

### AP Chemistry Assignment #3

1. Identify the following elements:

- a. mass # 91 atomic # 40
- b. mass # 108 atomic # 47
- c. mass # 33 atomic # 16
- d. mass # 85 atomic # 36
- e. mass # 51 atomic # 23
- f. mass # 133 atomic # 55

2. Identify the following elements:

- a. mass # 98 atomic # 43
- b. mass # 186 atomic # 75
- c. mass # 75 atomic # 33
- d. mass # 14 atomic # 6
- e. mass # 40 atomic # 19
- f. mass # 131 atomic # 54

3. How many protons and neutrons are in each of the following elements? Also, identify the elements.

- a. mass # 89 atomic # 39
- b. mass # 73 atomic # 32
- c. mass # 24 atomic # 12 2+ charge
- d. mass # 238 atomic # 92
- e. mass # 35 atomic # 17 1- charge
- f. mass # 65 atomic # 30

4. How many protons and neutrons are in each of the following elements?

- a. mass # 227 Ac
- b. mass # 70 Ga
- c. mass # 11 B
- d. mass # 251 Cf
- e. mass # 239 Pu
- f. mass # 64 Cu

5. How many protons, neutrons and electrons are in each of the following ions?

- a. mass # 56 atomic # 26  $\text{Fe}^{3+}$
- b. mass # 40 atomic # 20  $\text{Ca}^{2+}$
- c. mass # 19 atomic # 9  $\text{F}^{1-}$
- d. mass # 31 atomic # 15  $\text{P}^{3-}$
- e. mass # 127 atomic # 53  $\text{I}^{1-}$
- f. mass # 127 atomic # 53  $\text{I}^{7+}$

6. How many protons, neutrons, and electrons are in each of the following:

- a. mass # 195 atomic # 78  $\text{Pt}^{1+}$
- b. mass # 93 atomic # 41 Nb

- c. mass # 40 atomic # 18 Ar<sup>1-</sup>
- d. mass # 16 atomic # 8 O<sup>2-</sup>
- e. mass # 122 atomic # 51 Sb<sup>2+</sup>
- f. mass # 56 atomic # 26 Fe<sup>3+</sup>
- g. mass # 184 atomic # 74 W
- h. mass # 133 atomic # 55 Cs<sup>1+</sup>
- i. mass # 28 atomic # <sub>14</sub>Si<sup>3-</sup>

7. Name the family to which each of the following elements belong:

- a. Fe
- b. Cl
- c. Ar
- d. Sr
- e. Rb
- f. Nd

8. Are the following elements metals or nonmetals?

- a. Mg
- b. Si
- c. Ge
- d. Br
- e. O
- f. Bi
- g. Co
- h. Mo
- i. Xe

9. Name the family to which each of the following elements belong:

- a. Es
- b. I
- c. Au
- d. Yb
- e. Kr
- f. Fr
- g. Ca

10. Given the position in the periodic table, what is the most likely oxidation state that each element will have when forming an ion?

- a. Cs
- b. N
- c. Br
- d. K
- e. Al
- f. S

11. Would you expect the following atoms to gain or lose electrons when forming an ion? If so, how many would be gained or lost?

- a. Be
- b. Cl
- c. Al
- d. O
- e. F
- f. Li
- g. P

12. Name each of the following compounds:

- a.  $\text{PbI}_2$
- b.  $\text{NH}_4\text{Cl}$
- c.  $\text{Fe}_2\text{O}_3$
- d.  $\text{LiH}$
- e.  $\text{CsCl}$
- f.  $\text{OsO}_4$
- g.  $\text{Cr}(\text{OH})_3$
- h.  $\text{NaC}_2\text{H}_3\text{O}_2$
- i.  $\text{K}_2\text{Cr}_2\text{O}_7$
- j.  $\text{Na}_2\text{SO}_4$
- k.  $\text{KH}_2\text{PO}_4$

13. Name each of the following compounds:

- a.  $\text{MgSO}_4$
- b.  $\text{N}_2\text{O}_3$
- c.  $\text{Ce}_2\text{O}_3$
- d.  $\text{KMnO}_4$
- e.  $\text{NiO}$
- f.  $\text{BaSO}_4$
- g.  $\text{Fe}(\text{IO}_4)_3$
- h.  $\text{SO}_3$
- i.  $\text{KClO}_4$

14. Name each of the following compounds:

- a.  $\text{NI}_3$
- b.  $\text{PCl}_5$
- c.  $\text{CO}$
- d.  $\text{P}_4\text{O}_{10}$
- e.  $\text{N}_2\text{O}_4$
- f.  $\text{NH}_3$

15. Name each of the following compounds:

- a.  $\text{P}_4\text{O}_6$
- b.  $\text{KOH}$
- c.  $\text{N}_2$
- d.  $\text{PH}_3$
- e.  $\text{BF}_3$

- f. AgCl
- g. KHCO<sub>3</sub>
- h. AgNO<sub>3</sub>

16. Name each of the following compounds:

- a. HIO<sub>3</sub>
- b. HBr
- c. HNO<sub>2</sub>
- d. HCN
- e. NaNO<sub>2</sub>
- f. K<sub>2</sub>SO<sub>3</sub>
- g. NaHSO<sub>3</sub>

17. Name each of the following compounds:

- a. UF<sub>6</sub>
- b. Cu(NO<sub>3</sub>)<sub>2</sub>
- c. H<sub>3</sub>PO<sub>4</sub>
- d. SF<sub>6</sub>
- e. N<sub>2</sub>H<sub>4</sub>
- f. Mg(OH)<sub>2</sub>
- g. SnCl<sub>2</sub>
- h. Na<sub>2</sub>CO<sub>3</sub>

18. Write formulas for each of the following compounds:

- a. sodium cyanide
- b. Tin(II) fluoride
- c. sodium hydrogen sulfate
- d. lead(II) nitrate
- e. iron(III) oxide
- f. calcium phosphate
- g. sodium bromate
- h. hydrogen iodide

19. Write formulas for each of the following compounds.

- a. sodium sulfate
- b. manganese dioxide
- c. potassium chlorate
- d. potassium hypochlorite
- e. lithium aluminum hydride
- f. barium chloride
- g. magnesium oxide
- h. copper(I) oxide

20. Write formulas for each of the following compounds:

- a. potassium carbonate
- b. magnesium hydroxide
- c. dinitrogen tetroxide

- d. hypoiodous acid
- e. iron(III) chloride
- f. tin(IV) oxide
- g. rubidium nitrate
- h. potassium chlorate
- i. carbon tetrachloride
- j. sodium iodate
- k. potassium permanganate
- l. sulfurous acid
- m. potassium hydrogen phosphate
- n. ammonium acetate
- o. ammonium dichromate
- p. hydroiodic acid

21. Give the names of the following acids:

- a.  $\text{H}_2\text{SO}_3$
- b. HI
- c. HBr
- d.  $\text{HNO}_2$
- e.  $\text{H}_3\text{PO}_4$
- f. HCl

22. Give formulas for the following acids:

- a. nitric acid
- b. hydrofluoric acid
- c. sulfuric acid
- d. hydrocyanic acid
- e. hydrosulfuric acid
- f. acetic acid