**Acid** a substance that produces hydrogen ions in aqueous solution; a proton

donor

**Acid-base indicator** a substance that marks the end point of an acid-base

titration by changing color

**Acid rain** rainwater with an acidic pH; a result of air pollution by sulfur dioxide

and nitrogen oxides

**Actinide series** a group of fourteen elements following actinium on the periodic

table; in which the 5f orbitals are being filled

**Activation energy** the threshold energy that must be overcome to produce a

chemical reaction

**Air pollution** contamination of the atmosphere, mainly by the gaseous products

of transportation and the production of electricity

**Alcohol** an organic compound in which the hydroxyl group is a substituent on a

Hydrocarbon

**Aldehyde** an organic compound containing the carbonyl group bonded to at

least one hydrogen atom

**Alkali metal** a Group 1 metal

**Alkaline earth metal** a Group 2 metal

**Alkane** a saturated hydrocarbon with the general formula C*n*H*2n + 2*

**Alkene** an unsaturated hydrocarbon containing a carbon-carbon double bond.

The general formula is C*n*H*2n*

**Alkyne** an unsaturated hydrocarbon containing a carbon-carbon triple bond.

The general formula is C*n*H*2n - 2*

**Alloy** a substance that contains a mixture of elements and has metallic

properties.

**Alloy steel** a form of steel containing carbon plus metals such as chromium,

cobalt, manganese, and molybdenum.

**Alpha () particle** a helium nucleus produced in radioactive decay

**Alpha-particle production** a common mode of decay for radioactive nuclides in

which the mass number changes

**Amine** a organic base derived from ammonia in which one or more of the

hydrogen atoms are replaced by organic groups

**-Amino acid** an organic acid in which an amino group, a hydrogen atom, and

an R group are attached to the carbon atom next to the carboxyl group

**Ampere** the unit of measurement for electric current; 1 ampere is equal to 1

coulomb of charge per second

**Amphoteric sunstance** a substance that can behave either as an acid or as a

base

**Anion** a negative ion

**Anode** in a galvanic cell, the electrode at which oxidation occurs

**Aromatic hydrocarbon** one of a special class of cyclic unsaturated

hydrocarbons, the simplest of which is benzene

**Arrhenius concept** a concept postulating that acids produce hydrogen ions in

aqueous solution, whereas bases produce hydroxide ions

**Atmosphere** the mixture of gases that surrounds the earth’s surface

**Atom** the fundamental unit of which elements are composed

**Atomic mass (weight)** the weighted average mass of the atoms in a naturally

occurring element

**Atomic number** the number of protons in the nucleus of an atom; each element

has a unique atomic number

**Atomic radius** half the distance between the atomic nuclei in a molecule

consisting of identical atoms

**Atomic solid** a solid that contains atoms at the lattice points

**Aufbau principle** a principle stating that as protons are added one by one to the

nucleus to build up the elements, electrons are similarly added to the hydrogen-like orbitals

**Auto-ionization** the transfer of a proton from one molecule to another of the

same substance

**Avogadro’s law** equal volumes of gases at the same temperature and pressure

contain the same number of particles (atoms or molecules)

# Avogadro’s number the number of atoms in exactly 12 grams of pure 12C,

# equal to 6.022 x 1023