-waves and S-waves indicate the dimensions and properties of Earth's layers.



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**TRUE**

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*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

6. Shear waves do not pass through a solid-liquid boundary between Earth's layers. Compressional waves can pass this type of boundary.

**TRUE**

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
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*Topic: Earth's Interior*

7. Oceanic-type crust is more dense than continental-type crust.

**TRUE**

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

8. The continental landmasses are less dense than the mantle and are buoyed up by depressing the underlying mantle.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

9. The midocean ridges and rises are spreading centers where new oceanic crust is created.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

10. The thickness of deep-sea sediments increases with distance from a spreading center.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Discuss evidence in support of seafloor spreading.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

11. The largest lithospheric plate is the Pacific plate.

**TRUE**

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*Blooms: 1. Remember*



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*Gradable: automatic*
*Learning Outcome: Identify the major plates.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

12. The edge of an active continental margin bordered by a deep-sea trench is wide and shallow with deep deposits of land-derived sediments.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

13. Volcanic activity associated with subduction zones is more gentle and less explosive than volcanic activity associated with hot spots and midocean ridges.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain the relationship between volcanism and plate tectonics.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

14. The steeper profile of the Mid-Atlantic Ridge compared to the East Pacific Rise indicates that the Mid-Atlantic Ridge is the faster spreading center.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

15. The age of the seamounts from Hawaii to Midway Island increases in age from east to west.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Describe how hotspots create island chains.*
*Section: 02.05 Motion of the Plates*
*Topic: Motion of the Plates*

16. The North Atlantic Ocean was the first modern ocean to open during the breakup of Pangaea.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Review the evidence in a written summary Alfred Wegener used to support his hypothesis of continental drift and the evidence supporting plate tectonics.*
*Section: 02.02 History of a Theory: Continental Drift*
*Topic: History of a Theory: Continental Drift*

17. Isostatic columns of crustal material produce equal pressures deep within the mantle.

**TRUE**

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*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*



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*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

18. The San Andreas fault is an example of a transform fault.

**TRUE**

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

19. Epicenters are points on Earth's surface directly above a hot spot.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

20. Deep Earthquakes (below 100km or 60mi) are usually associated with oceanic ridges.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
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*Topic: Evidence for a New Theory: Seafloor Spreading*

21. The deep mantle below the asthenosphere is called the mesosphere.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

22. P waves travel more quickly than S waves.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

23. P waves travel only along the Surface of the Earth.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
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24. S waves are able to travel through both solid and liquid.

**FALSE**



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*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

25. Continental crust is generally thicker and less dense than oceanic crust.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

26. The taller a mountain is, the deeper its root will extend into the asthenosphere.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

27. Hess's 1960s theory of mantle convection and seafloor spreading was essentially correct.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

28. The oldest oceanic crust is generally in the center of the ocean basin near the mid-ocean ridge or rise system.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

29. Sediment thickness on the oceanic crust tends to be greatest in the center of ocean basins

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

30. Based on the current directions of plate motion, China and the West Coast of the U.S. are getting closer.

**TRUE**

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*Learning Outcome: Diagram relative plate motions.*



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*Section: 02.05 Motion of the Plates*
*Topic: Motion of the Plates*

31. Volcanic activity is common at transform plate boundaries.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

32. The thickness of oceanic crust increases with age.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

33. The deepest earthquakes occur in subduction zones at oceanic-oceanic plate convergent boundaries.

**TRUE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

34. California is an example of a passive continental margin.

**FALSE**

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

35. Deposits of sediments are usually thicker along passive continental margins.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

36. Spreading at mid ocean ridges tends to occur in increments rather than continuously.

**TRUE**

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
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37. The density of Earth materials _____ as the core is approached.

A. remains the same



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B. decreases
**C.** increases
D. increases then decreases
E. decreases then increases

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*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

38. The Moho is located between the

A. lithosphere and the asthenosphere.
**B.** crust and the mantle.
C. mantle and the outer core.
D. inner and outer cores.
E. continental margin and the abyssal plain.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

39. Which of the following help us believe that Earth's mass is distributed spherically and uniformly around Earth's center?

