Name: _____ Period: _____ Date: _____

Geosphere Unit Study Guide

Part I: Earth's Changing Surface: *This heading covers the following sections: 1.2 "A View of the Earth"; 1.4 "Earth Systems"; 3.1 "The Rock Cycle"; 5.1 "Weathering"*

1) List and briefly define the four spheres of our planet.

2) Describe the rock cycle.

3) List and describe each of the three main rock types. Give an example for each.

4) Explain how the processes of weathering, erosion and deposition differ from each other in the formation of sedimentary rock.

5) What is the difference between mechanical and chemical weathering? Provide an example of each type.

6) List some different agents of erosion. Which one has the greatest effect on our planet's surface?

7) When humans clear natural vegetation (deforestation) to grow crops or build towns, how might our actions affect the erosion of the soil?

8) What are fossil fuels, and how do they form? Provide three examples of fossil fuels.

Part II: Earth's Structure & Plate Tectonics: *This heading covers the following sections: 8.1 "What is an Earthquake?"; 8.4 "Earth's Layered Structure"; 9.1 "Continental Drift"; 9.2 "Seafloor Spreading"; 9.3 "The Theory of Plate Tectonics".*

9) How do scientists study and learn about the interior of our planet? What do earthquakes have to do with it?

10) List and describe the five layers of the Earth based on their physical properties.

11) What is difference between the asthenosphere and the lithosphere? Which one makes up the tectonic plates?

12) List several pieces of evidence Wegener used to support his theory of Continental Drift.

13) **Divergent Boundary**: How are the plates moving? Is crust being created, destroyed or neither? What process occurs here? What ocean features exist here?

14) **Convergent Boundary**: How are the plates moving? Is crust being created, destroyed, or neither? What process occurs here? What ocean & land features exist for each of the collision types (continental–oceanic; oceanic–oceanic; continental–continental)?

15) **Transform Boundary**: How are the plates moving? Is crust being created, destroyed, or neither? What happens here?

16) What is a convection current? What causes convection currents? Why are convection currents important to the theory of plate tectonics?

Part III: Earth's History: *This heading covers the following sections: 12.1 "Discovering Earth's History"; 12.3 "Dating With Radioactivity"; 12.4 "The Geologic Time Scale".*

17) What type of rock are fossils most often found in? Why?

18) What is the difference between relative dating and radiometric dating? Explain each form of dating.

19) What is an index fossil?

20) What is meant by the term, half-life?

21) Why do scientists use different radioactive substances like Uranium-238 and Carbon-14 to date fossils? How are these two radioactive substances different?

22) How old is the Earth estimated to be?

23) Put the following units of the geologic time scale in order from largest to smallest: (Period; Epoch; Eon; Era)

24) What type of event usually marks the end of a geologic era (e.g. the K-T boundary)?

25) Put these four units of time in order from earliest to most recent: (Mesozoic, Paleozoic, Precambrian, Cenozoic)