Physical base of electricity

1. Read the text and answer the questions.

WHAT IS ELECTRICITY?

Electricity is a form of energy. Electricity is a flow of electrons. All matter is made of atoms, and an atom has a center, called a nucleus. The nucleus contains positive charges called protons and uncharged called neutrons. The nucleus of atom is surrounded by negatively charged particles called electrons. The negative charge of electron is equal to the positive charge of a proton, and the number of electrons in an atom is usually equal to the number of protons. When the balancing force between protons and electrons is upset by an outside force, an atom may gain or lose an electron. When electrons are "lost" from an atom, the free movement of these electrons constitutes an electric current.

Electricity is a basic part of nature and it is one of our most widely used forms of energy. We get electricity, which is a secondary energy source, from the conversion of other sources of energy, like coal, natural gas, oil, nuclear power and other natural sources, which are called primary energy.

In the mid – 1800s, everyone's life changed with the inventing of the electric light bulb. Prior to 1879, electricity had been used in arc lights for outdoor lighting. The light bulb's invention used electricity to bring indoor lighting to our homes.

Despite its great importance in our daily lives, most of us rarely stop to think what life would be like without electricity. Yet, like air and water, we tend to take electricity for granted. Everyday we use electricity to do many functions for us – from lighting and heating/ cooling our homes, to being the power source for televisions and computers. Electricity is a controllable form used in the applications of heat, light and power.

Questions:

1. What we call electricity?
2. From what all matter is made of?
3. What is the construction of the nucleus?
4. What is named an electron?
5. What is named a proton?
6. The negative charge of electron is equal to the positive charge of a proton, isn't it?
7. Is the number of protons equal to the number of electrons?
8. When does an atom gain or lose an electron?
9. What we name an electric current?
10. Is electricity one of our most widely used forms of energy?
11. How we get electricity?
12. What we call primary energy?
13. When the electric light bulb was invented?
14. What kind of electric bulb had been used prior to 1879?
15. What kinds of electric bulb we use indoor of our home?
16. What electricity means in our life?
17. What kinds of sources of energy do you know?

2. Find the English equivalents to the Ukrainian ones.

1. форма енергії; 2. позитивний заряд; 3. ядро атома; 4. негативно заряджені частинки; 5. позитивний заряд протона; 6. зовнішня сила; 7. вільний рух електронів; 8. одна з найбільш поширених вживаних форм природи; 9. інші джерела енергії, 10. атомна енергія; 11. природні джерела; 12. винайдення електролампочки; 13. зовнішнє освітлення; 14. приносити освітлення в середину наших домівок; 15. нагрівання/ охолодження наших домівок; 16. контрольована форма.

3. Translate the sentences into English.

1. Електрика це форма енергії, чи не так? 2. Електрика це потік електронів, а не протонів. 3. Кожен атом має центр, який називається ядром. 4. Ядро має позитивно заряджені протони і негативно заряджені електрони. 5. Вільний рух електронів встановлює електричний струм. 6. Ми отримуємо електрику від перетворення носіїв енергії таких як вугілля, природний газ, нафта.7. Електричну лампочку було винайдено в середині 1800 років. 8. Щодня ми використовуємо електрику для освітлення, обігріву і охолодження наших осель.