Mbre Stefan Marshall
17/ENG05/037
Mechatronics Engineering

1) When a mass is thrown in the sky, it will follow a parabolic path because of gravity. The horizontal acceleration is zero and vertical acceleration is g. Its magnitude is $9.8 \, m/s^2$

$$f = mg.$$
$$so, \; g = a$$

You can say the same thing about charges in a uniform electric field. If a charge is thrown in a uniform electric field, it would follow a parabolic path. The acceleration can be found by drawing a freebody diagram $(f = qE)$ and applying Newton's second law of motion.

$$Ma = qE$$
$$Acceleration = \frac{qE}{M}$$

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 acceleration will be downward.

Electric field
2). An electric field is also said to exist at a point in space if a charged particle placed at that point experiences a force but would not be felt by an uncharged particle. A charged particle creates an electric field - the field's direction is taken to be the direction of the force it would exert on a positive test charge.

Magnetic field.
A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the 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. A stationary charged particle does not interact with a static magnetic field.

Electric current.

It is a stream of charged particles such as electrons or ions moving through an electrical conductor or space. Current can be caused by the flow of electron ions or other charged particles.