

Chemistry 11 Review Worksheet - Answers

September 10, 2015 9:29 AM

Chemistry 12

Chemistry 11 Group Review Work - Answer sheet:

1. Periodic Table

a. Formula Name:

- i. potassium chloride
- ii. magnesium nitrate
- iii. lead (IV) sulphate
- iv. carbon tetrachloride
- v. diphosphorus pentoxide

b. Formula:

- i. NaClO_3
- ii. BaSO_3
- iii. $\text{Fe}(\text{NO}_3)_3$
- iv. N_2O_3
- v. SiO_2

c. Groups of Families

i. Group 2 Metal

1. alkali-earth metals
2. CaCl_2 etc

ii. Group VII non-metals

1. halogens
2. AlF_3

iii. Non-Reactive Element Group

1. Noble Gases, 0
2. 2 - He, rest more B

iv. Electron Configuration

1. nitrogen
2. zirconium

2

2. Chemical Formula Equations

a. Type of Reaction:

- i. combustion
- ii. decomposition
- iii. Double replacement
- iv. synthesis
- v. single replacement

5

b. Balancing Reaction Equations:

- i. $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
- ii. $2\text{KCl} \rightarrow 2\text{K} + \text{Cl}_2$
- iii. $\text{FeCl}_3 + 3\text{AgNO}_3 \rightarrow \text{Fe}(\text{NO}_3)_3 + 3\text{AgCl}$
- iv. $1\text{Si} + 1\text{O}_2 \rightarrow 1\text{SiO}_2$
- v. $2\text{Al} + 3\text{CuCl}_2 \rightarrow 2\text{AlCl}_3 + 3\text{Cu}$

5

c. Translating and Balancing Reaction Equations

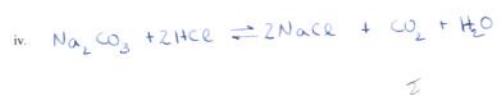
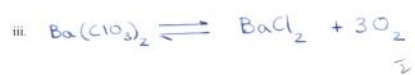


2



2

2



3. Mole Calculations

a. 6.02×10^{23}

b. Molar Mass

i. 58.5 g/mole

ii. 396.6 g/mole

iii. 219.8 g/mole

c. $0.17 \text{ g} \times \frac{1 \text{ mole}}{58.5 \text{ g}} = 2.91 \times 10^{-3} \text{ moles}$

d. $\text{Al}(\text{NO}_3)_3 = 212.98 \text{ g/moles}$

$2.3 \times 10^{-2} \text{ moles} \times 212.98 \text{ g/mole} = 4.90 \text{ g}$

$$e. 2.48g \times \frac{1 \text{ mole}}{18.0g} \times \frac{22.4 \text{ L}}{\text{mole}} = 3.27 \text{ L}$$



$$125g \times \frac{1 \text{ mole}}{26g} \times \frac{4}{2} = 9.62 \text{ moles } CO_2$$

4. Concentration Calculations

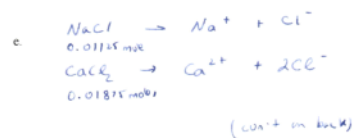
$$a. 18 \text{ M} \times 4.0 = 72 \text{ moles HCl}$$

$$b. 0.100 \text{ M} \times 0.250 \text{ L} = 0.025 \text{ moles}$$

$$0.025 \text{ moles} \times \frac{74.55g}{\text{mole}} = 1.86 \text{ g KCl}$$

$$c. 2.5g \times \frac{1 \text{ mole}}{98.06g} \times \frac{1}{0.1500 \text{ L}} = 0.17 \text{ M } H_2SO_4$$

$$d. \frac{15}{100} \times 0.450 \text{ M} = 0.0675 \text{ M } Pb(NO_3)_2$$



$$e) [Na^+] = \frac{0.01125}{0.100} = 0.113 \text{ M}$$

$$[Ca^{2+}] = \frac{0.01875}{0.100} = 0.188 \text{ M}$$

$$[Cl^-] = \frac{0.01125 + (2 \times 0.01875)}{0.100} = 0.488 \text{ M}$$