

## Plate Tectonics, Earthquakes, and Volcanoes Test sp 12

### Multiple Choice

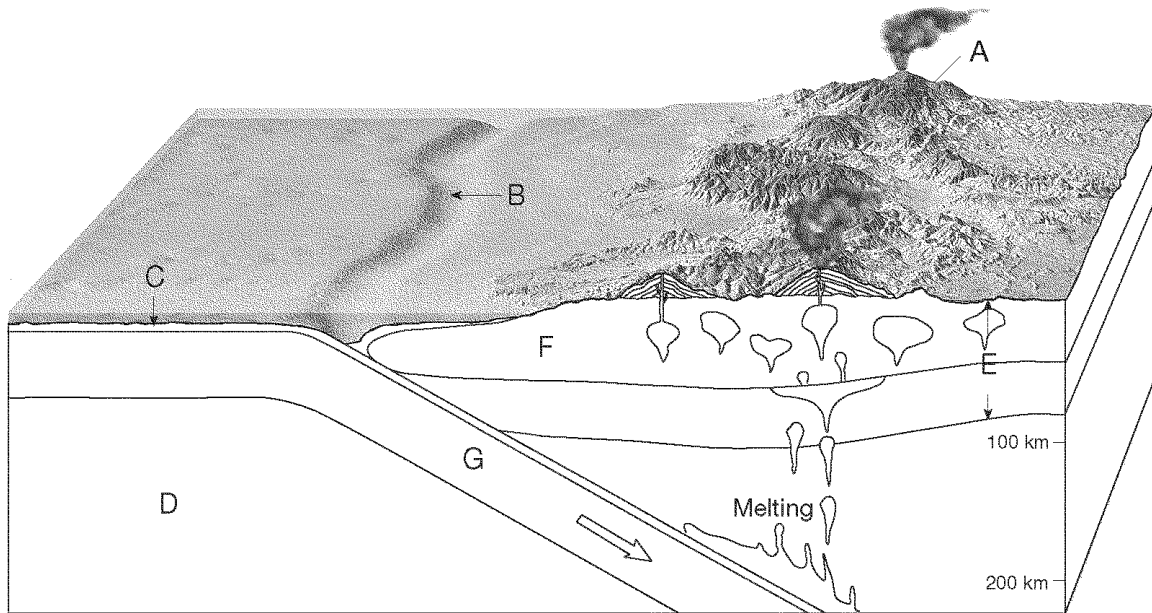
*Identify the choice that best completes the statement or answers the question.*

- \_\_\_\_ 1. Earthquakes generally occur at plate boundaries, where
  - a. stress on rocks is greatest.
  - b. the most rock is found.
  - c. stress on rocks is low.
  - d. magnetic pull is greatest.
- \_\_\_\_ 2. On the modified Mercalli scale, how is intensity XII described?
  - a. felt by only a few people indoors
  - b. causes light to moderate damage
  - c. causes damage to ordinary buildings
  - d. causes total destruction
- \_\_\_\_ 3. Which scale more accurately measures the magnitude of large earthquakes?
  - a. modified Mercalli scale
  - b. Richter scale
  - c. moment magnitude scale
  - d. Mohs scale
- \_\_\_\_ 4. Why do earthquakes usually occur at plate boundaries?
  - a. The rock on the edges of tectonic plates is soft and gives in easily to various pressures.
  - b. Rock in environments near tectonic plate boundaries experience great stress.
  - c. The boundaries between tectonic plates have been seismically active for millions of years.
  - d. Rock in environments near tectonic plate boundaries experience little stress.
- \_\_\_\_ 5. What is the epicenter of an earthquake?
  - a. the location along a fault where the first motion of an earthquake occurs
  - b. a seismic wave that travels along the surface of Earth
  - c. the point on Earth's surface directly above the earthquake's focus
  - d. the last place that motion in an earthquake is detected
- \_\_\_\_ 6. What is elastic rebound?
  - a. the sudden return of deformed rock to its undeformed shape
  - b. the gradual return of deformed rock to its undeformed shape
  - c. the sudden return of undeformed rock to its deformed shape
  - d. the gradual return of undeformed rock to its deformed shape
- \_\_\_\_ 7. Fault zones form at plate boundaries because
  - a. seismic gaps and shadow zones form there.
  - b. very little rock stress and strain occur there.
  - c. intense stress occurs there when the plates separate, collide, subduct, or slide past each other.
  - d. they have a long geologic history of occurring in the same places.
- \_\_\_\_ 8. Where does the first motion of an earthquake occur?
  - a. fault
  - b. focus
  - c. epicenter
  - d. locus
- \_\_\_\_ 9. This area is both a major earthquake zone and volcano zone.
  - a. Pacific Ring of Volcanoes
  - b. Pacific Ring of Fire
  - c. Oceanic Ring of Fire
  - d. Pacific Island Arc
- \_\_\_\_ 10. Which of the following is NOT a major volcano cone type?
  - a. cinder cone
  - b. shield
  - c. shield
  - d. shield

