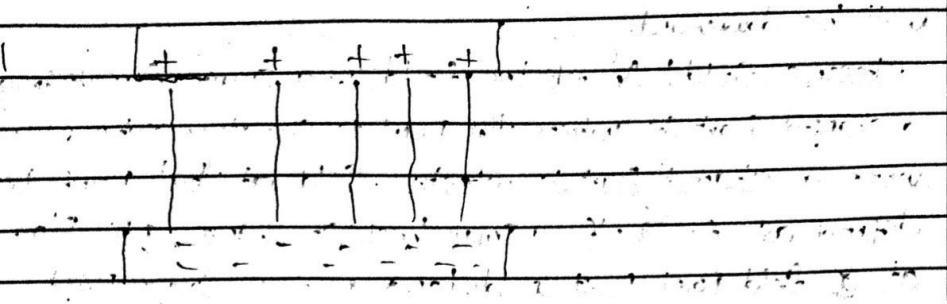
Halina Abubakar Nagodi
Civil Engineering.
19/ENG02/1010
ENG 221 - Basic Electricity.



Since the electron is negatively charged, and unlike charges attract 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 second law, force = mass x acceleration.

$F = qE$ $\quad f = ma$

$f = eE$

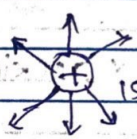
$\therefore e \cdot E = ma$

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

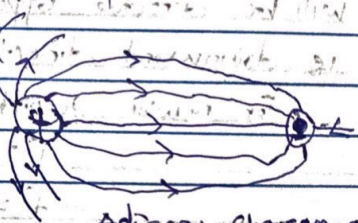
Since the electric field is Uniform, therfore magnitude and direction of the electric field will be Constent. The fire will be constant while the direction of acceleration will be downward.

Electric field: An electric field is a space surrounding a charged particle where the particle exerts electric force when a chared particle electric field at that point is defined as $E = f/q$. If a small test of charge q is placed at a feld point P at a distance r from source point magnitude of the force is given by $f = \frac{kqq_1}{r^2}$

The electric is defined at each point/space as the force that would be experienced by a vanishaly small positive test charge if held at that point



Isolated point charge

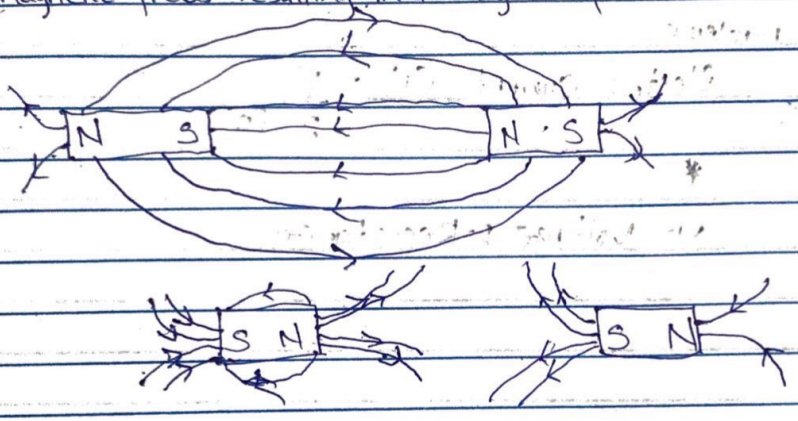


Adjacent charges of opposite polarity.

Opposite charges of like Polarity.

Magnetic field

This is a vector that discribes the magnetic influence on moving electric charges, electric current and magnetized materials. A charge that is moving in a magnetic field experience a force perpendicular to its own velocity and and magnetic field. All moving charge particles create magnetic field and all moving charged particles can detect magnetic fields resulting in a magnetic force.



Magnetic flux is the ammount of magnetic ~~fel~~ field produced by a magnetic source. Magnetic flux density is the amount of flux passing through a defined area perpendicular to the direction of the flux

Magnetic flux density = magneti flux / Area (T)

Electric Current:

This is a System of charged particle such as electron or Ions moving through an electrical Conductor or space. This current is the rate of movement of Charge. Conductors are materials that contain electrons that are loosely connected to the nucleus and can easily move through the material from one atom to another while Insulate, electron are held firmly to their nucleus

Electric current (I) = $\frac{V}{R}$ (A)

*

V = Voltage, R = Resistance