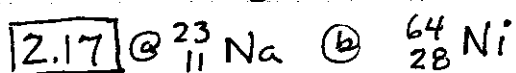


CHEM1 REVIEW - CHANG, Chpt. 2

3, 15, 17, 31, 35, 43, 49, 57, 59, 61, 69, 75, 89 p. 1 of 2

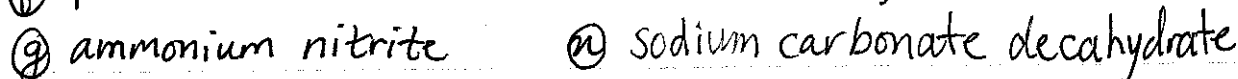
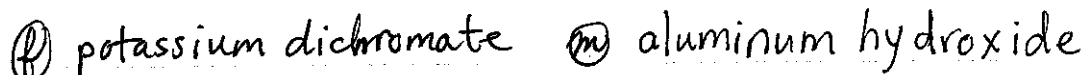
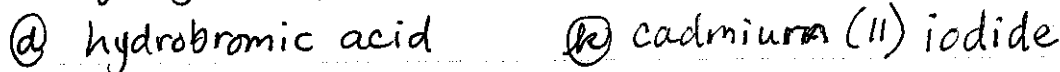
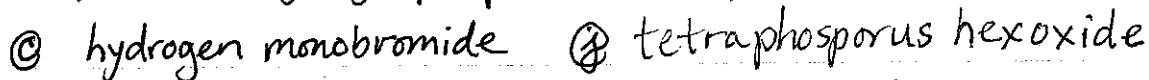
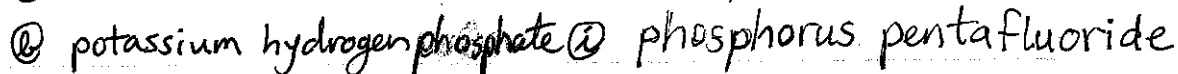
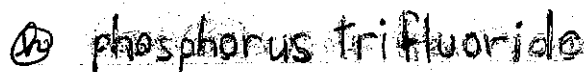
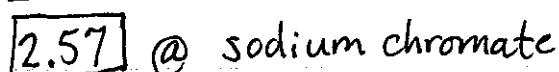
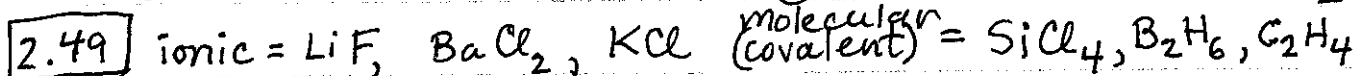
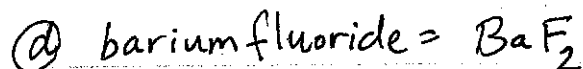
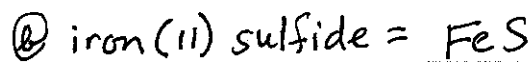
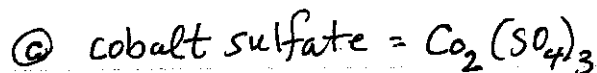
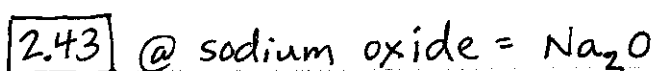
2.7 $1 \text{ cm} \times \frac{10^{12} \text{ pm}}{10^2 \text{ cm}} \times \frac{1 \text{ atom}}{10^2 \text{ pm}} = 10^8 \text{ atoms}$ 100 000 000 atoms or $1 \times 10^8 \text{ atoms}$

2.15	${}^3_2\text{He}$	p^+	n		${}^{48}_{22}\text{Ti}$	p^+	n
		2	1			22	26
	${}^4_2\text{He}$	2	2		${}^{79}_{35}\text{Br}$	35	44
	${}^{24}_{12}\text{Mg}$	12	12		${}^{195}_{78}\text{Pt}$	78	117
	${}^{25}_{12}\text{Mg}$	12	13				



2.31 diatomic = c, polyatomic = a b c, not compounds = a
compounds = b & c element = a

2.35	p^+	e^-		p^+	e^-		p^+	e^-	
Na^+	11	10		Fe^{2+}	26	24	S^{2-}	16	18
Ca^{2+}	20	18		I^-	53	54	O^{2-}	8	10
Al^{3+}	13	10		F^-	9	10	N^{3-}	7	10



2.59 a) RbNO_2

b) K_2S

c) NaHS

d) $\text{Mg}_3(\text{PO}_4)_2$

e) CaHPO_4

f) KH_2PO_4

g) IF_7

h) $(\text{NH}_4)_2\text{SO}_4$

i) AgClO_4

j) BCl_3

2.61 SF_n

$1\text{g S} = 3.55\text{g F}$

SF_n

$1\text{g S} = 2.37\text{g F}$

$$\frac{2.37}{3.55} = \frac{n}{6}$$

$$n = \frac{6 \cdot 2.37}{3.55} = 4$$

$n = 4$

SF_4

2.69 a) molecular formula

b) empirical formula

c) C_3H_8

d) C_2H_2

e) C_2H_6

f) C_6H_6

C_3H_8

CH

CH_3

CH

2.75 a) BaO barium oxide

b) Al_2S_3 aluminum sulfide

c) Ca_3P_2 calcium phosphide

d) Li_3N lithium nitride

2.89

	p^+	n	Ratio ($\frac{n}{p^+}$)
^4_2He	2	2	1.0
$^{20}_{10}\text{Ne}$	10	10	1.0
$^{40}_{18}\text{Ar}$	18	22	1.2
$^{84}_{36}\text{Kr}$	36	48	1.3
$^{132}_{54}\text{Xe}$	54	78	1.4

Generally

As the atomic number increases, the ratio of n to p^+ increases.

(More specific - once we reach the 3rd energy level, p^+ jumps by about $\frac{2}{9}$ for Ar, then by successive $\frac{1}{9}$ increments.)