A. Lack of roughness of Earth's surface
B. Earth's spherical shape
C. Lack of rotational wobble
**D.** Earth's spherical shape and lack of rotational wobble.
E. Lack of roughness of Earth's surface, Earth's spherical shape, and lack of rotational wobble are correct

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

40. Which of Earth's layers contains the greatest volume of material?

A. Inner core
B. Outer core
**C.** Mantle
D. Lithosphere
E. Outer crust

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

41. The deepest portion of the lithosphere is formed from

A. oceanic basalt.
B. terrestrial granite.
C. a combination of basalt and granite.
**D.** mantle material.
E. the Moho.

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Differentiate among the lithosphere, asthenosphere, and mesosphere.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

42. The theory of drifting continents was proposed by

A. John Murray.
B. Matthew F. Maury.
**C.** Alfred Wegener.
D. Charles Darwin.
E. Robert Ballard.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
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*Learning Outcome: Review the evidence in a written summary Alfred Wegener used to support his hypothesis of continental drift and the evidence supporting plate tectonics.*
*Section: 02.02 History of a Theory: Continental Drift*
*Topic: History of a Theory: Continental Drift*

43. The mechanism causing lithospheric plates to move is thought to be

A. convection in the mantle.
B. "slab pull" caused by subducting lithosphere.
C. tidal forces.
D. Earth's rotation.
**E.** a combination of convection in the mantle and "slab pull" caused by subducting lithosphere.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.05 Motion of the Plates*
*Topic: Motion of the Plates*

44. Higher seafloor heat flow values are found

A. along coastlines.
B. in the middle of ocean basins.
**C.** near ocean ridge systems.
D. associated with abyssal hills.
E. along the edges of trenches.

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

45. Which of the following are found along subduction zones?

A. Oceanic trenches
B. Active earthquake zones
C. Island arc systems
**D.** All of these are correct.
E. None of these are correct.

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46. Magnetic stripes on the seafloor are created at



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A. subduction zones.
**B.** spreading centers.
C. abyssal plains.
D. subduction zones and spreading centers.
E. subduction zones, spreading centers, and abyssal plains.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Illustrate the formation of magnetic stripes on the sea floor.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

47. Plates move horizontally past each other along

**A.** transform faults.
B. convergent plate boundaries.
C. divergent plate boundaries.
D. the rift valley.
E. hot spots.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

48. The Pacific plate is carrying Baja California and the coastal cities of Southern California _____ the continent of North America.

A. away from (west)
B. toward (east)
C. southward along
**D.** northward along
E. None of these are correct; there is no motion in this region.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

49. Thinning of Earth's crust and the resulting faulting is called

A. convection.
B. subduction.
C. folding.
**D.** rifting.
E. trailing.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

50. The deep-ocean trenches are usually associated with

A. volcanism.
B. island arc systems.
C. earthquakes.
**D.** All of these are correct.
E. None of these are correct.

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*Blooms: 1. Remember*



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51. Seafloor spreading is continuing at a rate of approximately

**A.** 1 to 10cm/year.
B. 1 to 10m/year.
C. 1 to 10km/year.
D. 1 to 100cm/year.
E. 1 to 100m/year.

*Accessibility: Keyboard Navigation*
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*Section: 02.05 Motion of the Plates*
*Topic: Motion of the Plates*

52. A fixed volcanic hot spot on Earth tends to produce a _____ on a moving plate.

**A.** series of volcanic peaks
B. high landmass with a fixed location
C. transform fault system
D. submarine canyon and associated abyssal hills
E. trench

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.05 Motion of the Plates*
*Topic: Motion of the Plates*

53. The present oceans have been created during the last

A. 2250 million years.
**B.** 225 million years.
C. 20 million years.
D. 2 million years.
E. 2 billion years.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

54. Which of the following occurred during the Paleozoic era?

A. Landmasses were strung along Earth's equator.
B. Landmasses drifted across the South Pole.
C. Landmasses came together to form Pangaea.
**D.** All of these are correct.
E. None of these are correct.

