

**Vasquez High School -- Chemistry -- Test #4 -- Chapter 6 -- 100 points**

Be CLEAR, ORGANIZED and NEAT in your presentations. Use pencil and eraser (minus 10 for pen!).  
Circle your answers. Be sure to use units/labels on every answer. SHOW ALL YOUR WORK.

- 1) What is Avogadro's Number? \_\_\_\_\_
- 2) A large glass contains 384 g of water. How many moles of water is that AND how many molecules of water are there? (ten points)

Five points.

- 3) How many moles are contained in  $1.92 \times 10^{21}$  atoms?
- 4)  $8.75 \times 10^{-7}$  moles of  $\text{XePtF}_6$  contains how many atoms of fluorine?
- 5) What is the molar mass of  $\text{Sr}(\text{BrO}_3)_2$  ?
- 6) What is the molar mass of  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  ?
- 7) Determine the number of moles in 18.2 g of vanadium (V) oxide,  $\text{V}_2\text{O}_5$ .
- 8) Determine the number of grams in 0.0423 moles of decane,  $\text{C}_{10}\text{H}_{22}$ .

Ten points.

9) Determine the percentage composition of the compound  $\text{NaFe}(\text{CN})_4$ .

10) How much silver can be recovered from 1850 g of silver nitrate,  $\text{AgNO}_3$  ?

One point each. Give the empirical formula for each compound as shown.

11)  $\text{C}_4\text{H}_{10}$

12)  $\text{C}_6\text{H}_{12}\text{O}_6$

13)  $\text{B}_2\text{H}_6$

14)  $\text{N}_2\text{O}_5$

15)  $\text{C}_2\text{H}_4(\text{OH})_2$

Ten points.

16) Determine the empirical formula AND molecular formula for the poison strychnine, a compound which has been analyzed to contain 75.42% C, 6.63% H, 8.38% N, with the rest being oxygen. It has a molecular mass of 334 g/mol.

17) State the two meanings for the atomic mass of an element:

a) \_\_\_\_\_

b) \_\_\_\_\_

18) A compound has the empirical formula  $C_2H_3O$ . It has a molecular mass between 125 g and 130 g. For five points, what must its molecular formula be?

19) For ten points, and an all-expenses paid trip to room 521 tomorrow, determine the empirical formula of the mineral compound "mullite" that has been analyzed to contain 38.028% Al, 48.827% O, and 13.145% Si.