**Exercise 1**

Ответьте на вопросы:

Do the charges neutralize each other if two equally and oppositely charged bodies are connected by a metallic conductor? **Yes, the charges neutralize each other if two equally and oppositely charged bodies are connected by a metallic conductor**

Is this neutralization accomplished by means of a flow of electrons or by any other mean? **Yes,** **this neutralization is accomplished by means of a flow of electrons or by any other mean**

In which direction electrons will flow in any continuous system of conductors? **In any continuous system of conductors, electrons will flow from the point of lowest potential to the point of highest potential**

How do we call the current if it flows continuously in one direction? **The current flowing in a circuit is described as direct current (DC) if it flows continuously in one direction**

How do we call the current if it flows alternately in either direction? **The current flowing in a circuit is described as alternating current (AC) if it flows alternately in either direction**

What is called as the electromotive force (emf) or voltage? **The potential difference in the circuit is called the electromotive force (emf) or voltage**

What quantity is usually given in terms of the ampere? **The rate of current flow is usually given in terms of the ampere, which corresponds to a flow of about 6 250 000 000 000 000 000 electrons per sec past any point of the circuit.**

How do we call the unit used for expressing the quantity of resistance? **The unit used for expressing the quantity of resistance is the ohm (V), which is defined as the amount of resistance that will limit the flow of current to 1 amp, in a circuit with a potential difference of 1 V.**

What relationship is known as Ohm's law? **The amount of resistance that will limit the flow of current to 1 amp, in a circuit with a potential difference of 1 V is known as Ohm's law**

What can be observed when an electric current flows through a wire? **When an electric current flows through a wire, two important effects can be observed: the temperature of the wire is raised, and a magnet or a compass needle placed near the wire will be deflected, tending to point in a direction perpendicular to the wire.**

In what unit of measurement the amount of energy expended in an electric circuit is expressed? **The amount of energy expended in an electric circuit is expressed in terms of the joule.**

**Exercise 2**

Найдите в тексте английские эквиваленты следующих слов и выражений:

Противоположено заряженный - **oppositely charged**;  металлический проводник - **metallic conductor**; заряд - **charge**;  поток электронов - **a flow of electrons**;  проводник - **conductor**;  электротехника - **electrical engineering**;  непрерывная система - **continuous system**;  низший потенциал - **lowest potential**;  высший потенциал - **highest potential**;  электрический ток - **electric current**;  ампер - **ampere**;  соответствовать - **correspond**;  сопротивление - **resistance**;  обычные условия - **normal conditions**;  закон Ома - **Ohm's law**;  уравнение - **equation**;  формулировка - **formulation**;  температура проволоки - **the temperature of the wire**;  атомы - **atoms**;  измерять – **express in terms**.

**Exercise 3**

Составьте предложения, используя данные слова и словосочетания:

Metallic conductor; connected; neutralize; charged; bodies. - **If two equally and oppositely charged bodies are connected by a metallic conductor such as a wire, the charges neutralize each other.**

Electrical; engineering; current; electrical; opposite; positive; negative. - **In some branches of electrical engineering, electric current has been conventionally assumed to flow in the opposite direction, that is, from positive to negative**

Flow; second; rate; current. - **The second is the rate of current flow**

Limits; resistance; current; necessarily. - **Under ordinary conditions all substances, conductors as well as nonconductors, offer some opposition to the flow of an electric current, and this resistance necessarily limits the current.**

Law; can be stated; equation; Ohm’s. - **Ohm's law may be stated in the form of the algebraic equation E = I x R, in which E is the electromotive force in volts, I is the current in amperes, and R is the resistance in ohms.**

Collide; atoms; electrons; conductor; energy. - **As the current flows, the electrons making up the current collide with the atoms of the conductor and give up energy, which appears in the form of heat.**

Joule; energy; amount; expended; circuit; electric. - **The amount of energy expended in an electric circuit is expressed in terms of the joule.**

Needle; compass; placed; deflected; magnet. - **When an electric current flows through a wire, two important effects can be observed: the temperature of the wire is raised, and a magnet or a compass needle placed near the wire will be deflected, tending to point in a direction perpendicular to the wire**

**Exercise 4**

Переведите на английский язык следующие предложения:

Равные и противоположено заряженные тела соединены между собой металлическим проводником. - **Equally and oppositely charged bodies are connected to each other by a metal conductor.**

Поток электронов от отрицательно заряженного тела к положительно заряженному телу. - **The flow of electrons from a negatively charged body to a positively charged body.**

Поток электронов от точки с низшим потенциалом к точке с высшим потенциалом. - **The flow of electrons from a point with a lower potential to a point with a higher potential**.

Сопротивление в сети ограничивает величину тока. - **The resistance in the network limits the amount of current.**

Закон Ома можно выразить в виде следующего алгебраического уравнения. - **Ohm's law can be expressed as the following algebraic equation.**

При прохождении электрического тока по проводу, температура провода повышается. - **When an electric current passes through a wire, the temperature of the wire rises.**

При столкновении электронов тока с атомами проводника образуется энергия. - **When the electrons of the current collide with the atoms of the conductor, energy is generated.**

Стрелка компаса расположенного рядом с проводом будет отклоняться в направлении перпендикулярном проводу. - **The compass needle located next to the wire will deviate in the direction perpendicular to the wire**.