*Accessibility: Keyboard Navigation*
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*Gradable: automatic*
*Learning Outcome: Review the evidence in a written summary Alfred Wegener used to support his hypothesis of continental drift and the evidence supporting plate tectonics.*
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55. A program of deep-sea drilling for cores from the ocean's bottom is carried out by the



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A. Kon-Tiki.
B. Fram.
**C.** JOIDES Resolution.
D. Calypso.
E. Beagle.

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*Chapter: 02 Earth Structure and Plate Tectonics*
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*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

56. The oceans' oldest sediments are found

A. adjacent to a rift valley.
**B.** on top of the basalt layer, far from spreading centers.
C. adjacent to a transform fault.
D. at the surface of sediment layers, far from spreading centers.
E. in hot spots.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

57. During the next magnetic reversal, the magnetic force field surrounding Earth will shift by about

A. 45°.
B. 90°.
**C**. 180°.
D. 270°.
E. 360°.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Illustrate the formation of magnetic stripes on the sea floor.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

58. The motion between the two sides of a transform fault is greatest

A. outside the adjacent ridge axes.
B. north of the adjacent ridge axes.
**C.** between the adjacent ridge axes.
D. south of the adjacent ridge axes.
E. east or west of the adjacent ridge axes.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

59. The trailing margin of a continental landmass _____ than its leading margin.

A. is wider
B. shows less tectonic activity
C. is more stable
**D.** All of these are correct.
E. is wider and is more stable

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*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

60. Which method is being used to investigate the structure of the mantle?

A. Isostasy
B. Measurement of seafloor heat flow
**C.** Seismic tomography
D. Subduction
E. Radiometric dating

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

61. The crust and the mantle are divided into the following layers in order of increasing depth:

A. mesosphere, lithosphere, asthenosphere
B. asthenosphere, lithosphere, mesosphere
C. lithosphere, mesosphere, asthenosphere
**D.** lithosphere, asthenosphere, mesosphere
E. asthenosphere, mesosphere, lithosphere

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Differentiate among the lithosphere, asthenosphere, and mesosphere.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

62. The east coast of the United States is an example of a(n) _____ continental margin.

A. passive
B. active
C. trailing
D. leading
**E.** passive and trailing

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

63. Seafloor spreading can be detected by

A. changes in water temperature.
B. changes in water chemistry.
C. acoustic monitoring.
D. submersible observation of the seafloor.
**E.** All of these are correct.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

64. Which of the Earth's layers has the greatest density?

**A.** Core
B. Mantle



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C. Crust
D. Lithosphere
E. Asthenosphere

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

65. Which layer of the Earth contains the greatest mass?

**A.** Core
B. Mantle
C. Crust
D. Lithosphere
E. Asthenosphere

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

66. Which layer is believed to behave most like a liquid?

**A.** Outer Core
B. Mantle
C. Crust
D. Lithosphere
E. Inner Core

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

67. Which statement is true about continental crust?

A. It is composed of granitic-type rock and has a higher density than oceanic crust.
B. It is composed of basaltic-type rock and has a higher density than oceanic crust.
**C.** It is composed of granitic-type rock and has a lower density than oceanic crust.
D. It is composed of basaltic-type rock and has a lower density than oceanic crust.
E. It is composed of granitic-type rock and has the same density as oceanic crust.

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*Chapter: 02 Earth Structure and Plate Tectonics*
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*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

68. When talking about plate tectonics, which of the Earth's layers comprises the plates?

A. Crust
B. Mantle
C. Core
**D.** Lithosphere
E. Asthenosphere

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
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*Learning Outcome: Differentiate among the lithosphere, asthenosphere, and mesosphere.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*



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69. What is the approximate length of the mid ocean ridge system that extends around the globe through all of the major ocean basins?

