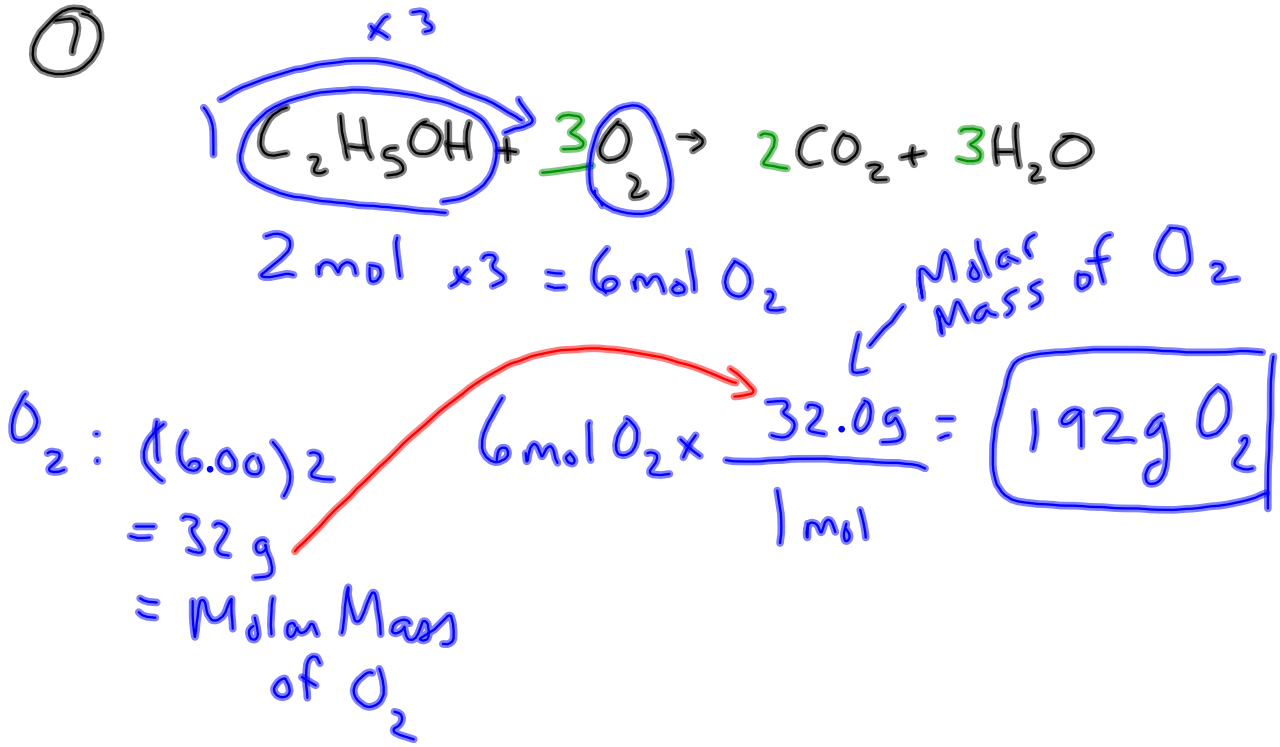
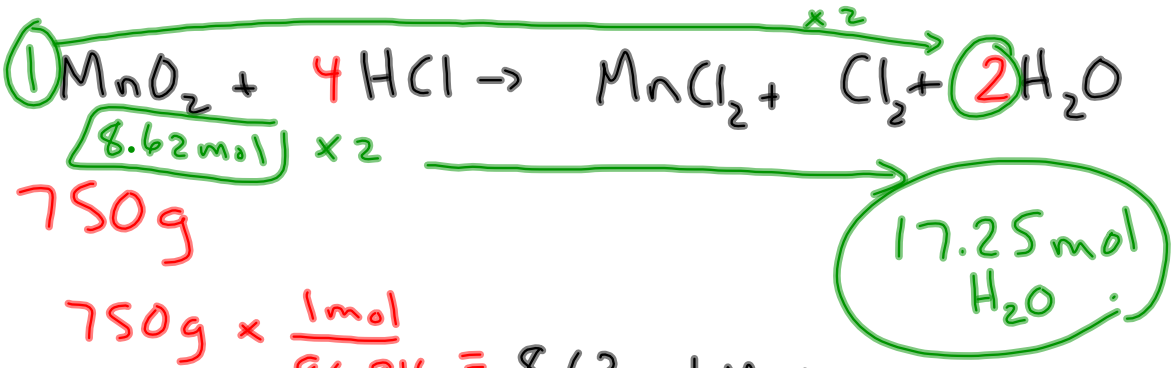
(7)


