Name _____ Date _____

Plate Tectonics and Plate Boundaries: How Earth's Plates Pull Apart, Collide and Slide

Directions: Answer each question. In the number question, type only the number; the unit is shown next to the box.

1. Each term below is used in describing plate tectonics. Match each term to its meaning. Write the letter of the matching answer on each line.

1. _____ Tectonic plate
2. _____ Divergent boundary
3. _____ Convergent boundary
4. _____ Transform boundary
5. _____ Subduction

Choices for question 1

A. A place where a plate stops moving for good
B. A place where two plates move away from each other
C. A huge slab of Earth's rocky outer layer that moves a few centimeters a year
D. A place where two plates move toward each other
E. The slow wearing away of rock by wind and water
F. A place where two plates slide past each other sideways
G. One plate sinking beneath another plate into the mantle

2. Which two of these places sit on convergent boundaries, where plates move toward each other?

☐ A. The Mid-Atlantic Ridge
☐ B. The Andes Mountains
☐ C. The East African Rift
☐ D. The San Andreas Fault
☐ E. The Himalayas

3. Scientists who sampled rock from the floor of the Atlantic Ocean found that the youngest rock lies along the Mid-Atlantic Ridge, a divergent boundary, and that the rock gets older the farther it is from the ridge on either side. What best explains this pattern?

A. The two plates grind past each other at the ridge and break rock into new pieces.
B. Old seafloor sinks back into Earth at the ridge, leaving only young rock there.
C. Melted rock rises at the ridge and cools into new seafloor, which is then carried away on both sides as the plates spread apart.
D. Ocean water wears rock away fastest near the ridge, so only young rock is left.

4. Along the west coast of South America, the oceanic Nazca Plate sinks beneath the South American Plate. Which set of features would you most likely find there?

A. A wide rift valley where the land is slowly pulling apart

B. Flat land with no earthquakes, because the plates move so slowly

C. A long fault where the plates slide sideways, with no trench or volcanoes

D. A deep ocean trench offshore, strong earthquakes and a chain of volcanoes in the mountains

5. The Himalayas formed where the plate carrying India pushes into the Eurasian Plate. Both plates carry thick continental crust. Why did this collision push up very high mountains instead of making a deep ocean trench?

A. Continental crust is low in density and resists sinking into the mantle, so the colliding crust crumpled, folded and thickened.

B. The two plates are pulling apart, and the land between them rose up.

C. The plates slid past each other, and friction pushed the land upward.

D. One plate sank deep beneath the other, and the sinking plate piled up into mountains.

6. The San Andreas Fault in California is a transform boundary, where the Pacific Plate and the North American Plate slide past each other. Why are earthquakes common there?

A. The plates catch on each other and stay stuck while stress builds up, then slip suddenly.

B. Melted rock pushes up through the fault and shakes the ground.

C. The plates are pulling apart, and the ground keeps falling into the gap.

D. One plate is sinking under the other, so the ground keeps dropping.

7. Owen says Earth's plates float on a sea of melted rock, the way ice floats on a lake. What is wrong with his idea?

A. Nothing is wrong; the plates rest on a layer of liquid magma.

B. The rock under the plates is mostly solid, though it is hot enough to flow very slowly over long stretches of time.

C. The plates rest on solid rock that never moves at all.

D. The plates are held in place by Earth's magnetic field.

8. Distance = speed × time. Suppose a plate moves 5 centimeters a year. How many kilometers would it move in 1,000,000 years? There are 100,000 centimeters in 1 kilometer.

_____ km