

New West Charter High School -- Honors/Chemistry -- Unit 3 -- Test #3 -- 110/70 points

Show all of your work. Partial credit for partial performance. And of course, no copying.

Write TRUE if the statement is true OR write the word(s) that substitute for the underlined word that would make it true. Writing false only earns partial credit. Three points.

_____ 1) When iodine crystals sublimed, they went from vapor back into a solid crystal phase.

_____ 2) A binary compound is a compound containing only two elements.

_____ 3) When electron pairs are shared between elements, we have formed ionic bonds.

_____ 4) The energy required to remove the first electron from an atom is called the first electric energy.

_____ 5) Max Planck is primarily responsible for the discovery of quantum theory.

Short answer / Fill-in Section. Three points each.

6) A fellow student showed you a compound he made, KNe. You said, "That can't be." Why?

7) What element burns yellow? _____ What color was potassium? _____

Which element burning was your favorite? _____

8) Niels Bohr devised a new model of the atom that replaced J. J. Thomson's plum pudding model. What did

Bohr's model describe the atom as? _____

9) Precisely why is cesium more reactive than sodium? _____

10) Why is an anion larger than its corresponding atom? _____

Formula Section -- Give exact answers with proper subscripts and parentheses. **Spelling of elements counts!**
Three points apiece.

Write the formulas and names which are made from the following pairs.

11) Ca and Br

12) Fe(II) and O

13) Al and PO_4^{3-}

Write the proper name for each of the following:



Write the proper formula for each of the following:

17) ammonium sulfate

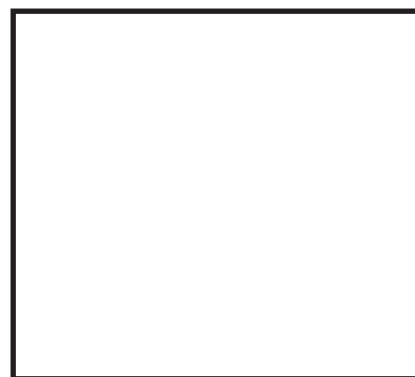
18) zinc carbide

19) thorium(III) iodide

Short Essay - Write 3-5 sentences - Five points each.

20) What was Werner Heisenberg famous for and what did it mean?

21) Using an energy diagram, as shown in the lab, describe why each element burns a particular color?



22) Draw an atomic diagram with proper isotopic symbol for Carbon-14.



23) Circle the larger atom.

K or Cl

24) Which has the larger radius?

Al or Al^{3+}

25) The Al^{+3} ion has _____ protons and _____ electrons.

26) Which three transition metals only have one valence, AND what are their ionic charges?

HONORS Section. Three points each unless specified.

Write the proper name for each of the following:

27) $\text{Cu}_2\text{Cr}_2\text{O}_7$ _____

28) $\text{Mg}_3(\text{PO}_3)_2$ _____

29) $\text{Si}(\text{ClO}_4)_4$ _____

30) For each of the following “old” names of ions, give the modern symbol. Two points apiece.

plumbic _____ stannous _____

For each of the following chemical compounds, write its precise formula.

31) manganese (VI) fluoride 32) barium peroxide 33) dinitrogen tetroxide

34) vanadium(V) permanganate 35) lanthanum(III) oxalate

36) The difference between -ate ions and -ite ions is that the -ates have _____

_____.

37) Electronegativity is a measure of an atom’s attraction for the _____ in a

_____.

38) Imagine an element called thompsonium (Tp). It forms four oxoacids with the number of oxygens ranging from four to one. Each of the anions has a charge of -1. For five points, write the four formulas and their respective names according to what you have learned about oxoacids (aka oxy-acids).