Name: _____Key_____

Section: _____
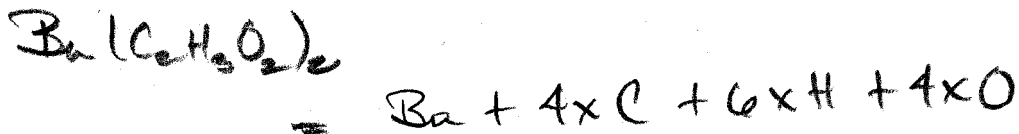
1. (2 points) Give the name or formula for the following:

(a) $Al(C_2H_3O_2)_3$ _Aluminum Acetate_   (b) copper (II) nitride _Cu_3N_2_

2. (3 points) Calculate the formula weight of barium acetate. *(Your instructor will sell you the formula for 1 point)*
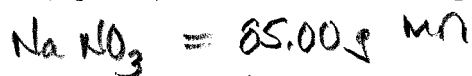
$Ba(C_2H_3O_2)_2$

$= Ba + 4 \times C + 6 \times H + 4 \times O$

answer: _$255.4g$ mol_

3. (3 points) How many oxygen atoms are there in 12.3 grams of carbon dioxide?

$12.3g\ CO_2 \times \dfrac{mol\ CO_2}{44.01g} \times \dfrac{2\ mol\ O}{1\ mol\ CO_2} \times \dfrac{16.00g\ O}{1\ mol\ O} =$

answer: _$8.94g$_

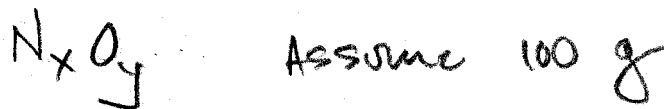4. (3 points) Determine the % composition of each element in sodium nitrate.

$NaNO_3 = 85.00g$ mol

$\%Na = \dfrac{22.99\ g/mol}{85.00\ g/mol} \times 100 = 27.05\%$

$\%N = \dfrac{14.01\ g/mol}{85.00\ g/mol} \times 100 = 16.48\%$

$\%O = 100 - 27.05 - 16.48 = 56.47\%$

5. (4 points) A compound is found to be 25.94% nitrogen with the rest being oxygen. Determine its empirical formula.

$N_x O_y$ · · · Assume 100 g

$$25.94_g N \times \frac{mol \ N}{14.01 g} = 1.85 \ mols \ N$$

$$(100 - 25.94)_g O \times \frac{1 \ mol \ O}{16.0 \ g \ O} = 4.63 \ mols \ O$$

$$N_{\frac{1.85}{1.85}} \qquad O_{\frac{4.63}{1.85}} \qquad = \qquad N_1 O_{2.5}$$

$$= \underline{\underline{N_2 O_5}}$$