Study guide chemistry final test

Part A

On the line, write the answer that completes each sentence.

1. A solution that contains less than the maximum amount of solute is described as _____.

2. About 70 percent of Earth's surface is covered by _____.

3. Beryllium is in column 2 of the periodic table. This tells you that beryllium is a(n) _____ metal.

4. Two compounds with the same chemical formulas but different structures are _____.

5. The correct formula for iron(II) oxide is _____.

6. You multiply 5.00 by 8.0 and find the answer in significant figures to be _____.

7. The molar mass of CH4 is_____

Part B Circle the letter of the correct answer to each question.

1. Magnesium is a neutral atom. It has 12 protons, so it must have _____.

A 12 electrons   C 11 electrons

B 12 neutrons D 11 neutrons

2. The movement of particles from areas of high concentration to areas of low concentration is ____.

A compression C diffusion

B pressure D velocity

3. The splitting of a large nucleus into smaller ones is ____.

A gamma radiation C fusion

B fission D transuranium

4. The arrangement of colors of light emitted by energized atoms is ____.

A Aufbau principle C frequency

B the electron configuration D the emission spectrum

5. The properly balanced equation is ____.

A $2MgCO_3(s) \rightarrow 2MgO(s) + CO_2(g)$

B $2MgCO_3(s) \rightarrow MgO(s) + 2CO_2(g)$

C $MgCO_3(s) \rightarrow MgO(s) + CO_2(g)$

D $2MgCO_3(s) \rightarrow 3MgO(s) + CO_2(g)$

6. A(n) ____ is a catalyst found in living things.

A reactant C enzyme

B product D noble gas

7. A solution that resists change when acids or bases are added is a(n) _____.

A transition metal C homogenous mixture

B buffer D saturated solution

8. During _____, a solid changes directly into a gas.

A condensation C precipitation

B evaporation D sublimation

9. In a redox reaction, _____ are transferred.

A electrons C neutrons

B protons D atoms

10. A catalyst increases the rate of a chemical reaction by _____.

A causing the reaction to be exothermic

B creating a chemical equilibrium

C increasing the amount of activation energy required

D reducing the amount of activation energy required

Part D

1. Except for carbon oxides, carbides, cyanides, and carbonates,

_____ are compounds that contain carbon.

2. When CO and 2H2 react to produce CH3OH, hydrogen is the excess reactant. If 1.32 g of CO is available, how many grams of CH3OH are produced? _____

3. A(n) _____ completely dissociates and has a high pH value.

Part D Write the answer to each question on the line.

4. Explain the difference between a neutral atom and a negative ion.

5. What is the difference between a chemical property and a physical property?

6. What is a limiting reactant?

7. Define a chemical equilibrium.

8. The general equation for a double-replacement reaction is AB+XY→

9. Calculate the amount of heat needed to increase the temperature of 95.3 g of copper from 25.0°C to 48.0°C. The value of Cp for copper is 0.387 J/g•°C