

Glossary

Module 1

electric charge - is a basic property of elementary particles of matter. The protons in an atom, for example, have positive charge, the electrons have negative charge, and the neutrons have zero charge.

electrostatic force - is one of the most powerful and fundamental forces in the universe. It is the force a charged object exerts on another charged object.

permittivity – is the ability of a substance to store electrical energy in an electric field. It is a constant of proportionality that exists between electric displacement and electric field intensity in a given medium.

vector - a quantity having direction as well as magnitude.

Module 2

electric field - a region around a charged particle or object within which a force would be exerted on other charged particles or objects.

electric flux - is the measure of flow of the electric field through a given area.

Module 3

electric potential - the work done per unit charge in moving an infinitesimal point charge from a common reference point (for example: infinity) to the given point.

electric potential energy - is a potential energy (measured in joules) that results from conservative Coulomb forces and is associated with the configuration of a particular set of point charges within a defined system.

Module 4

Capacitance - is a measure of the capacity of storing electric charge for a given configuration of conductors.

Capacitor - is a passive two-terminal electrical component used to store electrical energy temporarily in an electric field.

Dielectric - a medium or substance that transmits electric force without conduction; an insulator.

Module 5

electric current - is a flow of charged particles. In electric circuits this charge is often carried by moving electrons in a wire. It can also be carried by ions in an electrolyte, or by both ions and electrons such as in plasma.

magnetic field - a region of space near a magnet, electric current, or moving charged particle in which a magnetic force acts on any other magnet, electric current, or moving charged particle.

magnetic force - The force exerted between a magnet and a moving, electrically charged particle or between moving, electrically charged particles due to their relative motion.

permeability - a quantity measuring the influence of a substance on the magnetic flux in the region it occupies.

Module 6

inductance - is a measure of the capacity of storing magnetic field for a solenoid.

inductor - is a passive electronic component that stores energy in the form of a magnetic field.

magnetic flux - is the measure of flow of the magnetic field through a given area.

Resistance - a measurement of the difficulty encountered by a power source in forcing electric current through an electrical circuit.