3. ELECTRICITY AND MAGNETISM

VOCABULARY

alternating current (AC)	current in which the flow of charges changes directions several times each second
ammeter	a device for measuring current
ampere (amps)	the unit for measuring the strength of an electric current
anion	a negative charge carrier
aurora	light produced when charged particles from space travel along a planet's magnetic field lines at its poles and collide with particles in the upper atmosphere
cation	a positive charge carrier
circuit	a closed loop of conducting material which includes a source of electromotive force
conductivity	a measure of the ability of a material to conduct electrical current
conductor	a substance that transmits electricity
Coulomb's law	an equation that relates the strength of the force exerted by one charge on another with respect to the distance between them; an inverse square law
direct current (DC)	current that moves in one direction, generally produced by batteries or wet cells
domain	a minute region within a magnet
dynamo theory	the generation of a magnetic field by circulating electric charges
electric field	the space around a charge that is influenced by that charge
electric current	the flow of electric charge through a conductor, measured in amperes
electrolyte	any chemical substance that forms ions in solution

electromagnet	a solenoid with a core of magnetic material
electromagnetic induction	the creation of an electric current in a circuit exposed to a changing magnetic field
electromotive force	the amount of energy derived from an electric source; the force that results from differences in potential that causes an electric current, commonly measured in volts (EMF)
electroscope	a device that shows the presence of static electricity
electrostatic generator	a device that generates and collects a large amount of charge
electrostatic induction	the movement of charges within a neutral body due to the influence of an independent, charged object
electrostatics	the study of phenomena created by electric charges at rest
ferromagnetic	a material that is strongly magnetic or magnetized easily
fuse	a circuit element that contains a wire that melts when current gets too high, thus creating an open circuit
galvanometer	a device for detecting small amounts of current
Leyden jar	a device for storing electricity
lines of force	imaginary lines that describe the strength and direction of the magnetic field at various positions around the magnet
magnetar	a pulsar with an unusually strong magnetic field
magnetic field	the space surrounding a magnetic through which the magnetic force acts
magnetic variation	the angular difference between geographic and magnetic north
magnetosphere	the region around a planet occupied by its magnetic field
open circuit	an incomplete electrical circuit in which no current flows due to an open switch or fuse

parallel circuit	a circuit with two or more loops through which the current can flow; each loop has an independent connection to the voltage source
permanent magnet	a magnet made from a ferromagnetic material that does not lose its magnetism after being magnetized
phosphor	substances that emit visible light for an extended period after they have been energized by some other light source
pulsar	a rapidly spinning neutron star
resistance	a measure of how well electric current flows through a material
series circuit	an electric circuit in which resistors are arranged so that they come one after another so that the circuit forms one continuous loop
solar wind	the flow of particles from the Sun
solenoid	a coil of current-carrying wire which produces a magnetic field
static electricity	electricity held in place by a material with electric charge
sunspots	a region on the Sun's surface created by protruding magnetic field lines
temporary magnet	a magnet made from a ferromagnetic material that loses its magnetism quickly
volt	the unit of electric potential difference or electromotive force