ENG 221
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1) Right now the human body undergoes a uniform gravitational force. It's magnitude is $9.8 m/s^2$ and points straight down. If a mass is thrown in the air, it will follow a parabolic path because of gravity. The horizontal acceleration is zero and vertical acceleration is g. We know this because a free-body diagram only shows mg from

$$F = mg$$

and the law tells us that

$$mg = ma$$

Considering an electron thrown in a uniform electric field, it follows a parabolic path. Neglecting gravity and air resistance the parabola comes from the constant force experienced by the charge in the electric field, The acceleration is zero in one direction and constant in another.

The acceleration can be found by drawing a free body diagram
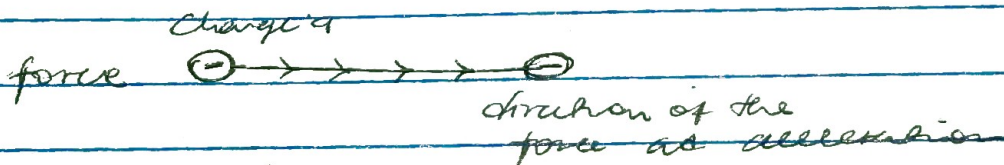
The example, if a uniform electric field in a region is directed upwards and electron shot horizontally into the region

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Since the electric field is uniform, then the magnitude and direction of the field will be constant. The force will be constant and the magnitude of acceleration will be constant and its direction would be downward.

2 Electric field

An electric field is said to exist at a point in space if a charged particle placed at ~~two~~ 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 ~~direct~~ of the force it would exert on a positive test charge. The electric field is radically outward from a positive charge and radially in toward a negative point charge.

3 Magnetic field

A charge that is moving in magnetic field experiences a force perpendicular to its own velocity and to the magnetic field. Magnetic fields are produced by moving electric charges and intrinsic magnetic moments of elementary particle.