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(1) Answer

Newton's second laws of motion states that the acceleration of an object as produced by a net force is directly proportional to the magnitude of the net force, in the same direction as the net force, and inversely proportional to the mass of the object ($F_{net} = ma$). In the question the two constants involves are acceleration and force.

In an electric field, negative charges are in the opposite direction of the electric field. Thus, as the electric field is acting upwards (directed upwards), as the electron is shot into the electric field, it would be directed downward the electric field; Thus the force magnitude of the force acting upwards and that of the acceleration acting upwards is equal to the magnitude of the force and acceleration acting as the electron as it moves downwards. Thus, the magnitude and direction of the acceleration are constant since the electric field is uniform and since the force is constant (force is directly proportional to acceleration, so when are constant

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

Answer

Electric field with respect to charge

Electric field can be defined as the region around a charged particle or object within which a force could be exerted on other charged particles or objects. It can also be defined as the electric force per unit charge. Electric field is related to electric charge with the equation $\vec{E} = \frac{\vec{F}}{q}$

where $\vec{E}$ = Electric field, $\vec{F}$ = Electric force, q = electric charge. The charge can either be positive or negative.

Magnetic Field with respect to charges

Magnetic field is a vector field that describes the magnetic influence on moving electric charges, electric currents and magnetized materials. A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field. Magnetic force in a magnetic field is created when moving charged particles (electric current) detect a magnetic field. According to the right hand rule, if the thumb of the right hand is in the direction of the current, the other fingers will curl in the direction of the magnetic field.

The magnetic field $\vec{B}$ and charge 'q' are related by $F = q\vec{v}\vec{B}$ sinθ.

Electric current with respect to charges

An electric current is a flow of electronic charge in a circuit. The charges can either be negatively charged electrons or positively charged carriers are protons, positive ions or holes.

Electronical current can be defined as the flow of electrons through a closed circuit when a potential difference is applied across the circuit. In many contexts, the direction of the current in electric circuits is taken as the direction of positive charge flow.