Chemistry 101

First Exam 020

Done by:

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1.Which of the following is the greatest mass?

a. $2.5*10^{-2}$ mg

b. $2.5*10^{10}$ ng

c. $2.5*10^{-3}$ cg

d. 25 kg

e. $2.5*10^{15}$ pg

2. When the following equation is balanced and written with the smallest whole number coefficients, what is the coefficient of O_2?

$Fe(s) + O_2(g) \rightarrow Fe_2O_3(s)$

a. 3

b. 13

c. 15

d. 1

e. 5

3. Which of the following statements is correct regarding some selected SI-prefixes?

a. A milli is 100-fold less than a deci

b. A deci is 100-fold greater than a centi

c. A nano is a 1000-fold less than a pico

e. A centi is 1000-fold greater than a deci

4. How many sodium ions are contained in 99.6 mg of Na2SO3? The molar mass of Na2SO3 is 126.05 g/mol.

a. $2.10*10^{21}$ sodium ions

b. $1.05*10^{21}$ sodium ions

c. $1.52*10^{27}$ sodium ions

d. $9.52*10^{20}$ sodium ions

e. $4.76*10^{20}$ sodium ions

5. A 2.5 g of aluminium reacts with 2.5 g of oxygen to form only aluminium oxide (Al_2O_3), what mass of Al2O3 is formed?

$4Al(s) + 3O_2(g) \rightarrow 2Al_2O_3(s)$

a. 5.3 g

b. 7.4 g

c. 5.0 g

d. 9.4 g

e. 4.7 g

6. What answer should be reported, with the correct number of significant figures, for the following calculation?

(249.362+41)/63.498

a. 4.6

b. 4.5728

c. 4.57277

e. 4.57

7. How many protons, neutrons, and electrons, respectively, are in the following ion? $^{59}Ni^{2+}$

a. 28, 31, and 26

b. 28, 31, ang 30

c. 31, 28, and 28

d. 28, 87, and 28

e. 28, 31, and 28

8.Combustion analysis of 1.200 g of an unknown compound containing carbon, hydrogen, and oxygen produced 2.086 g of CO2 and 1.134 g of H2O. What is the empirical formula of the compound?

a. $C_3H_8O_2$

b. $C_2H_{10}O_3$

c. C_2H_5O

d. $C_2H_5O_2$

e. C_3H_8O

9. Which of the following is considered as a physical change?

a. Oxidation of metals under air

b. Burning of sulfur to produce sulfur dioxide

c. combustion of gasoline

d. Breaking of methane to form carbon and hydrogen

e. Ethanol evaporates

10. A 0.25 mol KO2 is reacted with 0.15 mol H_2O according to the chemical equation given, which one of the following statements is false?

$4KO_2(s) + 2H_2O(l) \rightarrow 4KOH(s) + 3O_2(g)$

a.H_2O is the excess reactant

b. The theoretical yield of oxygen is 10.1 g

c. 0.45 g of H_2O are left over

d. KO_2 is the limiting reactant

e. Mass is conserved in this reaction

11. How many moles of P_2O_5 contain $3.68*10^{25}$ phosphorus atom? The molar mass of P_2O_5 is 283.89 g/mol.

a. 54.5 moles P_2O_5

b. 16.4 moles P_2O_5

c. 49.1 moles P_2O_5

d. 61.1 moles P_2O_5

e. 30.6 moles P_2O_5

12. Which of the following is the shortest length?

a. 580 mm

b. 3000 micrometer

c. 0.450 dm

d. 0.58 m

e. 450 cm

13. A 5.00 g of silver nitrate ($AgNO_3$) reacts with 27.73 g of aluminium chloride (AgCl), what mass of AgCl is formed?

$3AgNO_3(aq) + AlCl_3(aq) \rightarrow Al(NO_3)_3(aq) + 3AgCl(s)$

a. 24.9 g

b. 2.56 g

c. 4.22 g

d. 17.6 g

e. 11.9 g

14. The correct name of $Fe(NO_2)_3.10(H_2O)$ is:

a. Iron(III) nitrate hydrate

b. Iron(III) nitrite decahydrate

c. Iron(III) nitrate decahydrate

d. Iron(III) nitride decahydride

e. Iron(II) nitrite decahydrate

15. Which of the following of the is considered as a chemical change?

a. Salt dissolving in water

b. Freezing of water

c. Oxidation of metal under air

d. Melting of ice

e. Sublimation of iodine

ANSWERS

1	D
2	A
3	A
4	D
5	E
6	E
7	A
8	A
9	E
10	B
11	E
12	B
13	C
14	B
15	C

GOOD LUCK 🖤