## Astronomy

Chapter 6	Name:
Worksheet 1	Block:

## Match the definitions to the correct word or term

 1.	Aurora	Α.	A phenomenon in which the Earth's surface temperature has been observed to increase significantly over the last century
 2.	Convection	В.	The property if a magnet that causes it to have a north and south pole
 3.	Coriolis effect	C.	The light emitted by atoms and molecules in the upper atmosphere
 4.	Crust	D.	The molten interior of a planet
 5.	Daughter atoms	E.	The breakdown of the atomic nucleus by the emission of subatomic particles
 6.	Density	F.	The solid surface of a planet, moon, or other solid body
 7.	Differentiation	G.	A layer of Earth's atmosphere extending from about 12 to 50 Im above the surface
 8.	Global warming	Н.	The breaking apart of a continental plate
 9.	Greenhouse effect	I.	The rising and sinking motions in a liquid or gas that carry heat upward through a material
 10.	Jet stream	J.	The slow change in direction of the pole of a spinning body
 11.	Liquid core	K.	Doughnut-shaped regions surrounding the Earth containing charge particles trapped by the Earth's magnetic field
 12.	Magnetic field	L.	The atoms produced by the decay of a radioactive element
 13.	Magnetic lines of force	M.	The sinking of one crustal plate where it encounters another
 14.	Mantle	N.	The solid, upper portion of a planet immediately below the crust
 15.	Ozone	О.	Waves generated in Earth's interior by earthquakes
 16.	Plate tectonics	Ρ.	A form of oxygen consisting of three oxygen atoms bonded together
 17.	Polarity	Q.	The separation of different previously mixed materials inside a planet or other object
 18.	Precession	R.	Materials composed of silicon and oxygen, and generally containing other substances as well
 19.	Radioactive decay	S.	The trapping of heat by a planet's atmosphere, making the planet warmer than would otherwise be expected
 20.	Radioactive element	Т.	An element that undergoes radioactive decay and breaks down into a lighter element
 21.	Rifting	U.	Fictitious lines used to visualize the orientation and strength of a magnetic field
 22.	Seismic waves	V.	The hypothesis that the crust of the Earth is divided into large regions that move very slowly over the planet's surface

 23. Silicates	W.	A narrow stream of high-speed wind that blows in the atmosphere of a planet
 24. Inner core	Х.	The innermost part of a planet
 25. Stratosphere	Y.	A deflection of a moving object caused by its motion across the surface of a rotating body
 26. Subduction	Z.	A representation of the means by which magnetic forces are transmitted from one body to another
 27. Troposphere	AA.	The mass of a body or region divided by its volume
 28. Van Allen radiation belts	BB.	The lowest layer of the Earth's atmosphere extending up to about 12 km

## Circle the letter that corresponds to the correct answer

29. Scientists think the Earth's core is composed mainly of

- a. Silicate rocks
- b. Uranium
- c. Lead
- d. Sulfur
- e. Iron
- 30. Our knowledge of the composition of the Earth's core comes from
  - a. Analysis of earthquake waves
  - b. X-ray pictures taken with a powerful device in Russia
  - c. Samples obtained by drilling deep holes
  - d. Analysis of the material erupted from volcanoes
  - e. Both (c) and (d)
- 31. The slow shifts of our planet's crust are believed to arise from
  - a. The gravitational force of the Moon pulling on the crust
  - b. The gravitational force of the Sun pulling on the our planet's crust
  - c. The Earth's magnetic field drawing iron in crustal rocks toward the poles
  - d. Heat from the interior causing convective motion, which pushes on the crust
  - e. The great weight of mountain ranges forcing the crust down and outward from their bases
- 32. Scientists use radioactivity in rock samples to measure
  - a. The temperature on the Earth's core
  - b. The depth of the oceans
  - c. The Earth's age
  - d. The composition of the mantle
  - e. The composition of the inner core
- 33. What evidence indicates that part of the Earth's interior is liquid?
  - a. With sensitive microphones, sloshing sounds can be heard
  - b. We know the core is lead, and we know the core's temperature is far above lead's melting point
  - c. Deep bore holes have brought up liquid from a depth of about 4000 kilometers
  - d. No S-type seismic waves are detectable at some locations after an earthquake
  - e. S-type waves are especially pronounced at all locations around the Earth after an earthquake
- 34. Plate motion at subduction zones can cause (more than one answer may be correct)
  - a. Earthquakes
  - b. Convection currents in the Earth's mantle
  - c. Plates to grow larger
  - d. Volcanic activity
  - e. The creation of mountains

- 35. The presence of a strong magnetic field around a planet like the Earth is evidence for
  - a. Rotational and convective motion in a liquid core
  - b. The presence of an atmosphere
  - c. A slow rotational period
  - d. Intense heat in the core
- 36. Why is carbon dioxide called a "greenhouse gas"?
  - a. It is generated when plants are burned
  - b. It is needed by plants to grow
  - c. It absorbs infrared light
  - d. It appears greenish when concentrated
- 37. The Coriolis effect is why the Earth rotates counterclockwise as seen from above
  - a. True
  - b. False

## Answer the following questions

- 38. What are some of the more common elements composing the Earth?
- 39. What is the relation between rising and sinking material in the Earth's interior and subduction and rifting?
- 40. What is precession? What are some possible consequences?
- 41. How is the aurora related to the Earth's magnetic field?
- 42. If the Earth rotated more slowly, would you expect it to have as strong a magnetic field?