- b. composite
- d. mantle plume

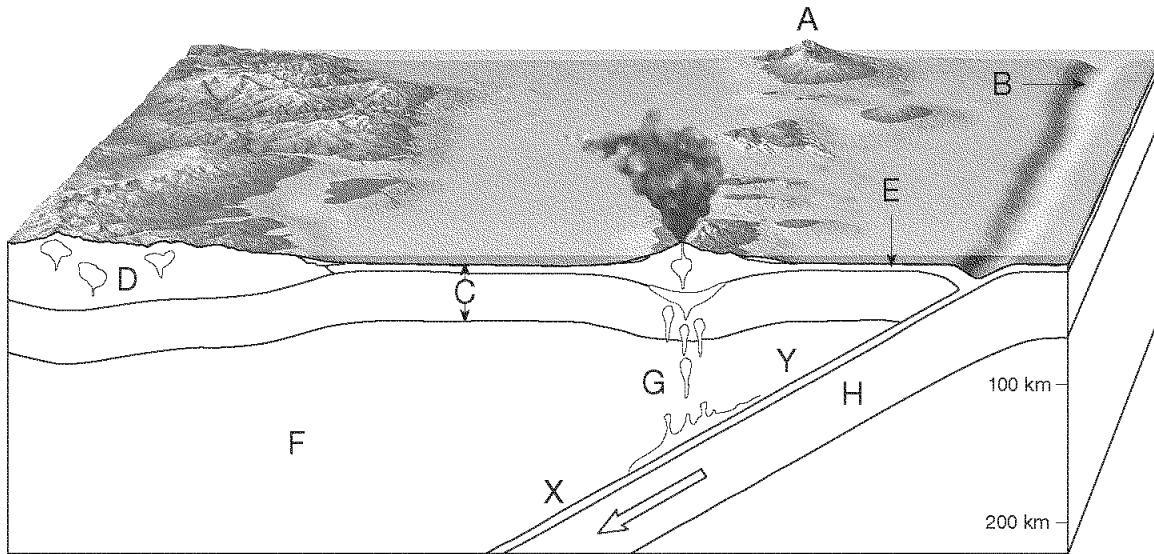
- \_\_\_\_ 11. An area of volcanic activity far from a tectonic plate boundary is called a(n)  
a. hot spot. c. island arc.  
b. cone. d. mantle plume.
- \_\_\_\_ 12. Most volcanoes occur \_\_\_\_\_.  
a. along convergent boundaries c. along divergent boundaries  
b. far from tectonic plate boundaries d. randomly
- \_\_\_\_ 13. The San Andreas Fault, a result of horizontal shear, is a \_\_\_\_\_ fault.  
a. blind c. strike-slip  
b. normal d. reverse
- \_\_\_\_ 14. A numerical scale of earthquake magnitude that takes into account the size of the fault rupture is the \_\_\_\_\_.  
a. Richter scale c. moment magnitude scale  
b. modified Mercalli scale d. epicentral distance scale
- \_\_\_\_ 15. Which of the following is true of earthquake prediction?  
a. It is unreliable. c. Scientists do not attempt it.  
b. It is impossible. d. It is not important.
- \_\_\_\_ 16. The San Francisco earthquake of 1906 occurred along what fault?  
a. the San Francisco fault c. the California fault  
b. the Pacific fault d. the San Andreas fault
- \_\_\_\_ 17. What instrument records earthquake waves?  
a. seismogram c. Richter scale  
b. seismograph d. barometer
- \_\_\_\_ 18. How much of an increase in wave amplitude is seen from an earthquake measuring 5.4 on the Richter scale compared to one measuring 4.4?  
a. two times c. 20 times  
b. ten times d. 100 times
- \_\_\_\_ 19. The Richter magnitude of an earthquake is determined from the \_\_\_\_\_.  
a. duration of an earthquake  
b. intensity of an earthquake  
c. arrival times of P waves and S waves  
d. measurement of the amplitude of the largest seismic waves
- \_\_\_\_ 20. The supercontinent in the continental drift hypothesis was called \_\_\_\_\_.  
a. Panthalassa c. Mesosaurus  
b. Pangaea d. Africa
- \_\_\_\_ 21. What hypothesis states that the continents were once joined to form a single supercontinent?  
a. plate tectonics c. continental drift  
b. seafloor spreading d. paleomagnetism
- \_\_\_\_ 22. One kind of evidence that supports Wegener's hypothesis is that \_\_\_\_\_.  
a. the same magnetic directions exist on different continents  
b. major rivers on different continents match  
c. land bridges still exist that connect major continents  
d. fossils of the same organism have been found on different continents
- \_\_\_\_ 23. What was the main reason Wegener's continental drift hypothesis was rejected?  
a. He was not well liked by other scientists.  
b. He could not provide a mechanism for the movement of the continents.  
c. He could provide only illogical explanations for the movement of the continents.  
d. His evidence was incorrect.

