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ASSIGNMENT

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.

QUESTION 2

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

ANSWER

2 MAGNETIC FIELD:

Is a vector field that describes the magnetic influence on moving electric, electric currents, and magnetized material. A charge that is moving in a magnetic field experiences a force perpendicular to its own velocity and to the magnetic field.

ELECTRIC FIELD:

Is defined as the electric force per unit charge. The direction of the force it would exert on a positive test charge. The electric field is radially outward from a positive charge and radially in toward a negative point charge.

ELECTRIC CURRENT:

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

1. since the electrons are negatively charged, and unlike charges attracts so that it will move to the direction of the positive terminal of the electric field.

Therefore, the electron will be acted upon by a force that will be directed opposite to the electric field i.e force is downward direction.

For newton second law, force x mass x acceleration

F x qe f=m x a

F=ma e=ma since the electric field is uniform, therefore the magnitude and direction of the electric field will be constant. The force will be constant and the magnitude of the acceleration will be constant while the direction of acceleration will be downward.