

Chapter 8 Quiz

Part A: Modified True/False

Indicate in the left-hand column whether each statement is true or false. If the statement is false, change the statement to make it true.

- ____ 1. Organic compounds contain a high percentage of oxygen.

____ 2. A solution with a pH of 2 has 10 times more H⁺ ions than one with a pH of 3.

____ 3. A carbon atom has 2 valence electrons in its outer shell.

Part B: Matching

Match each type of ionic compound with its description.

Part C: Completion

Complete the following sentences.

7. _____ react with certain metals to produce hydrogen gas.
 8. Bases turn _____ litmus paper _____.
 9. In order to draw a Lewis diagram of an atom, you must determine the number of
_____.
 10. Lone electron pairs do not form _____.

Part D: Multiple Choice

Circle the letter beside the answer that best completes the statement or answers the question.

Chapter 8 Quiz (continued)

13. Why do Lewis diagrams show only valence electrons?
- Valence electrons are the electrons closest to the nucleus.
 - Valence electrons are the only kind of electrons in an atom.
 - Valence electrons are the only electrons involved in bonding.
 - There are more valence electrons than other kinds of electrons.

14. Why are methane (CH_4), butane (C_4H_{10}), and octane (C_8H_{18}) all considered hydrocarbons?

- They all occur naturally within Earth.
- They contain only carbon and hydrogen.
- They can be represented by structural formulas.
- They have the same chemical and physical properties.

15. Which of the following is the correct Lewis diagram of a calcium atom?

- | | |
|---|---|
| A. $\overset{\cdot}{\underset{\cdot}{\text{Ca}}}$ | C. $\cdot \overset{\cdot}{\underset{\cdot}{\text{Ca}}} \cdot$ |
| B. $\overset{\cdot}{\text{Ca}}$ | D. $\overset{\cdot}{\underset{\cdot}{\text{Ca}}} \cdot$ |

16. How many different structural formulas is it possible to draw for the compound C_5H_{12} ?

- | | |
|------|------|
| A. 1 | C. 3 |
| B. 2 | D. 4 |

17. Which of the following is an organic compound?

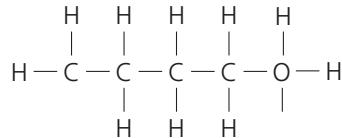
- | | |
|------------------|-----------------------------|
| A. CO | C. CaCl_2 |
| B. NH_3 | D. CH_3COOH |

18. Which is the correct formula for sulfuric acid?

- | | |
|--------------------------|----------------------------|
| A. H_2S | C. H_2SO_3 |
| B. H_2SO | D. H_2SO_4 |

Part E: Short Answer

19. Identify the error or errors in the following structural formula for $\text{C}_4\text{H}_{10}\text{O}$. Draw a correct structural formula next to the one that is there.



20. Draw the Lewis diagram for a molecule of SiCl_4 . Use “x” to represent electrons for the second element.