

Name _____

NOTE: There are no computers (dictionaries) or extra pieces of paper allowed. You can write on this quiz paper.

1. All of the following are subatomic particles correctly matched with their charge **EXCEPT**
- | | |
|------------------------|-----------------------|
| A. electron – negative | C. neutron – negative |
| B. proton – positive | D. neutron – neutral |
2. A(n) _____ is composed of two or more types of _____.
- | | |
|---------------------|--------------------|
| A. organ; organism | D. atom; molecules |
| B. cell; tissue | E. organ; tissue |
| C. tissue; organism | |
3. A substance that is used to stabilize the pH of a solution by changing the amount of hydrogen ions in that solution is called
- | | |
|-------------|-----------------|
| A. an acid. | D. a buffer. |
| B. a base. | E. homeostasis. |
| C. a salt. | |
4. After exercising for an hour, a person becomes extremely thirsty. This is because she sweated a lot, and the volume of fluid became low enough to be noticed by the hypothalamus (a structure in the brain). The hypothalamus sends a message to your cerebral cortex (another structure in the brain) to initiate movements to get some water. The control center in this scenario is the
- | | |
|---------------------|---------------------|
| A. person. | D. water. |
| B. hypothalamus. | E. volume of fluid. |
| C. cerebral cortex. | |
5. The example in the previous question is demonstrating
- | | |
|-----------------------|---------------------|
| A. positive feedback. | C. differentiation. |
| B. negative feedback. | D. pathology. |
6. A cation is
- A. an atom with a filled outer energy level.
 - B. an atom in a polar covalent bond.
 - C. an ion with more electrons than protons.
 - D. an ion with more protons than electrons.
 - E. an ion with more neutrons than electrons.
7. Tomatoes have a pH of approximately 4.2. Therefore, they are
- | | | | |
|----------|------------|-----------|------------------|
| A. basic | B. neutral | C. acidic | D. physiological |
|----------|------------|-----------|------------------|

Use this diagram to answer questions 8-11.

18
Argon
Ar
39.948

8. What is this atom's atomic number?
A. 18 B. 9 C. 39.948 D. 22 E. 20
9. How many neutrons does this atom have?
A. 18 B. 9 C. 40 D. 22 E. 20
10. Which of the following best describes how this atom will react?
A. Argon will give up its valence electrons, becoming a cation.
B. Argon will attract valence electrons from another atom, becoming an anion.
C. Argon will most likely undergo covalent bonding with another atom.
D. Argon will not react with another atom because it is inert.
E. There is not enough information to answer this question.
11. An isotope of argon would have
A. the same atomic number.
B. the same number of neutrons.
C. more energy levels.
D. the same mass number.
E. All of the above are correct.
12. Homeostasis is
A. the existence of a stable internal environment.
B. usually maintained by negative feedback mechanisms.
C. usually maintained by positive feedback mechanisms.
D. A and B
E. A and C
13. When KCl is added to NaOH, the products will be
A. KNa and ClOH D. KOH and NaCl
B. K and Na E. NaOH
C. KCl
14. The type of reaction that is described in the previous questions is
A. always reversible D. dissociation
B. decomposition E. exchange
C. synthesis

15. Which of the following is NOT a characteristic of a free radical?
- A. Unstable
 - B. Reactive
 - C. Responsible for weak forces between molecules
 - D. Cause chain reactions
 - E. Some are harmful and some are beneficial
16. Which of the following is a correct match of an example with its specific characteristic of organisms?
- A. Blood moves through blood vessels – Responsiveness
 - B. Some birds fly to a warmer climate in the winter – Growth and differentiation
 - C. A bear produces a baby cub – Organization
 - D. A child increases in size starting at conception – Growth and differentiation
 - E. The inside of an amoeba (single-celled organism) is protected by a membrane – Responsiveness
17. The type of bonding in which electrons are equally shared between atoms, forming a strong bond, is
- A. polar covalent.
 - B. nonpolar covalent.
 - C. ionic.
 - D. hydrogen.
18. Decomposition reactions are an example of
- A. synthesis.
 - B. anabolism.
 - C. catabolism.
 - D. exchange.
 - E. reversible reactions.
19. A strong acid
- A. releases an OH^- (hydroxide ion).
 - B. does not dissociate completely.
 - C. indirectly affects pH
 - D. dissociates completely.
20. Which subatomic particle is responsible for determining how an atom will react?
- A. electron
 - B. proton
 - C. neutron
 - D. atom
 - E. molecule
21. All of the following are examples of salts except
- A. HCl
 - B. NaCl
 - C. KCl
 - D. NaF
 - E. KBr
22. Which of the following is not a system of the body?
- A. Muscular
 - B. Urinary
 - C. Homeostasis
 - D. Digestive
 - E. Cardiovascular

23. Hydrogen bonding

- A. is responsible for the 3D shapes of molecules.
- B. occurs between hydrogen and oxygen or nitrogen.
- C. occurs because of polar covalent bonding in molecules.
- D. A and B are correct.
- E. All of the above are correct.

24. When a pregnant woman is giving birth, a hormone called *oxytocin* is released. This hormone is released in response to the fetus pushing against her uterus on its way down the birth canal. When oxytocin is released, it creates more contractions of the uterus, pushing the fetus farther down. This is an example of

- A. intrinsic mechanisms.
- B. differentiation
- C. negative feedback
- D. positive feedback

25. A person is admitted to the emergency room and is found to have a pH of 7.7. This person is

- A. acidic.
- B. basic.
- C. within the normal range.
- D. neutral.