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Basic Elect Assignment

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.

Solution

When an electron is shot into a field, there are different forces acting on it. The force that is propelling the electron horizontally, and the upward electric field. According to Newton's 2nd law of motion, when a body is acted on by a force, the body will move with an acceleration proportional to that of of the force, and in the same direction. So therefore, the resultant magnitude and direction of acceleration of the electron would be a function of both forces acting on it.

2) Describe electric field, magnetic field and electric current with respect to charges.

Solution.

(a) Electric field is a region or space in which a charge experiences an electrical force.

(b) Magnetic field is a vector field caused by the movement of electrical charges where a magnetic force is experienced.

(c) Electric current is a stream of charged particles flowing through a a conductor, like a wire.