x 3
1 C2H5OH + 3 O2 → 2 CO2 + 3 H2O
2 mol x 3 = 6 mol O2
Molar Mass of O2
6 mol O2 x 32.0 g / 1 mol = 192 g O2
O2 : (16.00)2
= 32 g
= Molar Mass of O2

⑥



750 g

$750\,g \times \frac{1\,mol}{86.94\,g} = 8.62\,mol\ MnO_2$

Molar Mass MnO_2:

1 Mn : 54.94

2 O : 2(16.00)

86.94 g

(9) 4.5 mol × 2 = 9 mol (1)

$1\,CaCO_3 + 2\,NaCl \rightarrow Na_2CO_3 + CaCl_2$

4.5 mol ? g

(1) Balancing

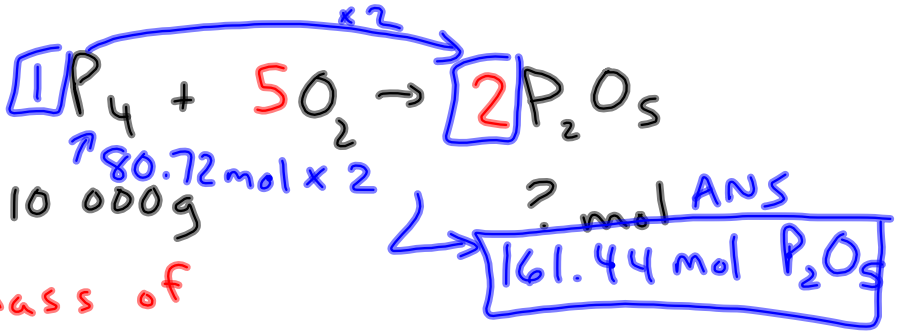
9 mol NaCl × $\frac{58.44\,g}{1\,mol}$ (1)

Molar Mass NaCl

22.99
35.45
(1) 58.44

ANS = 525.96 g NaCl

(10)



Molar mass of P_4:

$4(30.97\,g) = 123.88\,g$

$10000\,g\,P_4 \times \frac{1\,mol}{123.88\,g} = 80.72\,mol\,P_4$

11

$$1N_2 + 3H_2 \rightarrow 2NH_3$$

÷ 3

? g 9 mol

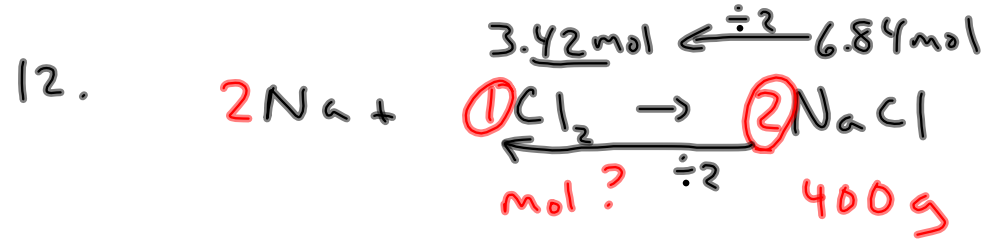
3 mol N_2 ← ÷ 3

Molar Mass of N_2

$$3\ mol\ N_2 \times \frac{28.02\ g}{1\ mol} = 84.06\ g\ N_2$$

N_2: 2(14.01) = 28.02 g

12.



