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DEPARTMENT: Petroleum engineering

MATRIC NO: 19/ENG07/002

COURSE: Basic electricity

ASSIGNMENT

1. Using the concept of Newtons 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 upward.

   Solution: The attractive or repulsive interactions between any charged object in an electric force like any force, its effects upon objects is described by Newtons laws of motion. The electric force f elect. joins the long list of other forces that can act upon objects. Newtons law of other forces that can/act upon objects. Newtons laws are applied to analyze the motion (or lack of motion) of objects under the influence of such a force or combination of forces. The analysis usually begins with the construction of a free body diagram in which the type and direction of the individual forces are represented by vector arrows and labelled according to type. The magnitude of the forces is then added as vectors in other to determine the resultant sum known as the net force. The net force can then be used to determine the acceleration of the object.

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

Solution

- **Electric field: The electric field is defined mathematically as a vector field that associates to each point in space the electrostatic or coulomb force per unit of charge exerted on an infinitesimal positive test charge at rest at the point or it is defined as electric force per unit charge. The direction of the field is taken to be the direction of the force it would exert on a positive test charge. The electric field is radically in forward a negative point charge SI unit for volt per meter (v/m). behavior under coordination formation is known as vector.**

- **Magnetic field: The direction of the magnetic force on a moving charge is perpendicular to the plane formed by V and B and follows right hand rule. 1(RHR.1) as shown the magnitude of the forces is proportional to Q, V, B and sine of the angle between V and B.**

- **Electric current: It is defined as the rate of flow of negative charges of the conductor. In other words, the continuous flow of electrons in an electric circuit is called electric current. The conducting materials consists of large number of free electrons which move from one atom to the other at random.**