Chemistry
Unit 3 Assessment

Date: _____
Name: _____

Choose the correct answer.

1. Coefficients that balance the following chemical reaction equation are:
   a) The sum of the masses of protons, neutrons and electrons.
   b) The sum of the masses of protons and neutrons.
   c) The sum of the masses of protons.
   d) The sum of the masses of neutrons.

2. Chemical equations balancing that model reactions are based upon:
   a) The principle of conservation of energy.
   b) The principle of conservation of charge.
   c) The principle of conservation of mass.
   d) The principle of conservation of valence.

3. Electrons in the valence layer that may form bonds are the ones that are:
   a) Ionized.
   b) In orbit 2s.
   c) In orbit 1p.
   d) Free pairs.

4. Polar molecules are the ones that:
   a) Present magnetic properties and have a north and south pole.
   b) Have neutral charge but distributed in a non-homogenic way.
   c) Present unbalanced electric charge and form ionic bonds.
   d) Have specific chemical properties about form.

5. All of the following magnitudes are in the nano scale, except for:
   a) An atom radium.
   b) A cell mass.
   c) An electron mass.
   d) A proton mass.

6. In which scale would you set the distance between your house and school?
   a) Nano.
   b) Micro.
   c) Macro.
   d) Astronomic.

7. A proton mass expressed in kg is: 0.000000000000000000000000001672621638 kg. Which of the following is the correct scientific notation?
   a) $1.672621638 \times 10^{-26}$g.
   b) $1.672621638 \times 10^{-31}$g.
   c) $1.672621638 \times 10^{27}$g.
   d) $1.672621638 \times 10^{-27}$g.

8. The mole is the fundamental unit for the _____ magnitude.
   a) molecular mass
   b) atomic mass
   c) atomic number
   d) substance quantity

9. The idea that equal volume of different gas substances, measured under the same conditions of pressure and temperature, contains the same number of particles is known as:
   a) The principle of conservation of mass.
   b) Gay Lussac Law.
   c) Avogadro's number.
   d) Dalton Atomic Model.

10. How many atoms are there in the carbon isotop 12 in 12g of pure substance?
   a) 6.02×10^{23} atoms.
   b) 12 moles of atoms.
   c) 6.02×10^{12} atoms.
   d) 12×10^{23} atoms.

11. All of the following statements about the Avogadro's number and the mole unit are correct, except for:
   a) 1 mole of something is 6.022×10^{23} elemental units of that thing.
   b) In 12 g of atomic hydrogen there is 1 mole of hydrogen atoms.
   c) The mole is the number of atoms in Carbon 12 that there are in 12g of that substance.
   d) The Avogadro's number is used to switch from a macro to a nano scale.

12. The Atom Mass Unit AMU is defined as:
   a) 1/12 the mass of a carbon 12 isotope.
   b) The atomic mass of carbon 12.
   c) The sum of all atomic numbers of carbon isotopes.
   d) The total carbon 12 atoms in 1g.

13. The molecular mass of water is:
   a) 18 g.

b) 18 moles.
c) 18 amu.
d) 18 x 10^{23} g.

14. The mass of I water mole is:
    a) 18 g.
    b) 18 moles.
    c) 18 amu.
    d) 18 x 10^{23}g.

15. The mass of 1 carbon dioxide mole is:
    a) 16 g.
    b) 32 g.
    c) 12 g.
    d) 44 g.

16. The elements C, H, O, N, S and P are known as:
    a) Organic elements.
    b) Primary bioelements.
    c) Oligoelements.
    d) Vital elements.

17. Proteins are formed by simpler structural elements known as:
    a) Aminoacids.
    b) Carbohydrates.
    c) Lipids.
    d) Polisaccherides.

18. Metalic elements such as K, Na, Cl, Fe and Ca present in small quantities in living organisms, whose excess or lack may cause health damage are:
    a) Primary bioelements.
    b) Oligoelements.
    c) Vitamins.
    d) Minerals.

Chemistry

Unit 3 Answer Key

1. a
2. c
3. d
4. b
5. b
6. c
7. d
8. d
9. c
10. a
11. b
12. a
13. c
14. a
15. d
16. b
17. a
18. b