3.42 mol Cl_2

Molar Mass NaCl
= 58.44g

$$400\text{g NaCl} \times \frac{1\text{ mol}}{58.44\text{g}}$$

= 6.84 mol NaCl

Review Booklet (White) Answers

1-1 b, c, e

1-2 a, b

2-1 b

2-2 a, b, c, d

(3)	2e 8e 7e	Halogens	
	2e 8e Se		
		Noble gas	2
(18)	2e 8e 8e	Noble Gases	3
(14)	2e 8e 4e	Carbon Family	3
11	2e 8e 1e	Alkali Metal	3
(7)	2e 5e	Nitrogen	2
(20)	2e 8e 8e 2e	Alkaline Earth Metals	4
Li:	2e 1e	Alkali Metals	2
	2e 6e	Oxygen F.	2
	2e 8e 2e	Alkaline Earth Metals	3
	2e 8e 3e	Boron	3
Ar	2e 8e 8e	Noble Gas	3

(4)-1 Si → atomic # (# protons) = 14

Only look at "# protons"

(2) a) A, C, F (all have 14 p^+)

p^+ = # $\bar{e}$ | More $\bar{e}$ than p^+ | More p^+ than $\bar{e}$

(2) b)

(4-2) a) A, E, F (all have 16 p^+)

b) N : A, D

Anions : B, E

Cations : C, F

(5) S^{-1} P^{+1} Q^{+2} $R^{+ \text{ or } -4}$ S^{-3}

$P + S : P_3S$ $P + R : P_4R$

$Q + S : Q_3S_2$ $Q + R : Q_2R$

1 S^{-2} W^{+1} F^{+2} B^{+3} G^{-2} L^{-1}

$B + G : B_2G_3$ $W + L : WL$

$F + G$ FG $B + L : BL_3$

6. A - Solution = Homogeneous mixture

D - Solid Mixture = Heterogeneous mixture

a) Brass ring (alloy) : A

b) Table Salt : E

c) Al : B

d) Blizz. : D

e) Ocean water (Filtered) : A

f) dirt : D

e) vinegar : A

f) White Gold (alloy) : A

g) V8 : C

7.

AsF_5 arsenic pentafluoride

N + N
(G.P.

Ba^{+2} N^{-3} Barium nitride

M + NM
type I

Ba_3N_2

K_2SO_4 = potassium sulphate or sulfate

↑ type I Metal
(no R.N)

TRAD

Cs_2CrO_4 Cesium chromate

↗
type 1

Al^{+3} PO_4^{-3} Aluminum phosphate

$AlPO_4$

CCl_4 Carbon tetrachloride
NM + NM

Na^{+1} $C_2H_3O_2^{-1}$ Sodium acetate
OR ↗
type 1
CH_3COO^{-1}

$= NaC_2H_3O_2$ OR $NaCH_3COO$

$Cr_2^{+3}S_3^{-2}$ Chromium (III) sulfide

↑
type 2 $^{+6}$ $^{-6}$ Metal (Need Roman numeral)

(8)

a) Salt

It doesn't dissociate (break apart) to release H^+ or OH^-

b) Acid

dissociates to release H^+

c) Base

dissociates to release OH^-

d) Salt

Same salt reason

e) Acid

dissociates to release H^+

f) None of above

It's a covalent cmpd (2 nonmetals)

g) Salt

(same salt reason)

