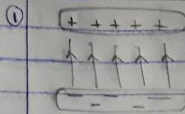


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Since the electron is negatively charged, and unlike charges attracts so that it will move in the direction of the positive terminal of the electric field.

Therefore, the electron will be acted upon by a force that will be directed opposite to the ~~the~~ electric field i.e. force is downward ~~the~~ direction.

Newton's 2nd Law, force = Mass \times Acceleration

$$F = mg \quad s = ma$$

$$F = eE \quad F = ma$$

$$eE = ma$$

$$a = \frac{eE}{m}$$

Since that electric field is uniform, therefore the magnitude & direction of the electric field will be constant. The force will be constant while the direction of acceleration will be downward.

② Electric field

An electric field is said to exist at a particular point in space if a charged particle placed at that point experiences a force that would not be felt by an uncharged particle. A charged particle creates an electric field. The field acts on another charged object to produce a force.

The direction of the field is taken to be the direction of the force it would exert on a positive test charge. The electric field is defined as the electric force ~~is~~ per unit charge. The electric field is radially outward from a positive charge and radially inward toward a negative point charges.

Magnetic field

The magnitude of the magnetic force F on a charge q moving at a speed v in a magnetic field of strength B is given by

$$F = qvB \sin \theta$$

where θ is the angle between the directions of v & B . This B is magnetic field strength.

A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field. Magnetic fields are produced by moving electric charges & intrinsic magnetic moments of elementary particles. A stationary charged particle does not interact with a static magnetic field. A charge placed in a magnetic field experiences a magnetic force, the charge must be moving, for no magnetic force acts on a stationary ~~charge~~ charge.

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 ~~posit~~ Positive charge. Current can be caused by the flow of electron, ions or other charged particles.