

## **Plate Tectonics Study Guide KEY – Test Friday, March 7**

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|---|
| 1) <b><u>Pangaea</u></b> : Means “all lands” – Supercontinent formed when all the continents drifted together                                     |
| 2) <b><u>Divergent (Spreading) Boundary</u></b> : Where two plates move apart   |
| 3) <b><u>Convergent (Colliding) Boundary</u></b> : Where two plates come together   |
| 4) <b><u>Transform (Sliding) Boundary</u></b> : Where two plates slip past one another  |
| 5) <b><u>Convection</u></b> : Heat transfer through a liquid or gas   |
| 6) <b><u>Convection Currents</u></b> : Flow that transfers heat within a fluid. Exist in the mantle and outer core of the Earth                   |
| 7) <b><u>Core</u></b> : Center layer of Earth. Made of nickel and iron. Made up of two parts – the inner and outer core                           |
| 8) <b><u>Outer Core</u></b> : Made of iron & nickel and is liquid. Convection currents here cause plate movement & magnetic field                 |
| 9) <b><u>Inner Core</u></b> : Dense, solid ball of iron and nickel. Has the most pressure and highest temperature of the layers                   |
| 10) <b><u>Lithosphere</u></b> : Upper most part of the mantle and crust. Very rigid and brittle (easy to break).                                  |
| 11) <b><u>Asthenosphere</u></b> : Soft layer in the middle mantle. Solid, but flexible – can bend. Convection currents occur here.                |
| 12) <b><u>Seismic Waves</u></b> : Indirect evidence of the structure of the Earth. Produced by earthquakes.                                       |
| 13) <b><u>Subduction Zone</u></b> : Area where the ocean floor sinks beneath an ocean trench and moves back into the mantle.                      |
| 14) <b><u>Magnetic Reversal</u></b> : When the Earth’s magnetic poles flip  |
| 15) <b><u>Sonar</u></b> : Tool that bounces sound waves off of underwater objects and records the echo of them to find their distance             |
| 16) <b><u>Crust</u></b> : Layer of rock that forms the Earth’s outer skin. Includes both dry land and the ocean floor.                            |
| 17) <b><u>Mantle</u></b> : Solid layer of very hot rock. Different layers of the mantle have different physical characteristics                   |
| 18) <b><u>Tectonic Plate</u></b> : the separate sections of the lithosphere that fit together to make our crust.                                  |
| 19) <b><u>Continental Drift</u></b> : the slow movement of the continents over Earth’s surface.   |
| 20) <b><u>Sea-Floor Spreading</u></b> : Process where the sea floor spreads apart and new crust is added. Ocean floor moves like a conveyor belt. |

### **Questions:**

1. Name the three basic compositional layers of the earth.

**Core, Mantle, Crust**

2. Name the five physical layers of the earth (see if you can figure this one out...).

**Lithosphere, Asthenosphere, Lower mantle, Outer Core, Inner Core**

3. What was Alfred Wegener's Theory?

**That all the continents were once connected in a supercontinent called Pangaea**

4. What evidence is there to support Wegener's theory? List 3 things.

1. **Fossils**

2. **Land Features**

3. **Climate change**

5. Where do we find evidence of sea-floor spreading?

**At mid-ocean ridges**

6. What causes the earth's plates to move?

**Convection currents in the mantle and outer core**

7. What tectonic plate action causes each of the below boundary types? Give a physical example on the Earth of the results of these actions. (e.g. A specific example or general land feature formed)

#### **❖ Convergent Boundaries:**

- ♦ continental/continental:

**Crash into one another, causes folding of rock (mountains). Ex – Himalaya Mtns.**

- ♦ continental/oceanic:

**Crash into one another, subduction of oceanic plate (volcanoes). Ex – Oregon/Wash.**

- ♦ oceanic/oceanic:

**Crash into one another, subduction of 1 oceanic plate (volcanoes). Ex. – Japan**

#### **❖ Divergent Boundaries:**

- ♦ Oceanic:

**Move away from one another, opens a crack in floor. Ex. – mid-ocean ridge**

(sea floor spreading) (underwater mountain chain)

- ♦ Continental:

**Move away from one another, continent bends, top cracks. Ex. – Rift Valley**

#### **❖ Transform Boundaries:**

**Plates slide past each other, not on top or below. Ex. – San Andreas Fault**

8. Explain why the earth does not continually expand throughout time.

**Subduction occurs, moving material back into the Earth.**