h) Base

Dissociates to release OH^-

9.-1 a) D

b) C

c) A

d) E

e) B

9-2 a) A, C, E

b) D

c) E

d) B

10. hi pH -> lo pH

Already corrected

$$\left(Cu(NO_3)_2 \rightarrow CuO + 2NO_2 + \tfrac{5}{2}O_2\right)^{\times 2}$$

$$2Cu(NO_3)_2 \rightarrow 2CuO + 4NO_2 + 1O_2$$

$$C_3H_8 + 5O_2 \longrightarrow 3CO_2 + 4H_2O$$

11

$$\left[2\,Fe + 1.5\,O_2 + 3\,H_2O \rightarrow 2\,Fe(OH)_3\right] \times 2$$

3 3 6

$$4Fe + 3O_2 + 6H_2O \rightarrow 4\,Fe(OH)_3$$

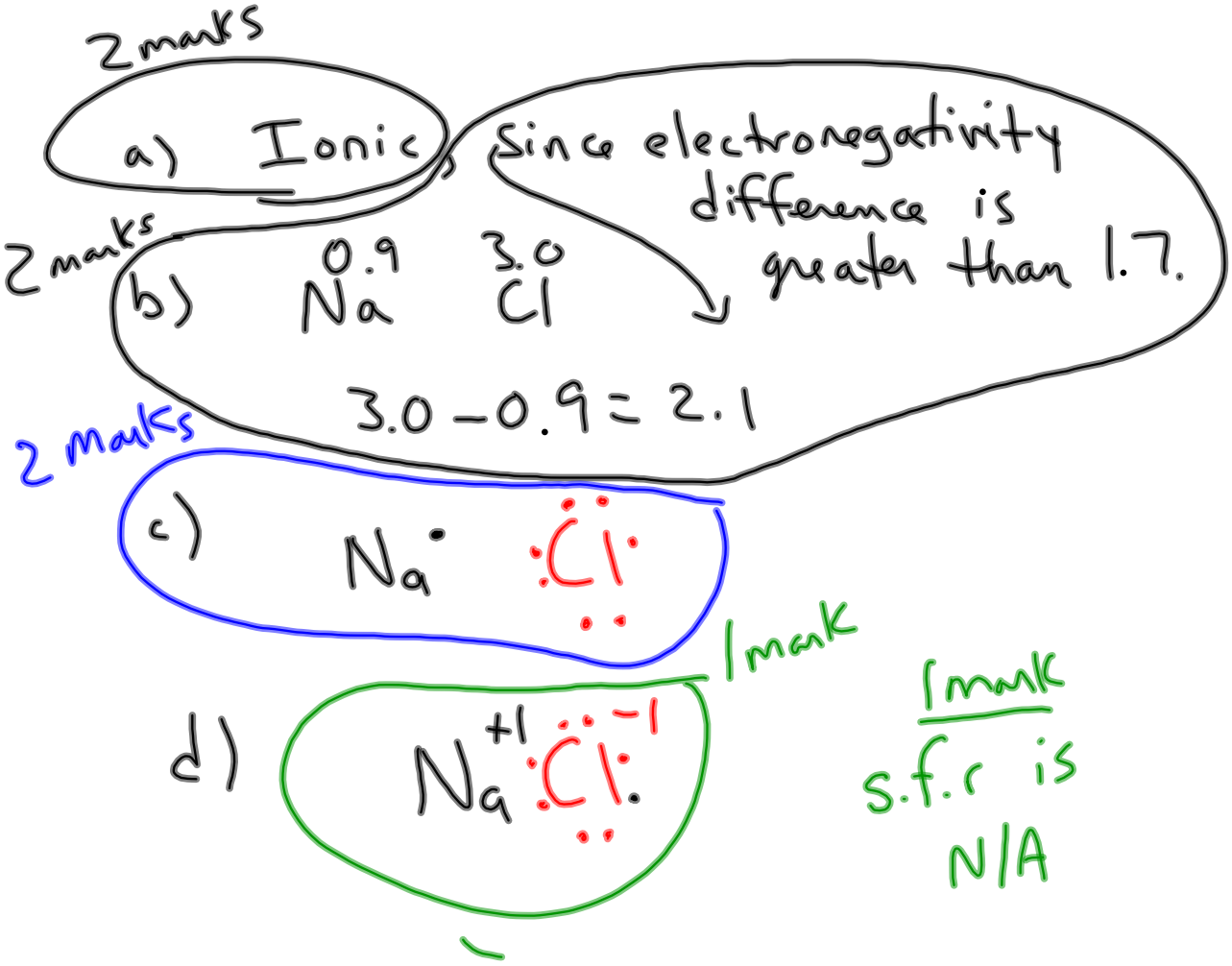
Last 11

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$$

6 12 12 6

18

12. Need electronegativity chart!



12-2 N + F

a) Polar Covalent

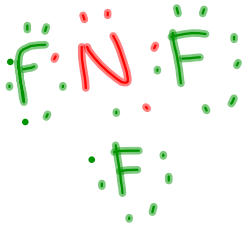
b) $\overset{3.0}{N}$ $\overset{4.0}{F}$

4.0 - 3.0 = 1 e.d.

Since electronegativity difference is between 0.4 - 1.7.

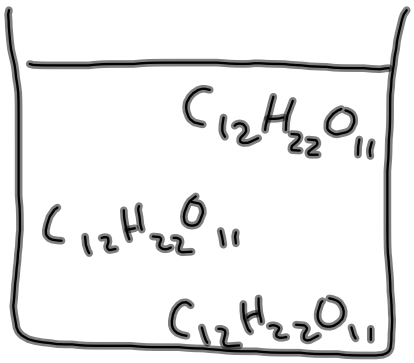
c) 

5 e's

d) 

(13) -1

a)

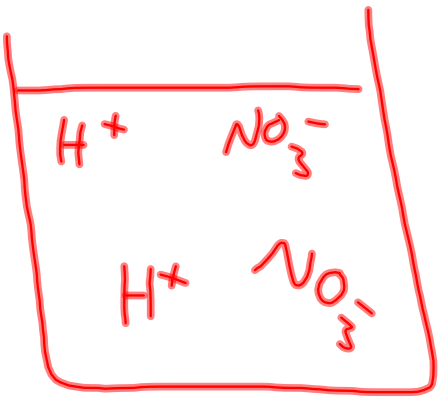


b) Molecular Dissolution

c) Since it doesn't conduct electricity the molecules must have stayed intact.

