## CHEM 130 Quiz 2 – June 16, 2016

Complete the following problems. You must show your work to receive full credit. Show your answers to the correct number of significant figures with the correct units.

- 1. One common prescription medication for asthma is an inhaler containing albuterol, whose molecular formula is C<sub>13</sub>H<sub>21</sub>NO<sub>3</sub>. Answer the following regarding albuterol. (11 pts.)
  - a. What it the molar mass of albuterol? (3 pts)

b. What is the mass percent of nitrogen in albuterol? (3 pts.)

$$\frac{14.0067 \text{ g N}}{239.315 \text{ g albuterol}} \times 100\% = 5.85\%$$

c. If 100 doses of albuterol retail for \$85.00 and each dose contains 180  $\mu g$  of the albuterol, what is the price of one mole of albuterol? (5 pts.)

- 2. Ion formation and ionic compounds: (6 points):
  - a. Bromine and calcium can react to form and ionic compound that contains only bromine calcium. Write the formula and name for this compound:

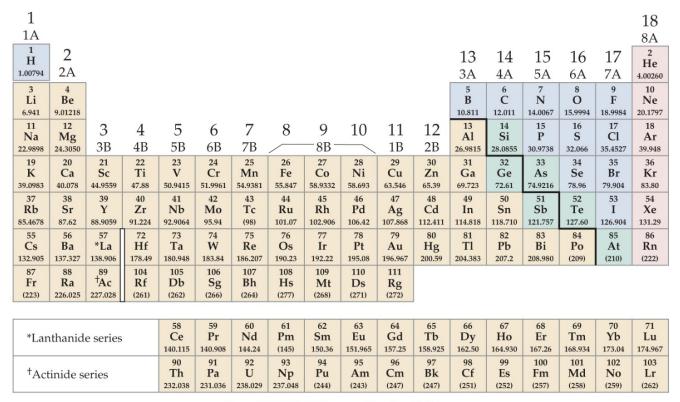
b. Chromium forms an ionic compound with sulfur with the formula Cr<sub>2</sub>S<sub>3</sub>. What is the charge on the chromium in this compound:

3. Complete the table below (8 points):

Name	Symbol	# Protons	# Neutrons	# Electrons
chlorine - 37	<sup>37</sup> CI	17	20	17
phosphorous – 31	<sup>31</sup> P	15	16	15
manganese – 55 ion	<sup>55</sup> Mn <sup>2+</sup>	25	30	23

## **Possibly Useful Information**

% by mass = $\frac{\text{g component}}{100 \text{ g sample}}$	d = m/v
Don't walk between parked carsor moving ones!	1 cm <sup>3</sup> = 1 mL 1000 cm <sup>3</sup> = 1 L



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