**Octet rule** the observation that atoms of nonmetals form the most stable

molecules when they are surrounded by eight electrons (to fill their valence orbitals)

**Orbital** a representation of the space occupied by an electron in an atom; the

probability distribution for the electron

**Organic acid** an acid with a carbon – atom backbone and a carboxyl group

**Organic chemistry** the study of carbon – containing compounds (typically

containing chains of carbon atoms) and their properties

**Oxidation** an increase in oxidation state (a loss of electrons)

**Oxidation – reduction (redox) reaction** a reaction in which one or more

electrons are transferred

**Oxidation states** a concept that provides a way to keep track of electrons in

oxidation – reduction reactions according to certain rules

**Oxidizing agent (electron acceptor)** a reactant that accepts electrons from

another reactant

**Oxyacid** an acid in which the acidic proton is attached to an oxygen atom

**Ozone** O3, a form of elemental oxygen much less common than O2 in the

atmosphere near the earth