A. 6,500,000km
B. 650,000km
**C.** 65,000km
D. 6,500km
E. 650km

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Diagram the three types of plate boundaries.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

70. Volcanic activity occurs at all of the following except

A. convergent boundaries between two oceanic plates.
B. continental rift valleys.
**C.** convergent boundaries between two continental plates.
D. mid ocean ridges.
E. convergent boundary between a continental and oceanic plate.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

71. Earthquakes occur at all of the following except

A. convergent boundaries between two oceanic plates.
B. continental rift valleys.
C. convergent boundaries between two continental plates.
D. mid ocean ridges.
**E.** Earthquakes occur at all of the above settings.

*Accessibility: Keyboard Navigation*
*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

72. The density of the inner core reaches a maximum of about ____ grams/cm$^3$.

A. 150
B. 70
C. 52
D. 31
**E.** 16

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Sketch Earth's internal structure and label the thickness of each region.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

73. List the following plates in order of largest to smallest:

A. North American, Pacific, Australian, Caribbean, Indian
B. Pacific, Indian, North American, Australian, Caribbean
C. Indian, Pacific, North American, Caribbean, Australian



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**D.** Pacific, North American, Australian, Indian, Caribbean
E. Pacific, Australian, North American, Indian, Caribbean

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*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.04 Plate Tectonics*
*Topic: Plate Tectonics*

74. Throughout time, continents break apart and collide and ocean basins open and close.This cyclical process is known as the

**A.** Wilson cycle.
B. Wegener cycle.
C. lithospheric cycle.
D. Benioff cycle.
E. Richter cycle.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.06 History of the Continents*
*Topic: History of the Continents*

75. Before Pangaea, there was an earlier supercontinent we call

A. Panthalassa.
B. Gorda.
**C.** Rodinia.
D. Lefse.
E. Neogenia.

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Distinguish between continental drift and plate tectonics.*
*Section: 02.06 History of the Continents*
*Topic: History of the Continents*

76. Seismic surface waves travel at about the same speed as ocean waves.

**FALSE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior.*
*Section: 02.01 Earth's Interior*
*Topic: Earth's Interior*

77. Over 170 reversals of Earth's magnetic field have been recorded in the past 80 million years.

**TRUE**

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*Blooms: 1. Remember*
*Chapter: 02 Earth Structure and Plate Tectonics*
*Gradable: automatic*
*Learning Outcome: Illustrate the formation of magnetic stripes on the sea floor.*
*Section: 02.03 Evidence for a New Theory: Seafloor Spreading*
*Topic: Evidence for a New Theory: Seafloor Spreading*

# Chapter 02 Test Bank - Static Summary

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| | |
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| Learning Outcome: Describe how hotspots create island chains. | 1 |
| Learning Outcome: Diagram relative plate motions. | 1 |
| Learning Outcome: Diagram the three types of plate boundaries. | 19 |
| Learning Outcome: Differentiate among the lithosphere, asthenosphere, and mesosphere. | 3 |
| Learning Outcome: Discuss evidence in support of seafloor spreading. | 1 |
| Learning Outcome: Distinguish between continental drift and plate tectonics. | 15 |
| Learning Outcome: Explain how seismology has provided critical data for modeling Earth's interior. | 10 |
| Learning Outcome: Explain the relationship between volcanism and plate tectonics. | 1 |
| Learning Outcome: Identify the major plates. | 1 |
| Learning Outcome: Illustrate the formation of magnetic stripes on the sea floor. | 3 |
| Learning Outcome: Review the evidence in a written summary Alfred Wegener used to support his hypothesis of continental drift and the evidence supporting plate tectonics. | 4 |
| Learning Outcome: Sketch Earth's internal structure and label the thickness of each region. | 17 |
| Learning Outcome: Understand the evidence for seafloor spreading. | 1 |
| Section: 02.01 Earth's Interior | 26 |
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