

CHM151 Quiz #2a 25 Pts Spring 2005 Name: Key

G = 10<sup>9</sup>, M = 10<sup>6</sup>, k = 10<sup>3</sup>, c = 10<sup>-2</sup>, m = 10<sup>-3</sup>,  $\mu$  = 10<sup>-6</sup>, 2.54 cm = 1 in,  
 12 in = 1 ft, 5280 ft = 1 mile, 3 feet = 1 yd, 60 sec = 1 min, 1 hr = 60 min, 1 lb = 454 g, 16 oz = 1 lb

**SHOW WORK TO RECEIVE CREDIT**

1. (5 Pts) Copper has a density of 8.94 g/cm<sup>3</sup>. Determine the mass of 82.4 cm<sup>3</sup> of copper.

$$\frac{82.4 \text{ cm}^3}{1 \text{ cm}^3} \times \frac{8.94 \text{ g}}{1 \text{ cm}^3} = 736.7 \text{ g}$$

2. (5 Pts) The recommended adult dose of Elixophyllin<sup>®</sup>, a drug used to treat asthma, is 6 mg/kg of body mass. Calculate the dose in milligrams for a 155 lb person.

$$\frac{155 \text{ lb body} \times \frac{454 \text{ g body}}{1 \text{ lb body}} \times \frac{1 \text{ kg}}{10^3 \text{ g}}}{1 \text{ kg body}} \times 6 \text{ mg Elix} = \underline{422 \text{ mg Elix}}$$

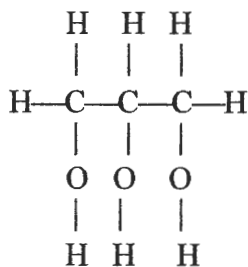
3. (5 Pts) An experiment calls for 45.8 grams of ethanol which has a density of 0.789 g/cm<sup>3</sup>. How many mL of ethanol must be used for the experiment?

$$\frac{45.8 \text{ g}}{0.789 \text{ g/cm}^3} = 58.048 \text{ mL EtOH}$$

4. (8 Pts) Complete the following table:

Part	Isotope name and mass number	Number of protons	Number of neutrons	Number of electrons
a.	K - 37	19	18	19
b.	Sc 77	34	43	34
c.	Se 78	34	44	34
d.	Iodine-129	53	76	53

5. (2 Pts) Give the molecular and the empirical formula for:



both empirical & molecular

G = 10<sup>9</sup>, M = 10<sup>6</sup>, k = 10<sup>3</sup>, c = 10<sup>-2</sup>, m = 10<sup>-3</sup>,  $\mu$  = 10<sup>-6</sup>, 2.54 cm = 1 in,  
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**SHOW WORK TO RECEIVE CREDIT.**

1. (5 Pts) An experiment calls for 45.8 grams of ethanol which has a density of 0.789 g/cm<sup>3</sup>. How many mL of ethanol must be used for the experiment?

$$\frac{45.8 \text{ g}}{0.789 \frac{\text{g}}{\text{cm}^3}} = 58.0 \text{ mL EtOH}$$

2. (5 Pts) The recommended adult dose of Elixophyllin<sup>®</sup>, a drug used to treat asthma, is 6 mg/kg of body mass. Calculate the dose in milligrams for a 185 lb person.

$$\frac{185 \text{ lb body} \times 454 \frac{\text{g}}{\text{lb}}}{10^3} \times 6 \frac{\text{mg}}{\text{kg body}} = 504 \text{ mg Elix}$$

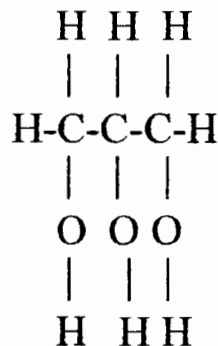
3. (5 Pts) Copper has a density of 8.94 g/cm<sup>3</sup>. Determine the mass of 82.4 cm<sup>3</sup> of copper.

$$82.4 \text{ cm}^3 \times 8.94 \frac{\text{g}}{\text{cm}^3} = 736.7 \text{ g}$$

4. (8 Pts) Complete the following table:

Part	Isotope name	Number of protons	Number of neutrons	Number of electrons
a.		17	18	
b.		34	45	
c.		34	44	
d.	Iodine-137			

5. (2 Pts) Give the molecular and the empirical formula for:



both empirical & molecular