****Assignment Title:**** Assignment 1
****Course Title:**** Basic Electrical Engineering I
****Course Code:**** ENG 221

**Question 1**

Using the concept of Newton’s second law of motion, describe the magnitude and direction of the acceleration of an electron being shot horizontally into a closed space with a uniform field being directed upward.

**Answer:**



**Question 2:**

Describe electric field, magnetic field and electric current with respect to charges

**ANSWERS**

**ELECTRIC FIELD:**

Electric field is defined as the electric force per unit charge or a region around a charge particle within a force would be exerted on other charged particles or objects.

**“E=F/q”**

The direction of the field is taken to be the direction of the force it would exert on a positive test charges. The electric field goes the opposite direction if the charge is negative. Therefore, the electric field is radially outward from a positive charge and radially in toward a negative point charge.

**MAGNETIC FIELD:**

A magnetic field is a vector field that describes the magnetic influence on moving electric charges. A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field. Electric current flowing through a long straight wire is a simple example of magnetic field.

**F= q[E + (v×B)]**

Where:

**q**= charge

**E**= Electric field

**V**= velocity

**B**= magnetic field.

**ELECTRIC CURRENT:**

Electric current is a stream of charged particles, such as electrons moving through space or an electric conductor. It is measured as the net rate flow of electric charge past a region.

**I=V/R ; I=Q/t**