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1. Since the electron is negatively charged, and unlike charges attracts so that it will move to the direction of the positive terminal of the electric field.
   Therefore, the electron will be acted upon by a force that will be directed opposite to the electric field i.e force is downward direction
   For Newton 2nd law, force =Mass x Acceleration
   F=qE f=m x a
   F=eE F=ma
   eE=ma
   a=e x E/m
   Since the electric field is uniform, therefore the magnitude and direction of the electric field will be constant. The force will be constant and the magnitude of the acceleration will be constant while the direction of acceleration will be downward.
2. **ELECTRIC FIELD**
   An **electric field** (sometimes **E-field**) is the physical field that surrounds each electric charge and exerts force on all other charges in the field, either attracting or repelling them. Electric fields originate from electric charges, or from time-varying magnetic fields. Electric fields and magnetic fields are both manifestations of the electromagnetic force, one of the four fundamental forces (or interactions) of nature.
   The electric field is defined at each point in space as the force (per unit charge) that would be experienced by a vanishingly small positive test charge if held at that point. As the electric field is defined in terms of force, and force is a vector (i.e. having both magnitude and direction), it follows that an electric field is a vector field. Vector fields of this form are sometimes referred to as force fields. The electric field acts between two charges similarly to the way the gravitational field acts between two masses, as they both obey an inverse-square law with distance. This is the basis for Coulomb's law, which states that, for stationary charges, the electric field varies with the source charge and varies inversely with the

square of the distance from the source. This means that if the source charge were doubled, the electric field would double, and if you move twice as far away from the source, the field at that point would be only one-quarter its original strength.

MAGNETIC FIELD

A **magnetic field** is a vector field that describes the magnetic influence on moving electric charges, electric currents, and magnetized materials. A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field. The effects of magnetic fields are commonly seen in permanent magnets, which pull on magnetic materials such as iron, and attract or repel other magnets.

The force on an electric charge depends on its location, speed and direction; two vector fields are used to describe this force. The first is the electric field, which describes the force acting on a stationary charge and gives the component of the force that is independent of motion. The magnetic field, in contrast, describes the component of the force that is proportional to both the speed and direction of charged particles. The field is defined by the Lorentz force law and is, at each instant, perpendicular to both the motion of the charge and the force it experiences.

ELECTRIC CURRENT

An electric current is a stream of charged particles such as electrons or ions moving through an electrical conductor or space.

If a neutral object loses electrons, it becomes more positively charged. If a neutral object gains electrons, it becomes negatively charged. Current is the rate of flow of positive charge. Current can be caused by the flow of electron, ions or other charged particles.