Answer Key

Directed Reading A

SECTION: WHAT ARE EARTHQUAKES?

1. Seismology is the branch of Earth science devoted to studying earthquakes.
2. seismologists
3. Most earthquakes take place near the edges of tectonic plates.
4. tectonic plates
5. faults
6. Earthquakes happen along faults because of the sliding of the blocks of Earth's crust.
7. C
8. A
9. D
10. B
11. Rocks deform in response to the stress caused by the pushing, pulling, and slipping of tectonic plates.
12. The rock breaks, and elastic rebound occurs.
13. an earthquake
14. C
15. C
16. B
17. A
18. Most earthquakes happen in the earthquake zones along tectonic plate boundaries.
19. B
20. A
21. B
22. D
23. C
24. C
25. A
26. B
27. B
28. It depends on the kind of material the wave travels through.
29. Answers may vary. Accept either P waves, pressure waves, or primary waves.
30. Answers may vary. Accept either S waves, shear waves, or secondary waves.
31. Answers may vary. Sample answer: Surface waves travel along the surface of Earth and body waves travel inside Earth. Surface waves travel more slowly and are more destructive.
32. B
33. C
34. A

SECTION: EARTHQUAKE MEASUREMENT

1. C
2. A
3. B
4. D
5. Answers may vary but should include two of the following: calculating when an earthquake began, finding an earthquake's epicenter, determining an earthquake's strength.
6. S-P time method
7. seismograms
8. epicenter
9. Answers may vary. Sample answer: I could draw a circle around each station. The radius of the circle is the distance from each station to the epicenter. The point at which the three circles intersect is the epicenter of the earthquake.
10. D
11. C
12. A
13. C
14. B
15. D
16. A
17. The Richter scale measures the ground motion from an earthquake and adjusts for distance to find its strength.
18. Intensity values are usually highest near the epicenter.

SECTION: EARTHQUAKES AND SOCIETY

1. Earthquake hazard is a measurement of how likely an area is to have damaging earthquakes in the future.

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2. Answers may vary but should include the West Coast or California.
3. Answers may vary. Sample answer: Stronger earthquakes occur less often.
4. gap hypothesis
5. seismic gaps
6. aftershocks
7. gap hypothesis
8. D
9. C
10. B
11. A
12. B
13. flexible pipes
14. A common way to retrofit an older home is to securely fasten it to its foundation.
15. Sensors in an active tendon system notify a computer that a building is moving. Then the computer signals a large weight to shift in order to counteract the movement of the building.
16. Answers may vary. Sample answer: I can put heavier objects on lower shelves so they don't fall. I can talk to my parents about having our home strengthened.
17. Answers may vary. Sample answer: I can find safe places in each room of the home. I can also find safe places outside. I can plan with others to meet in a safe place after the earthquake is over.
18. Answers may vary. Sample answer: I can store things like water, nonperishable food, a fire extinguisher, a flashlight with batteries, a portable radio, medicines, and a first-aid kit in a place I can get to after an earthquake.
19. Answers may vary. Sample answer: The best thing to do is to crouch or lie face down under a table or desk in the center of a room.
20. Answers may vary. Sample answer: The best thing to do is to lie face down away from buildings, power lines, and trees and to cover my head with my hands.

Directed Reading B

SECTION: WHAT ARE EARTHQUAKES?

1. C
2. A
3. D
4. B
5. C
6. elastic rebound
7. plastic deformation
8. deformation
9. elastic deformation
10. B
11. C
12. A
13. A
14. B
15. C
16. D
17. C
18. B
19. seismic waves
20. body waves
21. surface waves
22. C
23. A
24. C
25. B
26. D
27. D
28. A
29. B
30. A

SECTION: EARTHQUAKE MEASUREMENT

1. C
2. B
3. A
4. D
5. B
6. D
7. A
8. B
9. C
10. C
11. B
12. A
13. C
14. A
15. D

SECTION: EARTHQUAKES AND SOCIETY

1. C
2. A
3. B
4. D
5. B
6. C

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