

Name: _____

Nomenclature Quiz #1 - SCH 4C

C^{4-}	carbide	CO_3^{2-}	carbonate
N^{3-}	nitride	NO_3^{1-}	nitrate
O^{2-}	oxide	PO_4^{3-}	phosphate
F^{1-}	fluoride	SO_4^{2-}	sulphate
P^{3-}	phosphide	ClO_3^{1-}	chlorate
S^{2-}	sulphide	OH^{1-}	hydroxide
Cl^{1-}	chloride	CN^{1-}	cyanide
As^{3-}	arsenide		
Se^{2-}	selenide	NH_4^{1+}	ammonium
Br^{1-}	bromide		
Sb^{3-}	antimonide		
Te^{2-}	telluride		
I^{1-}	iodide		

1. Simple monovalent cation (only one oxidation state),
elemental anion (ends in ide)

a) NaCl sodium chloride

b) K_2O _____

c) $MgCl_2$ _____

d) Al_2S_3 _____

e) Cs_3N _____

f) lithium arsenide _____

g) sodium bromide _____

h) calcium phosphide _____

i) magnesium carbide _____

j) aluminum oxide _____

2. Polyvalent Cation (more than one possible oxidation state), elemental anion.

1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X

- a) iron(II) chloride _____
- b) iron(II) sulphide _____
- c) lead(IV) bromide _____
- d) lead(IV) oxide _____
- e) tin(IV) nitride _____
- f) NiCl_2 _____
- g) Au_2O_3 _____
- h) Hg_2O _____
- i) CuCl_2 _____
- j) PI_3 _____

3. Simple monovalent cation with polyatomic anions.

- a) sodium carbonate _____
- b) ammonium nitrate _____
- c) silver phosphate _____
- d) zinc hydroxide _____
- e) aluminum sulphate _____
- f) K_2CO_3 _____
- g) $\text{Mg}(\text{ClO}_3)_2$ _____
- h) $\text{Sc}_2(\text{CO}_3)_3$ _____
- i) $\text{Ca}(\text{OH})_2$ _____
- j) Na_3PO_4 _____

4. Polyvalent cation with polyatomic ion.

a) platinum(IV) chlorate _____

b) gold(I) sulphate _____

c) gold(III) carbonate _____

d) lead(IV) hydroxide _____

e) iridium(VI) phosphate _____

f) Au_3PO_4 _____

g) $\text{Sb}_2(\text{SO}_4)_5$ _____

h) $\text{As}(\text{OH})_3$ _____

i) $\text{Au}(\text{CN})_3$ _____

j) PbSO_4 _____

5. Mixed Problems!!!!

a) CS_2 _____

b) Na_2SO_4 _____

c) SnCl_4 _____

d) InCl_3 _____

e) $(\text{NH}_4)_2\text{SO}_4$ _____

f) $\text{Cu}(\text{NO}_3)_2$ _____

g) OsO_3 _____

h) $\text{Ni}(\text{ClO}_3)_3$ _____

i) $\text{Zr}(\text{SO}_4)_2$ _____

j) CrO_3 _____

/50 = %

Name: _____

Nomenclature Quiz #2 - SCH 4C

C^{4-}	carbide	CO_3^{2-}	carbonate
N^{3-}	nitride	NO_3^{1-}	nitrate
O^{2-}	oxide	PO_4^{3-}	phosphate
F^{1-}	fluoride	SO_4^{2-}	sulphate
P^{3-}	phosphide	ClO_3^{1-}	chlorate
S^{2-}	sulphide	OH^{1-}	hydroxide
Cl^{1-}	chloride	CN^{1-}	cyanide
As^{3-}	arsenide		
Se^{2-}	selenide	NH_4^{1+}	ammonium
Br^{1-}	bromide		
Sb^{3-}	antimonide		
Te^{2-}	telluride		
I^{1-}	iodide		