- \_\_\_\_ 24. According to the theory of plate tectonics, \_\_\_\_.
- the asthenosphere is divided into plates
  - the lithosphere is divided into plates
  - the asthenosphere moves over the lithosphere
  - the asthenosphere is strong and rigid
- \_\_\_\_ 25. In the plate tectonics theory, the lithosphere is divided into \_\_\_\_.
- 100 major plates
  - 7 major plates and many smaller plates
  - many small plates, but no large plates
  - 50 major plates and many smaller plates
- \_\_\_\_ 26. In the plate tectonic theory, a plate can be made up of \_\_\_\_.
- continental lithosphere only
  - oceanic lithosphere only
  - both continental and oceanic lithosphere
  - both continental and oceanic asthenosphere
- \_\_\_\_ 27. What kind of plate boundary occurs where two plates grind past each other without destroying or producing lithosphere?
- divergent boundary
  - convergent boundary
  - transitional boundary
  - transform fault boundary
- \_\_\_\_ 28. A divergent boundary at two oceanic plates can result in a \_\_\_\_.
- rift valley
  - volcanic island arc
  - continental volcanic arc
  - subduction zone
- \_\_\_\_ 29. What type of boundary occurs where two plates move together, causing one plate to descend into the mantle beneath the other plate?
- transform fault boundary
  - divergent boundary
  - convergent boundary
  - transitional boundary
- \_\_\_\_ 30. Which of the following is a geographic example of a transform fault boundary?
- the East African Rift valley
  - the San Andreas Fault
  - the Mid-Atlantic Ridge
  - the Andes Mountains
- \_\_\_\_ 31. Deep ocean trenches are associated with \_\_\_\_.
- ocean ridge systems
  - subduction zones
  - transform fault boundaries
  - rift zones



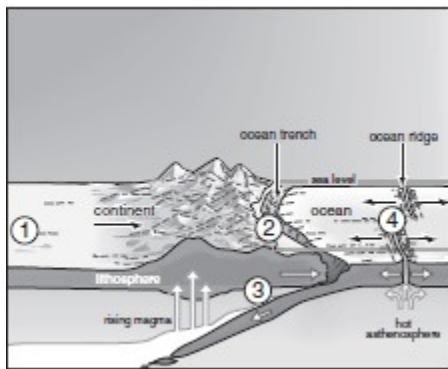
**Figure 9-1**

32. What type of plate boundary is illustrated in Figure 9-1?
  - a. transform fault boundary
  - b. divergent boundary
  - c. convergent oceanic-oceanic boundary
  - d. convergent oceanic-continental boundary
33. What feature is labeled B in Figure 9-1?
  - a. trench
  - b. ocean ridge
  - c. volcanic island arc
  - d. continental volcanic arc
34. What layer of Earth is labeled C in Figure 9-1?
  - a. asthenosphere
  - b. continental lithosphere
  - c. oceanic crust
  - d. continental crust
35. What process is illustrated by the area labeled G in Figure 9-1?
  - a. seafloor spreading
  - b. continental volcanism
  - c. rifting
  - d. subduction
36. The Himalayas in South Asia are an example of what type of plate boundary?
  - a. convergent oceanic-continental boundary
  - b. convergent continental-continental boundary
  - c. divergent boundary
  - d. transform fault boundary
37. Volcanic island arcs are associated with what type of plate boundary?
  - a. divergent boundary
  - b. convergent continental-continental boundary
  - c. convergent oceanic-continental boundary
  - d. convergent oceanic-oceanic boundary



