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CIVIL ENGINEERING

1. Newton's second law states that the vector sum of the force **F** acting on an object is equal to the mass **m** of the object multiplied by the acceleration **a** of the object: F=ma. When an electron enters the field, there is vertical downward force acting on it. This is because electric field and the electric force acts in the opposite direction to an electric field and the electric field always points upward. G= electric field strength, q= charge of the electron.

   By using Newton's second law F= ma where m= mass, F= force, a= acceleration
   a is directed downwards just like force F. This obeys Newton's second law.

2. Electric field: This is a region around a charge where another charge can experience electric force. Electric field is not a single vector quantity but an infinite set of vector quantities, associated with each hence, it is a vector field.

   Electric field: This is a region around a charge where another charge can experience electric force. Electric field is not a single vector quantity but an infinite set of vector quantities, associated with each point in space, hence it is a vector field.

   Electric field; E= F/q

   E= Electric field

   F= force

   q= charge

   Magnetic field: This is defined by the force that a charged particle experiences moving in the field. The direction of this force is perpendicular to both the

direction of the moving charged particle and the direction of the applied magnetic field.

$F=quB\sin\theta$

Where

F= Magnetic force

q= charge of the particle

B= Magnetic field strength

V= Velocity at which the charge is moving with

Electric current: This is a stream of charged particles such as electrons or ions moving through an electrical conductor or space. The moving particles are called charge carriers, which maybe of several types of particle depending on the conductors.