Chemistry SAT Practice Test 24

SET-1

1. When the electronegativity difference between two atoms is 2, what type of bond can be predicted?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

2. If two atoms are bonded in such a way that both members of the pair equally share one electron with the other, what is the bond called?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

3. Which of the five choices is considered the weakest bond in the group?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

4. Which of the above bonds explains water's abnormally high boiling point?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

5. If the sharing of an electron pair is unequal and the atoms have an electronegativity difference of 1.4 to 1.6, what is this type of sharing called?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

6. If an electron is lost by one atom and completely captured by another, what is this type of bond called?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

7. If one or more valence electrons become detached from the atoms and migrate in a "sea" of free electrons among the positive metal ions, what is this type of bonding called?

A. ionic

B. covalent

C. polar covalent

D. metallic

E. hydrogen bonding

8. Maximum repulsion between two electron pairs in a molecular compound will result in a linear structure

BECAUSE

the VSEPR model says that like charges will orient themselves so as to diminish the repulsion between them.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

9. Sodium chloride is an example of ionic bonding

BECAUSE

sodium and chlorine have the same electronegativity.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

10. Ammonia has a trigonal pyramidal molecular structure

BECAUSE

ammonia has a tetrahedral electron pair geometry with three atoms bonded to the central atom.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

SET-2

1. K_2CrO_4

A. +1

B. +2

C. +4

D. +5

E. +6

2. $Na_2S_2O_3$

A. +1

B. +2

C. +4

D. +5

E. +6

3. PO_4^{3-}

A. +1

B. +2

C. +4

D. +5

E. +6

4. $\underline{Ca}CO_3$

A. +1

B. +2

C. +4

D. +5

E. +6

5. $Mg(\underline{H}CO_3)_2$

A. +1

B. +2

C. +4

D. +5

E. +6

6. In the formula of a compound, the algebraic sum of the oxidation numbers must be 0

BECAUSE

oxygen's oxidation number in most compounds is ?2.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

7. Fluorine is assigned an oxidation number of ?1 in all compounds

BECAUSE

fluorine is the most electronegative element.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

8. Balanced equations have the same number of reactant atoms as the product atoms

BECAUSE

the conservation of matter must apply in all regular chemical equations.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

SET-3

1. The most abundant element in Earth's crust is

A. sodium

B. oxygen

C. silicon

D. aluminum

E.

2. A compound that can be decomposed to produce oxygen gas in the lab is

A. MnO_2

B. NaOH

C. CO_2

D. $KClO_3$

E.

3. In the usual laboratory preparation equation for the reaction in question 2, what is the coefficient of O_2?

A. 1

B. 2

C. 3

D. 4

E.

4. In the graphic representation of the energy contents of the reactants and the resulting products in an exothermic reaction, the energy content would be

A. higher for the reactants

B. higher for the products

C. the same for both

D. impossible to determine

E.

5. The process of separating components of a mixture by making use of the difference in their boiling points is called

A. destructive distillation

B. displacement

C. fractional distillation

D. filtration

E.

6. When oxygen combines with an element to form a compound, the resulting compound is called

A. a salt

B. an oxide

C. oxidation

D. an oxalate

E.

7. According to the activity chart of metals, which metal would react most vigorously in a dilute acid solution?

A. zinc

B. iron

C. aluminum

D. magnesium

E.

8. Graham's Law refers to

A. boiling points of gases

B. gaseous diffusion

C. gas compression problems

D. volume changes of gases when the temperature changes

E.

9. When 200 milliliters of a gas at constant pressure is heated, its volume

A. increases

B. decreases

C. remains unchanged

D.

E.

10. When 200 milliliters of a gas at constant pressure is heated from 0°C to 100°C, the volume must be multiplied by

A. 0/100

B. 100/0

C. 273/373

D. 373/273