1. Simple monovalent cation (only one oxidation state),
elemental anion (ends in ide)

a) NaCl sodium chloride

b) Al_2O_3 _____

c) Na_2O _____

/5

d) K_3N _____

e) Li_2S _____

f) calcium sulphide _____

g) potassium oxide _____

h) magnesium chloride _____

/5

i) zirconium sulphide _____

j) zinc bromide _____

/10

2. Polyvalent Cation (more than one possible oxidation state), elemental anion.

1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X

a) copper(II) nitride _____

b) copper(I) nitride _____

c) tin(IV) oxide _____

/5

d) tin(II) oxide _____

e) lead(IV) nitride _____

f) AuCl_3 _____

g) PCl_5 _____

h) CuS _____

/5

i) CuI _____

j) As_2O_3 _____

3. Simple monovalent cation with polyatomic anions.

a) lithium sulphate _____

b) magnesium hydroxide _____

/5

c) zinc carbonate _____

d) sodium phosphate _____

e) aluminum nitrate _____

f) Na_2SO_4 _____

g) $\text{Ca}(\text{NO}_3)_2$ _____

h) K_2CO_3 _____

/5

i) $(\text{NH}_4)_3\text{PO}_4$ _____

j) KOH _____

/20

4. Polyvalent cation with polyatomic ion.

a) tin(II) carbonate _____

b) gold(III) sulphate _____

c) lead(II) phosphate _____

d) copper(II) sulphate _____

e) mercury(I) oxide _____

f) $\text{Au}(\text{OH})_3$ _____

g) $\text{Cu}(\text{ClO}_3)_2$ _____

h) $\text{Pb}_3(\text{PO}_4)_4$ _____

i) $\text{Sn}(\text{CO}_3)_2$ _____

j) $\text{Co}(\text{NO}_3)_2$ _____

/5

/5

5. Mixed Problems!!!!

a) CO_2 _____

b) MgO _____

c) $(\text{NH}_4)_3\text{PO}_4$ _____

d) Ag_2CO_3 _____

e) V_2O_5 _____

f) PbSO_4 _____

g) NaCl _____

h) $\text{Mg}(\text{NO}_3)_2$ _____

i) IrCl_3 _____

j) $\text{Pt}_3(\text{PO}_4)_4$ _____

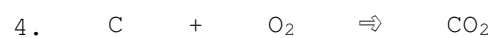
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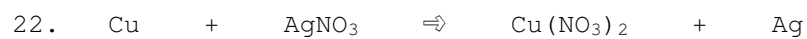
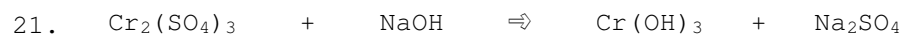
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Name: _____

Balancing Chemical Equations

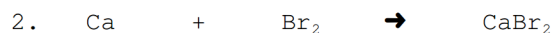
Balance each of the following chemical equations:



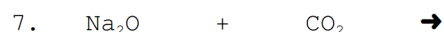
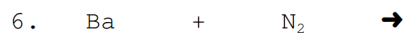


SCH 4C Balancing Quiz #1

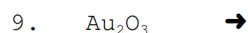
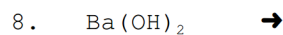
Balance each equation by adding stoichiometric coefficients before each compound or element. Use pencil!



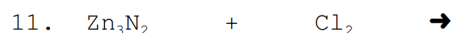
Complete each synthesis reaction:



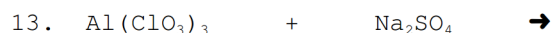
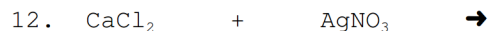
Complete each decomposition reaction:



Complete each single replacement reaction:



Complete each double replacement reaction:



Write balanced chemical equations for each word description:

14. the combustion of the hydrocarbon propane with the chemical formula of C_3H_8

15. the double displacement reaction between gold(III) chloride with hydrogen carbonate

16. the decomposition of scandium sulphide

17. the single replacement reaction between antimony(V) chloride and oxygen gas

18. the synthesis of calcium carbonate from calcium oxide plus a common gas

SCH 4C Balancing Quiz #2

Balance each equation by adding stoichiometric coefficients before each compound or element. Use pencil!

1. $\text{Hg}_2\text{O} \rightarrow \text{Hg} + \text{O}_2$
2. $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$
3. $\text{Se}_2\text{O}_5 + \text{Cl}_2 \rightarrow \text{SeCl}_5 + \text{O}_2$
4. $\text{FeCl}_3 + \text{Na}_2\text{SO}_4 \rightarrow \text{Fe}_2(\text{SO}_4)_3 + \text{NaCl}$
5. $\text{C}_8\text{H}_{18} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$

Complete each synthesis reaction:

6. $\text{Al} + \text{O}_2 \rightarrow$
7. $\text{Ga}_2\text{O}_3 + \text{H}_2\text{O} \rightarrow$

Complete each decomposition reaction:

8. $\text{K}_2\text{CO}_3 \rightarrow$
9. $\text{Ag}_3\text{N} \rightarrow$

Complete each single replacement reaction:

10. $\text{Sc} + \text{Fe}_2\text{S}_3 \rightarrow$
11. $\text{Al}_2\text{O}_3 + \text{Br}_2 \rightarrow$

Complete each double replacement reaction:

12. $\text{MgO} + \text{Ba}(\text{ClO}_3)_2 \rightarrow$
13. $(\text{NH}_4)_2\text{CO}_3 + \text{AlCl}_3 \rightarrow$

Write balanced chemical equations for each word description:

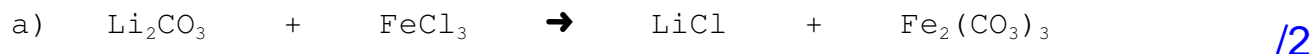
14. the combustion of the hydrocarbon pentane with the chemical formula of C_5H_{12}
15. the double displacement reaction between copper(II) nitrate with sodium phosphate
16. the decomposition of calcium nitride
17. the single replacement reaction between phosphorus(V) oxide and chlorine gas
18. the synthesis of barium hydroxide from barium oxide plus a common substance

/95 = %

Name: _____

SCH 4C
Stoichiometry Unit Test

1. Balance the following equations



2. Perform each unit conversion. Be sure to use complete and extended units:

a) convert 72.9 g of NH_3 to number of molecules of NH_3

/5

b) convert 8.79×10^{24} H atoms to the equivalent mass of CH_4

/7

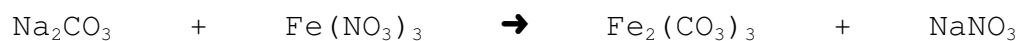
3. What mass of strontium nitrate is required to form 890.0 g of strontium phosphate?



/8

/22

4. What amount of sodium carbonate is require to form 450.0 g of iron(III) carbonate



/6

5. What is the maximum possible mass of chromium(III) hydroxide that can form from 40.0 g of chromium(III) sulphate and 22.0 g of sodium hydroxide



/16

/22

6. Determine the concentration of each of the following solutions:

a) 550 mL of a solution that contains 0.025 mol of HCl

/5

b) 750 mL of a solution that contains 0.025 g of HCl

/7

c) 4.0 L of a solution of sulphuric acid made through the dilution of 25 mL of 12.0 M H_2SO_4

/4

/16

7. Determine the mass of Na_2CO_3 required to make 4.0 L of 0.1 M sodium carbonate solution.

/6

8. Determine the concentration of solution that would result if 45.0 g of NaHCO_3 is dissolved in 1.0 L of water. What will this concentration become if 4.0 L of water is added?

/11

/17

9. What is the maximum possible amount of lead(II) iodide precipitate that could form from the reaction of 500 mL of 0.25 M lead(II) nitrate mixed with 400 mL of 0.30 M potassium iodide?



/18

BONUS: Determine the concentration of potassium ion in p.p.m. for 250 mL of solution that contains a mass of 0.0015 g of K_2CO_3

/5

/18

/95 = %

Name: _____

SCH 4C
Stoichiometry Unit Test

1. Balance the following equations



/2

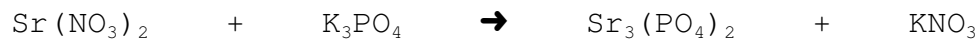
2. Perform each unit conversion. Be sure to use complete and extended units:

a) convert 80.4 g of CO_2 to number of molecules of CO_2

b) convert 3.65×10^{23} Cl atoms to the equivalent mass of HSiCl_3

/5

3. What mass of potassium phosphate is required to form 54.0 g of strontium phosphate?



/7

/8

/22

4. What amount of iron (III) nitrate is require to from 250.0 g of iron(III) carbonate



/6

5. What is the maximum possible mass of chromium(III) hydroxide that can form from 42.0 g of chromium(VI) sulphate and 25.0 g of sodium hydroxide



/16

/22

6. Determine the concentration of each of the following solutions:

a) 750 mL of a solution that contains 0.015 mol of HCl

/5

b) 650 mL of a solution that contains 0.045 g of HCl

/7

c) 5.0 L of a solution of sulphuric acid made through the dilution of 55 mL of 12.0 M H_2SO_4

/4

/16

7. Determine the mass of Na_2CO_3 required to make 2.0 L of 0.25 M sodium carbonate solution.

/6

8. Determine the concentration of solution that would result if 85.0 g of NaHCO_3 is dissolved in 1.5 L of water. What will this concentration become if 8.0 L of water is added?

/11

/17

9. What is the maximum possible mass of lead(II) iodide precipitate that could form from the reaction of 250 mL of 0.25 M lead(II) nitrate mixed with 300 mL of 0.35 M potassium iodide?



/18

BONUS: Determine the concentration of potassium ion in p.p.m. for 250 mL of solution that contains a mass of 0.0015 g of K_2CO_3

/5

/18