### Figure 9-2

- \_\_\_\_\_ 38. What mechanism of plate motion is illustrated in Figure 9-2?  
a. seafloor spreading c. ridge-push  
b. slab-pull d. magnetic reversal
- \_\_\_\_\_ 39. What type of plate boundary is illustrated in Figure 9-2?  
a. divergent boundary  
b. convergent oceanic-continental boundary  
c. convergent continental-continental boundary  
d. convergent oceanic-oceanic boundary
- \_\_\_\_\_ 40. What feature is labeled A in Figure 9-2?  
a. subduction zone c. volcanic island arc  
b. trench d. continental volcanic arc
- \_\_\_\_\_ 41.



At which location would earthquakes be *least* likely to occur?

- a. 1 c. 3

- b. 2 d. 4
- \_\_\_ 42. Which type of volcano would be the *least* explosive?  
 a. cinder cone c. shield volcano  
 b. stratovolcano d. composite cone
- \_\_\_ 43. Convection, ridge push, and slab pull work together to produce  
 a. continental lithosphere. c. earthquakes.  
 b. constant tectonic plate motion. d. fracture zones.
- \_\_\_ 44. The youngest rocks on the ocean floor are typically located near what feature?  
 a. a mid-ocean ridge c. an abyssal plain  
 b. a continental shelf d. a subduction trench
- \_\_\_ 45. A rift valley is evidence of which kind of plate boundary?  
 a. convergent c. transform  
 b. divergent d. uniform
- \_\_\_ 46. The scale most widely used by scientists for measuring earthquakes is the \_\_\_\_\_.  
 a. seismic scale c. moment magnitude scale  
 b. Richter scale d. epicenter magnitude scale
- \_\_\_ 47. The Hawaiian Islands are associated with what type of volcanism?  
 a. intraplate volcanism at a hot spot  
 b. subduction zone volcanism  
 c. volcanism at a divergent plate boundary  
 d. volcanism at a convergent plate boundary
- \_\_\_ 48. The most conclusive proof for continental drift was provided by  
 a. the coastlines of continents on a map.  
 b. evidence of sea-floor spreading.  
 c. identical fossils found on two separate continents.  
 d. changes in climatic patterns.
- \_\_\_ 49. The driving forces of tectonic plates are related to convection currents in Earth's \_\_\_\_\_.  
 a. crust c. inner core  
 b. mantle d. outer core

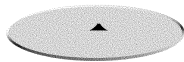
### Matching

Match each type of volcano with the correct illustration or description below.

- a. shield volcano c. composite volcano  
 b. cinder-cone volcano



\_\_\_ 50. \_\_\_\_\_



\_\_\_ 51. \_\_\_\_\_



\_\_\_ 52. \_\_\_\_\_

\_\_\_ 53. Made of layers of tephra and lava

- \_\_\_\_\_ 54. Forms from layers of basaltic lava
- \_\_\_\_\_ 55. Largest of the volcanoes

*Match each item with its correct statement below.*

- a. displays earthquake motion recorded by a seismograph
  - b. measures intensity
  - c. measures magnitude using ground motion
  - d. records ground vibrations
  - e. uses fault size and distance that fault blocks move to measure magnitude
- 
- \_\_\_\_\_ 56. moment magnitude
  - \_\_\_\_\_ 57. seismograph
  - \_\_\_\_\_ 58. Richter scale
  - \_\_\_\_\_ 59. modified Mercalli scale
  - \_\_\_\_\_ 60. seismogram

