Chemistry Quiz 2-160

1) What is the difference between a chemical reaction and a physical reaction?

2)a) Is the melting of wax a physical or a chemical reaction?

b) Is this reaction exothermic or endothermic?

3) The following chemical reaction occurs:

methane + oxygen -> carbon dioxide + water + heat energy

a) The reactants are _____ and _____ .

b) The products are _____ and _____ .

c) How do we know that this is a chemical reaction?

d) Is this reaction exothermic or endothermic?

4) Why do we balance chemical equations?

5) We can write four molecules of SO_3 as $4SO_3$. The number atoms of sulfur is _____ . The number of atoms of oxygen is _____ .

6) Balance the following equations.

a) _____ Na + _____ Cl_2 -> _____ NaCl

b) _____ K + _____ O_2 -> _____ K_2O

c) _____ Br_2 + _____ KI -> _____ KBr + _____ I_2

d) _____ Al + _____ Br_2 -> _____ $AlBr_3$

7) What is the law of conservation of mass?

8) A balanced chemical reaction is:

$2K + Cl_2 \rightarrow 2KCl$

a) Write the word equation for the above reaction.

b) When 78 grams of potassium is reacted, 149 grams of potassium chloride is formed. What is the mass of chlorine consumed?

9) What is the reaction rate?

10) Give four ways to increase the reaction rate.

11) Explain why increasing the temperature increases the reaction rate.

12) The following reactions occur.

$N_2 + 3H_2 \rightarrow 2NH_3$ slow

$N_2 + Fe + 3H_2 \rightarrow 2NH_3 + Fe$ fast

What is the catalyst in the above reaction?

13) Where in the home will you find the following elements?

a) Cu _____ b) W _____ c) Al _____ .

14)a) Which compound is known as the universal solvent? _____ .

b) Give the common name of the compound NaCl. _____ .

c) What is propane used for? _____ .

Answers: 1) In a chemical reaction, new compounds are formed. In a physical reaction, there is no change in the composition of the reactants., 2)a) physical, b) endothermic, 3)a) methane, oxygen, b) carbon dioxide, water, c) New compounds are formed., d) exothermic, 4) The number of atoms of each type should be the same on both sides of the equation as atoms cannot be created or destroyed., 5) 4, 12, 6)a) 2,1,2, b) 4,1,2, c) 1,2,2,1, d) 2,3,2, 7) In any chemical reaction, the mass of the products equals the mass of the reactants., 8)a) potassium + chlorine -> potassium chloride, b) 71 grams, 9) It is the speed of the reaction, 10) increase temperature, increase surface area, increase concentration, add a catalyst, 11) Increasing the temperature increases the speed of the reactant molecules so the

product will be formed more quickly., 12) Fe, 13)a) water pipes, b) light bulb filaments, c) pop cans, 14)a) water, b) table salt, c) heating.