Vasquez High School -- Chemistry -- Test #3 -- Chapter 6 -- 110 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 glass of water has a mass of 250 g. 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
4.72 x 10^{21} atoms?

4) 5.49 x 10^{-3} moles of $XePtF_6$ contains how many
atoms of fluorine?

5) What is the molar mass of $Sr(ClO_3)_2$?

6) What is the molar mass of $NiSO_4 \bullet 6H_2O$?

7) Determine the number of moles in 48.2 g
of vanadium pentoxide, V_2O_5.

8) Determine the number of grams in 0.065 moles
C_8H_{18}.

Ten points.
9) Determine the percentage composition of the compound $KFe(CN)_4$.

10) How much silver can be recovered from 1350 g of silver nitrate, $AgNO_3$?

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

11) C_4H_{10} 12) $C_6H_{12}O_6$ 13) B_2H_6 14) N_2O_5 15) $C_2H_4(OH)_2$

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) _____

Match Those Acids! Two points each.

_____ 18) HNO_3

_____ 19) HBr

_____ 20) $HC_2H_3O_2$

_____ 21) H_3PO_3

_____ 22) H_2S

a) sulfuric acid
b) bromic acid
c) nitrous acid
d) hydrochloric acid
e) hydrosulfuric acid
f) acetic acid
g) nitric acid
h) phosphorous acid
i) sulfurous acid

j) phosphoric acid
k) fluoric acid
l) hydrofluoric acid
m) perchloric acid
n) lysergic acid
o) hydrobromic acid
p) not this acid
q) not this one either
r) why are you reading these?

23) 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?

24) 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.