UNIT N

2. He, Ne, Ar, Kr, Xe, Rn
4. F₂, B, Ni, S or S₈
6. Chromium, chlorine, beryllium, iron
8. Kr, Cu, Mn, N₂
10. Cl₂O, Br₃O₈, hydrogen bromide, diphosphorus trioxide
12. When an atom gains one, two, or three electrons, the particle that remains is a monatomic anion. The ion has a negative charge because it has more electrons than protons.
14. Copper(I) ion, iodide ion, potassium ion, mercury(I) ion, sulfide ion
16. Fe³⁺, H⁺, O²⁻, Al³⁺, Ba²⁺
18. The formula of an acid usually begins with H.
20. Monoprotic, 1; diprotic, 2; triprotic, 3

<table>
<thead>
<tr>
<th>Acid Name</th>
<th>Acid Formula</th>
<th>Ion Name</th>
<th>Ion Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric</td>
<td>H₂SO₄</td>
<td>Sulfate</td>
<td>SO₄²⁻</td>
</tr>
<tr>
<td>Carbonic</td>
<td>H₂CO₃</td>
<td>Carbonate</td>
<td>CO₃²⁻</td>
</tr>
<tr>
<td>Chloric</td>
<td>HClO₃</td>
<td>Chlorate</td>
<td>ClO₃⁻</td>
</tr>
<tr>
<td>Hydrofluoric</td>
<td>HF</td>
<td>Fluoride</td>
<td>F⁻</td>
</tr>
<tr>
<td>Bromic</td>
<td>HBrO₃</td>
<td>Bromate</td>
<td>BrO₃⁻</td>
</tr>
<tr>
<td>Sulfurous</td>
<td>H₂SO₃</td>
<td>Sulfite</td>
<td>SO₃²⁻</td>
</tr>
<tr>
<td>Arsenic</td>
<td>H₃AsO₄</td>
<td>Arsenate</td>
<td>AsO₄³⁻</td>
</tr>
<tr>
<td>Periodic</td>
<td>HIO</td>
<td>Periodate</td>
<td>IO₃⁻</td>
</tr>
<tr>
<td>Selenous</td>
<td>H₂SeO₃</td>
<td>Selenite</td>
<td>SeO₃²⁻</td>
</tr>
<tr>
<td>Tellurous</td>
<td>H₂TeO₃</td>
<td>Tellurite</td>
<td>TeO₃²⁻</td>
</tr>
<tr>
<td>Hypoiodous</td>
<td>HIO</td>
<td>Hypoiodite</td>
<td>IO⁻</td>
</tr>
<tr>
<td>Hypobromous</td>
<td>HBrO</td>
<td>Hypobromite</td>
<td>BrO⁻</td>
</tr>
<tr>
<td>Telluric</td>
<td>H₂TeO₄</td>
<td>Tellurous</td>
<td>TeO₄²⁻</td>
</tr>
<tr>
<td>Perbromic</td>
<td>HBrO₄</td>
<td>Perbromate</td>
<td>BrO₄⁻</td>
</tr>
<tr>
<td>Hydrobromic</td>
<td>HBr</td>
<td>Bromide</td>
<td>Br⁻</td>
</tr>
</tbody>
</table>

24. An anion or cation that contains an ionizable hydrogen, such as HSO₄⁻ and NH₄⁺, can lose the hydrogen as thus behave as an acid.

26. HSO₃⁻, HCO₃⁻

28. Hydrogen selenite ion, hydrogen telluride ion
30. Ammonium ion, cyanide ion
32. OH\(^-\), Cd\(^{2+}\)
34. Ca(OH)\(_2\), NH\(_4\)Br, K\(_2\)SO\(_4\)
36. MgO, AlPO\(_4\), Na\(_2\)SO\(_4\), CaS
38. BaSO\(_3\), Cr\(_2\)O\(_3\), KIO\(_4\), CaHPO\(_4\)
40. Lithium phosphate, magnesium carbonate, barium nitrate
42. Potassium fluoride, sodium hydroxide, calcium iodide, aluminum carbonate
44. Copper(II) sulfate, chromium(III) hydroxide, mercury(I) iodide
46. Hydrates: NiSO\(_4\) \cdot 6\ H_2O, Na\(_3\)PO\(_4\) \cdot 12\ H_2O; anhydrate: KCl
48. 7; magnesium sulfate heptahydrate
50. (NH\(_4\))\(_3\)PO\(_4\) \cdot 3\ H_2O, K\(_2\)S \cdot 5\ H_2O
52. ClO\(_4\)^-, BaCO\(_3\), ammonium iodide, phosphorus trichloride
54. Hydrogen sulfide ion, beryllium bromide, Al(NO\(_3\))\(_3\), OF\(_2\)
56. Hg\(_2\)^{2+}, CoCl\(_2\), silicon dioxide, lithium nitrite
58. Nitride ion, calcium chlorate, Fe\(_2\)(SO\(_4\))\(_3\), PCl\(_5\)
60. SnF\(_2\), K\(_2\)CrO\(_4\), lithium hydride, iron(II) carbonate
62. Nitrous acid, zinc hydrogen sulfate, KCN, CuF
64. Mg\(_3\)N\(_2\), LiBrO\(_2\), sodium hydrogen sulfite, potassium thiocyanate
66. Nickel hydrogen carbonate, copper(II) sulfide, Cr(IO\(_3\))\(_3\), K\(_2\)HPO\(_4\)
68. SeO\(_2\), Mg(NO\(_2\))\(_2\), iron(II) bromide, silver oxide
70. Tin(II) oxide, ammonium dichromate, NaH, H\(_2\)C\(_2\)O\(_4\)
72. Co\(_2\)(SO\(_4\))\(_3\), FeI\(_3\), copper(II) phosphate, manganese(II) hydroxide
74. Aluminum selenide, magnesium hydrogen phosphate, KClO\(_4\), HBrO\(_2\)
76. Sr(IO\(_3\))\(_2\), NaClO, rubidium sulfate, diphosphorus pentoxide
78. Iodine monochloride, silver acetate, Pb(H\(_2\)PO\(_4\))\(_2\), GaF\(_3\)
80. MgSO\(_4\), Hg(BrO\(_2\))\(_2\), sodium oxalate, manganese(III) hydroxide