

Name: \_\_\_\_\_

Score: \_\_\_\_\_

## 10 Multiple choice questions

Term

1 of 20

What fraction of the 92 natural elements are required for life?

- ☐ Only 5 elements are required for life.
- ☐ About 25 elements are required for life.
- ☐ None of the elements are required for life.
- ☐ All 92 elements are required for life.

Term

2 of 20

What is an acid?

- ☐ A substance that absorbs  $H^+$  ions and increases pH.
- ☐ A substance that does Not react with water at all.
- ☐ A substance that releases  $H^+$  ions when dissolved in water.
- ☐ A substance that forms solid precipitates in water.

Term

3 of 20

What are radioactive tracers?

- ☐ Stable isotopes that do not emit any energy.
- ☐ Isotopes that are used solely for industrial purposes.
- ☐ Elements that are only found in trace amounts in the earth's crust.
- ☐ Isotopes that emit energy and electrons, used to track atoms in biological systems.

Term

4 of 20

What is the first step in the scientific method?

- ☐ Observation/Exploration.
- ☐ Natural Selection.
- ☐ Seminars/meetings And Scientific Literature/publications.
- ☐ Evolution.

Term

What is a compound?

- ☐ A compound is an ion with a charge.
- ☐ A compound is a mixture of elements.
- ☐ A compound consists of two or more elements in fixed proportions.
- ☐ A compound is a single element.

Term

6 of 20

What is a valence shell?

- ☐ The shell that contains only neutrons.
- ☐ The shell that determines the mass of the atom.
- ☐ The outermost shell of an atom, where electrons determine how the atom will bond.
- ☐ The innermost shell of an atom, containing all protons.

Term

7 of 20

What is the role of water as a solvent?

- ☐ It repels all types of molecules.
- ☐ It solidifies most substances at low temperatures.
- ☐ It only dissolves gases and not solids.
- ☐ It dissolves many substances, including salts, proteins, and sugars.

Term

8 of 20

What is an example of an organism's adaptation to its environment?

- ☐ The color of the beach mouse, which is well matched to its local background.
- ☐ The size of the beach mouse, which is significantly larger than other mice.
- ☐ The diet of the beach mouse, which consists solely of fruit.
- ☐ The habitat of the beach mouse, which is found in urban areas.

Term

9 of 20

What happens to an atom when it loses electrons?

- ☐ It becomes negatively charged.
- ☐ It becomes positively charged.
- ☐ It remains neutral.
- ☐ It becomes neutral.

Term

What is a covalent bond?

- ☐ A bond formed when electrons are transferred from one atom to another.
- ☐ A bond that does not involve any electrons.
- ☐ A bond formed when two atoms share electrons.
- ☐ A bond that occurs only in ionic compounds.

**10 Matching questions**

- |                      |  |   |
|----------------------|--|---|
| <input type="text"/> | What is the first electron shell's capacity?               | <b>A.</b> Inherited traits that enhance survival in an organism's specific environment. |
| <input type="text"/> | What are Van der Waals interactions?                       | <b>B.</b> The first electron shell can hold 2 electrons.                                |
| <input type="text"/> | What is the second electron shell's capacity?              | <b>C.</b> The second electron shell can hold 8 electrons.                               |
| <input type="text"/> | What makes water a polar molecule?                         | <b>D.</b> Electrons spend more time near the oxygen than the hydrogen.                  |
| <input type="text"/> | What are evolutionary adaptations?                         | <b>E.</b> Highly basic solutions, such as sodium hydroxide.                             |
| <input type="text"/> | What does the mass number represent?                       | <b>F.</b> Substances that are water-loving and dissolve well in water.                  |
| <input type="text"/> | What does the pH scale measure?                            | <b>G.</b> Weak charge attractions between polar molecules.                              |
| <input type="text"/> | What are some examples of organisms in the domain Eukarya? | <b>H.</b> The concentration of free H <sup>+</sup> ions in solutions.                   |
| <input type="text"/> | What are hydrophilic substances?                           | <b>I.</b> The number of protons plus the number of neutrons in an atom.                 |
| <input type="text"/> | What does a pH of 14 represent?                            | <b>J.</b> Amoebas, algae, dinoflagellates, diatoms.                                     |