## Plate Tectonics, Earthquakes, and Volcanoes Test sp 12

### Answer Section

#### MULTIPLE CHOICE

1.	ANS: A OBJ: 4	PTS: 1 STA: 3d	DIF: 1	REF: 1
2.	ANS: D OBJ: 3	PTS: 1 STA: 3d	DIF: 1	REF: 2
3.	ANS: C OBJ: 3	PTS: 1 STA: 3d	DIF: 1	REF: 2
4.	ANS: B OBJ: 4	PTS: 1 STA: 3d	DIF: 1	REF: 1
5.	ANS: C OBJ: 1	PTS: 1 STA: 3d	DIF: 1	REF: 1
6.	ANS: A OBJ: 1	PTS: 1 STA: 3d	DIF: 1	REF: 1
7.	ANS: C OBJ: 4	PTS: 1 STA: 3d	DIF: 1	REF: 1
8.	ANS: B OBJ: 1	PTS: 1 STA: 3d	DIF: 1	REF: 1
9.	ANS: B OBJ: 3	PTS: 1 STA: 3f	DIF: 1	REF: 1
10.	ANS: D OBJ: 3	PTS: 1 STA: 3e	DIF: 1	REF: 2
11.	ANS: A OBJ: 3	PTS: 1 STA: 3f	DIF: 1	REF: 1
12.	ANS: A	PTS: 1		
13.	ANS: C	PTS: 1		
14.	ANS: C	PTS: 1		
15.	ANS: A OBJ: 4	PTS: 1 STA: 9b	DIF: 1	REF: 3
16.	ANS: D STA: 3.d	PTS: 1	DIF: L2	OBJ: 8.3
17.	ANS: B STA: 3.d	PTS: 1	DIF: L1	OBJ: 8.6
18.	ANS: B STA: 3.d	PTS: 1	DIF: L2	OBJ: 8.6
19.	ANS: D STA: 3.d	PTS: 1	DIF: L2	OBJ: 8.6
20.	ANS: B STA: 1.c	PTS: 1	DIF: L1	OBJ: 9.1
21.	ANS: C STA: 1.c	PTS: 1	DIF: L1	OBJ: 9.1
22.	ANS: D STA: 1.c	PTS: 1	DIF: L1	OBJ: 9.2
23.	ANS: B STA: 1.c	PTS: 1	DIF: L1	OBJ: 9.3

24.	ANS: B STA: 3.a	PTS: 1	DIF: L1	OBJ: 9.4
25.	ANS: B STA: 3.a	PTS: 1	DIF: L2	OBJ: 9.4
26.	ANS: C STA: 3.a	PTS: 1	DIF: L2	OBJ: 9.5
27.	ANS: D STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.6
28.	ANS: A STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.6
29.	ANS: C STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.6
30.	ANS: B STA: 3.b	PTS: 1	DIF: L2	OBJ: 9.6
31.	ANS: B STA: 3.a   3.f	PTS: 1	DIF: L1	OBJ: 9.8
32.	ANS: D STA: 3.a   3.b	PTS: 1	DIF: L1	OBJ: 9.6
33.	ANS: A STA: 3.a   3.b	PTS: 1	DIF: L1	OBJ: 9.8
34.	ANS: C STA: 3.a	PTS: 1	DIF: L1	OBJ: 9.5
35.	ANS: D STA: 3.a   3.f	PTS: 1	DIF: L1	OBJ: 9.8
36.	ANS: B STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.9
37.	ANS: D STA: 3.b	PTS: 1	DIF: L2	OBJ: 9.9
38.	ANS: B STA: 3.b	PTS: 1	DIF: L2	OBJ: 9.13
39.	ANS: D STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.9
40.	ANS: C STA: 3.b	PTS: 1	DIF: L1	OBJ: 9.9
41.	ANS: A	PTS: 1		
42.	ANS: C	PTS: 1		
43.	ANS: B OBJ: 3	PTS: 1 STA: 3c	DIF: 1	REF: 2
44.	ANS: A	PTS: 1		
45.	ANS: B	PTS: 1		
46.	ANS: C STA: 3.d	PTS: 1	DIF: L1	OBJ: 8.6
47.	ANS: A STA: 3.b	PTS: 1	DIF: L2	OBJ: 10.9
48.	ANS: B OBJ: 4	PTS: 1 STA: 3a	DIF: 1	REF: 1
49.	ANS: B	PTS: 1		

## MATCHING

50.	ANS: A	PTS: 1		
51.	ANS: B	PTS: 1		
52.	ANS: C	PTS: 1		
53.	ANS: C	PTS: 1		
54.	ANS: A	PTS: 1		
55.	ANS: C	PTS: 1		
56.	ANS: E	PTS: 1	DIF: 1	REF: 2
	OBJ: 2	STA: IE.1a		
57.	ANS: D	PTS: 1	DIF: 1	REF: 2
	OBJ: 1	STA: 3d		
58.	ANS: C	PTS: 1	DIF: 1	REF: 2
	OBJ: 3	STA: 3d		
59.	ANS: B	PTS: 1	DIF: 1	REF: 2
	OBJ: 3	STA: 3d		
60.	ANS: A	PTS: 1	DIF: 1	REF: 2
	OBJ: 1	STA: 3d		