Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) All atoms of a given element have the same _____.   1) _____
    A) density
    B) mass
    C) number of electrons and neutrons
    D) number of neutrons
    E) number of protons

2) An atom of the most common isotope of gold, ^{197}Au, has _____ protons, _____ neutrons,   2) _____
and _____ electrons.
    A) 197, 79, 118
    B) 118, 79, 39
    C) 79, 118, 79
    D) 79, 197, 197
    E) 79, 118, 118

3) Which combination of protons, neutrons, and electrons is correct for the isotope of copper, $^{63}_{29}Cu$?   3) _____

    A) 29 p^+, 29 $n°$, 63 e^-
    B) 34 p^+, 29 $n°$, 34 e^-
    C) 29 p^+, 34 $n°$, 29 e^-
    D) 63 p^+, 29 $n°$, 63 e^-
    E) 34 p^+, 34 $n°$, 29 e^-

4) Which one of the following molecular formulas is also an empirical formula?   4) _____
    A) H_2O_2 B) C_6H_6 C) C_2H_6SO D) $C_6H_6O_2$ E) $H_2P_4O_6$

5) Which formula/name pair is <u>incorrect</u>?   5) _____
    A) $Mg(MnO_4)_2$ magnesium permanganate
    B) $Mn(NO_2)_2$ manganese(II) nitrite
    C) $Mg(NO_3)_2$ magnesium nitrate
    D) $Mn(NO_3)_2$ manganese(II) nitrate
    E) Mg_3N_2 magnesium nitrite

6) The correct name for HNO_2 is _____.   6) _____
    A) hyponitrous acid
    B) pernitric acid
    C) nitrous acid
    D) hydrogen nitrate
    E) nitric acid

7) The formula for the compound formed between aluminum ions and phosphate ions is _____.   7) _____
    A) $Al_2(PO_4)_3$ B) $AlPO_4$ C) $Al(PO_4)_3$ D) $Al_3(PO_4)_3$ E) AlP

8) What is the molecular formula for 1–propanol?   8) _____
    A) $C_5H_{12}O$ B) CH_4O C) C_2H_6O D) $C_4H_{10}O$ E) C_3H_8O

Answer the the following six questions by showing all of your calculations in the space provided. PARTIAL CREDIT WILL BE GIVEN. IF NO WORK IS SHOWN YOU WILL GET NO C REDIT

9) The element X has three naturally occurring isotopes. The masses (amu) and % abundances of the iso 9) _____
are given in the table below. The average atomic mass of the element is _____ amu.

Isotope	Abundance	Mass
^{221}X	74.22	220.9
^{220}X	12.78	220.0
^{218}X	13.00	218.1

    A) 218.5   B) 220.42   C) 221.0   D) 219.7   E) 220.4

10) The average atomic weight of copper, which has two naturally occurring isotopes, is 63.5. One of 10) _____
the isotopes has an atomic weight of 62.9 amu and constitutes 69.1% of the copper isotopes. The
other isotope has an abundance of 30.9%. The atomic weight (amu) of the second isotope is
_____ amu.

    A) 64.1   B) 63.8   C) 28.1   D) 63.2   E) 64.8