

circuit is DC if it flows continuously in one direction. Current carries electrical energy from a power supply to the components of the circuit, where it is converted into other forms of energy. As compared to direct current, alternating current has several valuable characteristics. The most important of them is the fact that the voltage or the current may be varied to almost any desirable value by means of transformer. AC is used as a source of electric power both in industry and household.

Exercise 3. Identify (a) nouns, (b) adjectives, (c) verbal forms, (d) adverbs among the following words. Translate them.

Tightly, movement, balanced, conductor, continuously, direction, figure, usually, resistance, independently, electric, electricity, importance, make, difference, different, essential, special, specific, attached, positively, negatively, loosely, got.

Exercise 4. Form nouns of the following verbs by adding the following suffixes: -(t-ion), -ance, -ence, -ment, -or. Translate them. Move, direct, differ, resist, conduct, transform, measure, generate, connect, depend, attach, create, attract.

Exercise 5. Write derivatives of the following verbs, consult a dictionary if necessary.

Resist, conduct, use, connect, transform, convert, vary, differ, attract, insulate, contain.

Exercise 6. Give Ukrainian equivalents to the following word combinations.

The flow of charges, the current flowing in a circuit, the total resistance, the sum of resistances of individual components, to be used as a source of electric power, a specific number of, to be caused by, loosely attached, atoms of matter, created electric current, to be converted into other forms of energy, to flow alternately in each direction, electric energy.

Exercise 7. Fill in the gaps with prepositions given below.

(Through, to, of, in, on, by, off, from, among)

1. An electric current is the flow ... charges ... a conducting circuit caused ... a potential difference.

Electrons can be made to move from one atom to another. When those electrons move between them a current of electricity is created. Scientists and engineers have learned many ways to move electrons off atoms.

Since all atoms want to be balanced, the atom that has been 'unbalanced' will look for electron to fill the place of the missing one. We say that this unbalanced atom has a 'positive charge' (+) because it has too many protons.

Since it got kicked off, the free electron moves around waiting for a balanced atom. The free electron charge is negative, and has no proton to balance it out, so that it has a 'negative charge' (-).

So what do positive and negative charges have to do with electricity?

Scientists and engineers have found several ways to create large numbers of positive atoms and free negative electrons. Since positive atoms want negative electrons so they can be balanced, they have a strong attraction for the electrons. The electrons also want to be part of a balanced atom, so they have a strong attraction to the positive atoms. So, the positive attracts the negative to balance out.

The more positive atoms or negative electrons you have, the stronger the attraction for the other. Since we have both positive and negative charged groups attracted to each other, we call the total attraction 'charge'.

When electrons move among the atoms of matter, a current of electricity is created. This is what happens in a piece of wire. The electrons are passed from atom to atom, creating an electric current from one end to the other.

Electricity is conducted through some things better than in others. Its resistance measures how well something conducts electricity. Some things hold their electrons very tightly. Electrons do not move through them very well. These things are called insulators. Rubber, plastic, cloth, glass and dry air are good insulators and have very high resistance. Other materials have some loosely held electrons, which move through them very easily. These are called conductors. Most metals - like copper, aluminum or steel - are good conductors.

In metallic conductors the charges are electrons. In liquids and gases the charges are ions. There are two types of electric current: direct current (DC) and alternating current (AC). The current flowing in a cir-