13-2

HNO_3



b) Ionic dissolution

c) Since it conducts electricity it must have broken apart into ions.

14.

Solution A

9 mol

4 L

$\frac{9\ mol}{4\ L}$

$= 2.25\ \frac{mol}{L}$

Solution B

0.18 mol

79.6 mL

$= 0.0796\ L$

$\div 1000$

$\frac{0.18\ mol}{0.0796\ L}$

$= 2.26\ \frac{mol}{L}$

Solution C

24 g → mol

55 mL → .055 L

Molar mass of $Ba(NO_3)_2$

$= 261.35\ g$

$24\ g \times \frac{1\ mol}{261.35\ g}$

$= 0.09\ mol$

$\frac{0.09\ mol}{0.055\ L}$

$= 1.6\ \frac{mol}{L}$

Solution B is highest

14-2

Solution A

$Al \rightarrow 26.98$

$Cl \rightarrow 3(35.45)$

133.33

$3g \times \frac{1\ mol}{133.33} = 0.022\ mol$

$M = \frac{C}{V} = \frac{0.022\ mol}{0.15L} = 0.15\ mol/L$

Solution B

$M = \frac{C}{V} = \frac{3\ mol}{15L} = 0.2\ mol/L$

Solution C:

$Al \rightarrow 26.98$

$Cl \rightarrow 3(35.45)$

133.33

$15g \times \frac{1\ mol}{133.33} = 0.11\ mol$

$M = \frac{C}{V} = \frac{0.11\ mol}{1.2L} = 0.09$

done by Tamara Moore :)

Answer : Solution B