**Lanthanide series** a group of fourteen elements following lanthanum on the

periodic table, in which the 4*f* orbitals are being filled

**Lattice** a three – dimensional system of points designating the positions of the

centers of the components of a solid (atoms, ions, or molecules)

**Law of chemical equilibrium** a general description of the equilibrium condition;

it defines the equilibrium expression

**Law of conservation of energy** energy can be converted from one form to

another but can be neither created nor destroyed

**Law of conservation of mass** mass is neither created not destroyed

**Law of constant composition** a given compound always contains elements in

exactly the same proportion by mass

**Law of mass action** (also called the law of chemical equilibrium) a general

description of the equilibrium condition; it defines the equilibrium expression

**Law of multiple proportions** a law stating that when two elements form a

series of compounds, the ratios of the masses of the second element that combine with one gram of the first element can always be reduced to small whole numbers

**Lead storage battery** a battery (used in cars) in which the anode is lead, the

cathode is lead coated with lead dioxide, and the electrolyte is a sulfuric acid solution

**LeChatelier’s principle** if a change is imposed on a system at equilibrium, the

position of the equilibrium will shift in a direction that tends to reduce the effect of that change

**Lewis structure** a diagram of a molecule showing how the valence electrons

are arranged among the atoms in the molecule

**Limiting reactant (limiting reagent)** the reactant that is completely consumed

when a reaction is run to completion

**Line spectrum** a spectrum showing only certain discrete wavelengths

**Linear accelerator** a type of particle accelerator in which a changing electrical

field is used to accelerate a beam of charged particles along a linear path

**Lipids** water – insoluble substances that can be extracted from cells by nonpolar

organic solvents

**Liquid** one of the three states of matter; has a fixed volume but takes the shape

of the container

**London dispersion forces** the relatively weak forces, which exists among

noble gas atoms and nonpolar molecules, that involve an accidental dipole that induces a momentary dipole in a neighbor

**Lone pair** an electron pair that is localized on a given atom; an electron pair not

involved in bonding