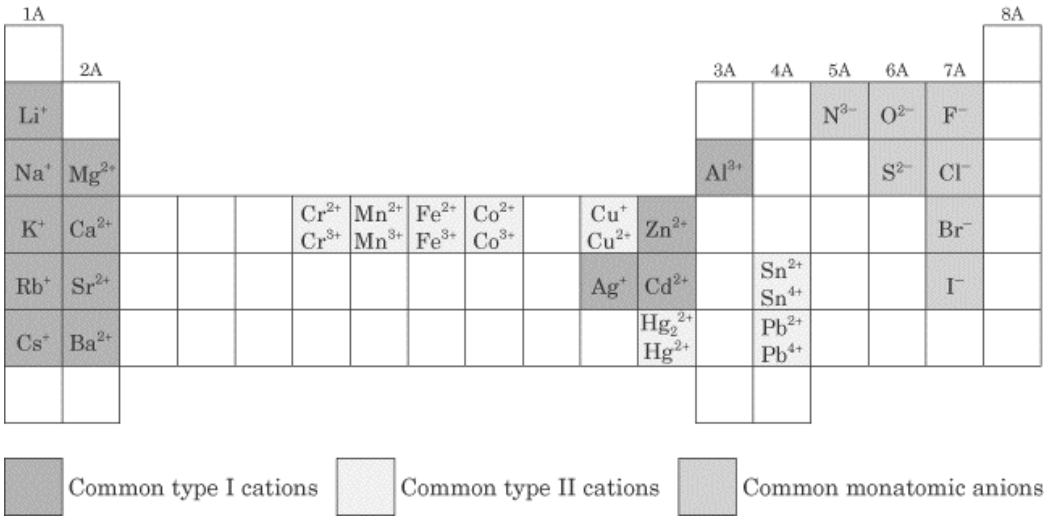
Chemistry Test Review - Unit 2 – Nomenclature

The following topics are covered:

- Charges for groups 1, 2, 13, 15, 16, 17
- Naming ionic and covalent compounds
- Naming transition metals with Roman Numerals
- Naming polyatomic compounds
- Know the pattern of removing and adding oxygens to the main polyatomics
  - i.e. hypo___ite → ___ite → ____ate → per___ate
- Naming Oxy acids from their polyatomics:
  - i.e. hypo___ous → __ous → __ic → per ____ ic



1. Define chemical formula and explain simplest form (may use examples if necessary).

2. What are the charges for the ions in the following:
   a. Group 1
   b. Group 2
   c. Group 13
   d. Group 14
   e. Group 15
   f. Group 16
   g. Group 17

3. Ions that have a positive charge are known as _____ and have _____ electrons.

4. Ions that have a negative charge are known as _____ and have _____ electrons.

5. Explain why elements in Group 1 have a 1+ charge while Group 2 have a 2+ charge and Group 15 has a 3- charge.

6. Latin prefixes are used in _____ compounds.

7. List the Latin Prefixes for 1-10.

8. What does the Latin prefix represent?

9. Covalent compounds are also known as _____ compounds.

10. What determines the order for a molecular compound?

11. Ionic compounds are also known as _____ compounds.

12. The suffix “ide” is added to _____ ions.

13. The word _____ is added after the name of a cation.

14. In an ionic compound the _____ ion is written first.

15. Compare and contrast Binary and Ternary Compounds.

16. Roman numerals represent the _____ of the ion.

17. Roman numerals are only written for _____ ions.

18. The number of _____ for a cation may change to cancel out the _____ of the anion (the reverse may be true as well).

19. Compare and contrast monatomic and polyatomic compounds.

20. If a polyatomic ion with suffix “ate”, loses an oxygen then the suffix becomes _____.

21. In a compound formula, put the polyatomic ion in _____ if needs to be represented with more than one atom.

22. Label the following comments with the compound that they best describe (ionic or covalent).
    a. Soluble in water
    b. Low Boiling Point
    c. Conductive Aqueous Solutions

23. An ion of bromine with a single negative charge has the symbol and the name
    a. Br^+, bromide ion.
    b. Br^-, bromide ion.
    c. Br^+, bromium ion.
    d. Br^-, bromium ion.

24. The platinum(II) ion and the platinum(IV) ion
    a. are anions.
    b. are polyatomic ions.
    c. have charges of 2+and 4+, respectively.
    d. have charges of 1+ and 3+, respectively.

25. What is the name of the compound made of zinc ions, Zn^{2+}, and fluoride ions, F^-?
    a. zinc difluoride
    b. zinc fluorate
    c. zinc fluoride
    d. zinc(II) fluorite

26. What is the chemical formula for the compound made of tin(IV) ions and chloride, Cl^-, ions?
    a. $SnCl_4$
    b. Sn_2Cl_2
    c. $SnCl_2$
    d. Sn_4Cl

27. What is the formula for the compound made of aluminum ions and sulfate ions?
    a. $AlSO_4$
    b. Al_3SO_4
    c. $Al(SO_4)_3$
    d. $Al_2(SO_4)_3$

28. How many atoms are present in one formula unit of barium acetate, $Ba(C_2H_3O_2)_2$?
    a. 4
    b. 8
    c. 15
    d. 16

29. What is the formula for the compound dinitrogen tetroxide?
    a. N_2O_3
    b. N_2O_4
    c. N_3O_2
    d. N_3O_4

30. The term acid usually refers to
    a. a solution of the acid compound in water.
    b. only the acid compound.
    c. a compound containing hydrogen.
    d. a compound containing hydrogen and oxygen.

31. The salt calcium nitrate, $Ca(NO_3)_2$, contains the anion from
    a. calcium.
    b. nitrogen.
    c. nitric acid.
    d. nitrous acid.

Extra:
Why does electricity not flow well through solid ionic comounds?

Why does adding H+ cause a compound to become an acid?

Mixed NOMENCLATURE Practice

WRITE THE NAME:

1. $BaSO_3$
2. $(NH_4)_3PO_4$
3. PBr_5
4. $MgSO_4$
5. H_3PO_4
6. $Na_2Cr_2O_7$
7. MgO
8. $Cu(NO_3)_2$
9. N_2O
10. MnO
11. $AgNO_3$
12. As_2O_5
13. Fe_2O_3
14. $HClO$
15. N_2O_3
16. HF
17. $SiBr_4$
18. $CuCl_2$
19. HNO_2
20. $BaCrO_4$

WRITE THE FORMULAS

21. Hydrobromic Acid
22. Chromium(III) Carbonate
23. Magnesium Sulfide
24. Iodine Trichloride
25. Ammonium Hydroxide
26. Calcium Chloride
27. Hydroselenic Acid
28. Iron(II) Nitride
29. Aluminum Hydroxide
30. Tin(II) Fluoride
31. Diphosphorus Pentoxide
32. Sulfurous Acid
33. Lead(II) Nitrate
34. Dihydrogen Monoxide
35. Perchloric Acid
36. Chlorous Acid
37. Silicon Dioxide
38. Sodium Chlorate
39. Nickel Nitrate
40. Potassium Perchlorate