

For everyone with their last name beginning with K-Z

Natural Science 100

Name _____

The Evolution of the Earth – Test II

Use the Index to find your answers

1. Why do the moon and the sun appear to be the same size in the sky?
 - a. The sun and the moon are the same distance from earth
 - b. The moon and the sun are the same size.
 - c. The moon is much smaller and much closer to the earth than the sun
 - d. The sun is somewhat larger and farther away than the moon

2. In table 33.1, Saturn's distance from the sun is 9.54 AU. How far is Saturn from Earth?
 - a. 118,000 km
 - b. 8.54 AU
 - c. 10.54 AU
 - d. 28.46 years

3. To us on earth, Venus is a 'morning and evening' star because
 - a. Venus is sometimes closer to the sun than the earth.
 - b. Venus is a terrestrial planet.
 - c. Venus is always closer to the sun than the earth.
 - d. Venus most resembles the earth orbit.

4. Jupiter radiates about twice as much heat as it receives from the sun
 - a. The extra heat came thermal energy generated from gravitational contraction long ago.
 - b. The extra heat came gravitational contraction generated from thermal energy long ago.
 - c. The extra heat comes from the Jovian atmosphere that can trap excess heat like Global Warming.
 - d. The extra heat comes from the interior of the planet. It is a ball of hydrogen. Jupiter is large enough to sustain fusion.

5. If I want to slow something down with as little disturbance as possible you would
 - a. decrease momentum of the object over long time.
 - b. decrease momentum of the object over a short time.
 - c. increase the force of the slowing mechanism.
 - d. increase the impulse.

6. A parachutist in free fall, before she opens her chute
 - a. are accelerating toward earth at zero g.
 - b. is weightless, with gravity acting on her.
 - c. is weightless, with no gravity acting on her.
 - d. experiences balanced forces on her.

7. Ocean tides, earth tides and atmospheric tides are greatest
 - a. in the morning when the sun comes up.
 - b. during the rising and setting of the moon.
 - c. in the spring and fall.
 - d. at the time of a new or full moon.

8. How can you calculate the radius of a planet's orbit from its orbital period?
 - a. Using Kepler's first law, only.
 - b. Timing the planet's period and using Kepler's second law.
 - c. Timing the planet's period and using Kepler's second law.
 - d. Knowing how fast it travels in its orbit and using Kepler's third law.

9. What happens when you drink through a straw?
 - a. By sucking, you reduce the air pressure in the straw. Atmospheric pressure on the drink then pushes the liquid up the straw.
 - b. By sucking, you reduce the volume in the straw. Atmospheric pressure on the drink then pushes the liquid up the straw.
 - c. By sucking, you reduce the distance in the straw. Atmospheric pressure on the drink then pulls the liquid up the straw.
 - d. By sucking, you reduce the air pressure in the straw. Atmospheric pressure on the drink then pulls the liquid up the straw.

10. Why will dropping a magnet on to the floor make it a weaker magnet?
 - a. The electric charges of the magnetic field become misaligned when dropping the magnet onto the floor.
 - b. Magnetism is an all or nothing phenomena. Once you disturb the magnetic domain it loses strength.
 - c. The magnetic domains will become aligned producing a demagnification of the magnet
 - d. The magnetic domains in the magnet will 'bounce' around and re align themselves in more random directions.

11. Sound waves are similar to light waves and different from light waves. How?
 - a. Sound and Light waves are both transverse. Light waves are much much faster than sound waves.
 - b. Light waves are longitudinal and sound waves are transverse waves. Sound and light travel very fast.
 - c. Light can travel in empty space. Sound needs a medium to travel. Sound and Light are both longitudinal waves.
 - d. Sound waves are longitudinal and Light waves are transverse waves. Light waves are much much much faster than light waves. Sound and light travel in waves.

12. Isotopic dating or radiometric dating utilize the phenomenon of radioactivity to deduce past dates. Carbon-14 dating specifically utilizes the ratio of Carbon-12 to Carbon-14 in dead living tissue (fossils) to determine the time of death. Where did the Carbon-14 come from?
- Cosmic rays slamming into a Nitrogen atom in the upper atmosphere. The nitrogen decayed into Carbon-14. The Carbon-14 mixed in with CO_2 and then into living tissue.
 - Cosmic rays slamming into a Carbon atom in the upper atmosphere. The Carbon decayed into Carbon-14. The Carbon-14 mixed in with CO_2 and then into living tissue.
 - Plants and animals ingest CO_2 through breathing and eating. The Carbon-12 transmutes into Carbon-14 and is left in the tissues of dead and fossilized animals and plants.
 - Cosmic rays are bombarding plants and animals all the time. These rays cause Carbon in CO_2 to decay into Carbon-14. After these plants and animals die the Carbon-14 stays in the tissues. We can then measure this carbon-14 using a Geiger counter.
13. How do can we make water smell and taste better?
- we can distill it
 - we can run it through air columns to aerate it.
 - we can blast it with ultraviolet light
 - we can treat it with chemicals react with unwanted substances that settle to the bottom
14. What was the missing piece of evidence for Continental Drift?
- Ice core data from Greenland
 - The mechanism for fossils to get across the Atlantic Ocean
 - Paleomagnetic data about the movement of the poles.
 - A mechanism to explain how the movement of the continents occurred.
15. Which of the phenomena below cannot be explained by Plate Tectonics?
- the water cycle, atmospheric mixing and ice ages
 - Mountain chains, volcanoes and earthquakes.
 - the rock cycle and metamorphism
 - development and destruction of the ocean floors and sedimentary rocks
16. When does the ice become a true glacier?
- When melted ice forms at the base.
 - Not until it moves under its own weight
 - After enough snow has fallen to make it 100 meters high
 - It depends on the temperature and pressure and mineral content of the ice.
17. Radiometric dating is based on the two assumptions that once a mineral (rock) has crystallized, any daughter product within it originates only from the decay of the unstable parent and that there is no leakage of parent or daughter products into or out of the mineral (rock). What could cause the daughter products separating from the parent products?
- The rock could be reheated, melted and mixed with other melted rocks. This would transform the radioactive products into other elements erasing the 'time clock'.
 - Rocks get tossed around due to water and wind and plate tectonics. We need to keep the rocks together to get an accurate date.
 - Radioactivity is sensitive to heat, temperature and pressure. So, the 'time clock' would be erased due to higher temperature and pressure.
 - The rock could be reheated, melted and mixed with other melted rocks. This would erase the ratio of parent to daughter products that scientists need to be able to date the rock.

18. Why is the Paleozoic Era better known than the Precambrian period?
- a. Only single-celled creatures were around in the Precambrian period.
 - b. The earth has melted and reformed so many times leaving no traces of the long past.
 - c. Changing sea levels accelerated the evolution of shelled organisms. Shelled organisms leave hard shells as fossils that can be found by modern scientists.
 - d. Erosion from wind and water have washed away all obvious fossils.
19. Tides are caused by
- a. the moon because it is so close.
 - b. the differential gravitational attraction of the moon with the near side of earth and with the farside of the earth.
 - c. The alignment of the moon and the sun.
 - d. When the sun and moon are at right angles with each other with respect to the earth.
20. Weight is not directly a manifestation of gravity.
- a. Is an intrinsic quality of all objects.
 - b. Weight is when gravity acts on you.
 - c. Is sensed when falling toward earth.
 - d. It results in when some force other than gravity acts (such as a floor supporting you, or a rocket engine accelerates you).