

Guided Reading Chapter 13 Section 1

1. How do chemical bonds occur?
2. A _____ bond occurs when two atoms share electrons to form compounds called molecules.
3. Using the example of reading a chemical formula (for water), what is the ratio of Nitrogen to Hydrogen in the chemical formula, NH_4 ?
4. When an atom loses or gains an electron, it is called an _____.
5. An _____ _____ is formed when electrons are transferred between atoms.
6. What is chemical reactivity?
7. Why are the noble gases sometimes called the “inert” gases?
8. How many electrons does chlorine have in its highest energy level?
9. What is the highest energy level electrons of an atom called?
10. Valence _____ are important because they are the reason elements bond with each other.
 - a) protons
 - b) electrons
 - c) neutrons
11. How many electrons does Oxygen need to fill its outermost energy level?
 - a) 4
 - b) 8
 - c) 2
12. When an atom receives an electron(s), it becomes more
 - a) negative
 - b) positive
 - c) neutral

13. When ionic bonds form compounds, each atom has a stable octet and is electrically _____.

- a) positive b) negative c) neutral

Guided Reading Chapter 13 Section 2

14. All compounds have an electrical charge of _____.

- a) one b) two c) zero d) ten

15. An oxidation number is the quantity that indicates the charge on an atom when it has gained, lost or _____ electrons.

16. Would Beryllium tend to lose two electrons or gain six when forming bonds?

17. What is the most common oxidation number for group three on the Periodic table?

18. Elements near the noble gases tend to form _____ bonds.

- a) ionic b) covalent c) metallic

19. The farther apart elements are on the Periodic Table the more likely they are to form _____ bonds.

- a) ionic b) covalent c) metallic

20. Nonmetals tend to form _____ bonds.

- a) Ionic b) covalent c) metallic

21. How do you write the name of a binary compound if given the chemical formula?

22. How many atoms of each element is in CaCO_3 ?

23. What type of ion is one that contains more than one atom?
24. What is the oxidation number for peroxide?
25. How do you name a polyatomic ion if given its chemical formula?

Guided Reading Chapter 13 Section 3

26. How is it that substances can have the same chemical formulas but make different types of matter?
27. An element that is organic, unique and has a branch of chemistry which specializes in it, is called
- a) oxygen b) silicon c) carbon
28. Carbon molecules are found in three shapes, straight chains, rings, and
- a) triangles b) branched chains c) broken chains
29. A polymer is a molecule that is composed of long chains of smaller molecules. One common polymer is _____.
30. Name the four groups in which scientists classify organic molecules.
31. Carbohydrates are composed of carbon, hydrogen, and _____, and make up sugars and starches.
32. Lipids are oils, fats, and waxes that are made from carbon, _____, and oxygen.
- a) silicon b) hydrogen c) sulfur d) nitrogen
33. What is the difference between a saturated and an unsaturated fat?

34. Proteins are large molecules made of carbon, oxygen, hydrogen, _____ and sometimes sulfur.

- a) nitrogen b) silicon c) phosphorous

35. Nucleic acids are long, repeating _____ called nucleotides.

36. Nucleic acids are made from _____, oxygen, hydrogen, nitrogen, and phosphorus.

- a) silicon b) sulfur c) carbon

37. A special nucleic acid called _____ contains all the information cells need to make their proteins and the genetic code for organisms.