**Тема:**  «Батареи гальванических элементов, аккумуляторные батареи»

**Цель:** Повторить грамматический материал , продолжить изучать лексическую тему «электричество, свойства электричества».

**Задачи:** Отработать навык работы (в т.ч. перевода) с профессиональной лексикой по теме «электричество», повторить тематический материал, актуализировать имеющиеся знания.

**Специальность:** 13.02.09 Монтаж эксплуатации линий электропередачи, 13.02.11 Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям)

1. **Translate the glossary**
2. **read the text**
3. **do the tasks**

**Unadulterated batteries\***

**An electric battery** is a device for producing an emf by chemical means. When such a source of emf is connected to a closed electric circuit, chemical energy is transformed into electrical energy. An emf will be produced by chemical means whenever two dissimilar solid conductors are immersed in a conducting liquid. The solid conductors are called electrodes, and the conducting liquid is called the electrolyte. Such a combination of chemical resulting in the production of an emf is called a voltaic cell. A battery may consist of a single cell or a combination of cells. The voltage of a cell depends upon the material of the electrodes and the electrolyte and is independent of the dimensions of the cell.

The current and power capacity of a cell are, however, directly dependent on the dimensions of the cell and the weight of active material in the electrodes. Although there are an infinite number of different combinations of electrodes and electrolytes which will produce a voltaic cell, there are only a limited number of combinations which are practicable.

**Classifications of batteries.** For practical purposes, batteries may be classified as primary and secondary. A *primary battery* is used only for discharge (conversion of chemical energy into electrical energy). As such a battery is discharged, the material of one of the electrodes goes into solution in the electrolyte. The electrode is thus consumed, and the character of the electrolyte is altered so that with primary batteries it is necessary to renew from time to time both the electrode which goes into solution and the electrolyte. A *secondary battery* is alternately discharged and charged. As a battery discharges, the electrodes and electrolyte undergo chemical changes. After a secondary battery has been discharged, the electrodes and electrolyte can be restored to their original charged condition by passing a current through the battery in the reverse direction from that of discharge. In charging a battery, electrical energy is transformed into chemical energy. *Secondary batteries* are generally called *storage batteries*.

1. **Find equivalents for the followings:**
2. Устройство для выработки электродвижущей силы
3. Проводящая жидкость
4. Количество комбинаций
5. Необходимо менять
6. Путем пропускания электрического тока
7. Перезаряжаемые батарейки
8. **Give a proper translation for the following text:**

**The Fuller cell is set up as follows:** Mix the electrolyte by adding 6 oz (0.17 kg) of potassium bichromate and 17 oz (0.48 kg) of sulfuric acid to 56 oz (1.59 kg) of soft water; pour this mixture into a suitable glass jar. Into a suitable porous cup put 1 teaspoonful of mercury and two teaspoonfuls of salt; place the cup and a zinc electrode in the glass jar, and fill to within 2 in (50.8 mm) of the top with soft water. Put on the cover, insert a carbon electrode, and the cell is ready for use. The color of the solution is orange when in working order. The resistance varies from 0.5 to 4 Ohms, depending upon the condition and dimensions of the porous cup and upon the concentration of the solution.

1. **Answer the questions, use the text below:**
2. What are electrodes?
3. What does the battery consist of?
4. Give two types of batteries.
5. How can you charge electrodes and electrolyte in a storage battery?
6. **Fill in the gaps, use your glossary:**
7. What is an “electrolyte”? It is a special \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in batteries
8. Your result \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the baseline data
9. The solid conductor is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. My son has got a radio-controlled helicopter. I think I must buy some\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or our family budget will collapse.
11. This converter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_220V and delivers 3V. The question is what has happened to other Volts?
12. How else can you call the battery? It is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. The electric current \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the voltage changing with the help of a bridge rectifier
14. If you give a current through the battery in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_your battery will charge
15. **Give synonyms to the followings:**
16. Undergo
17. Voltaic cell
18. Liquid
19. Consume
20. Storage (batteries)
21. **Translate into Russian:**
22. Одноразовые батарейки вредны для окружающей среды.
23. Что это за штучки в батарейке? – Это электроды.
24. Перезаряжаемые батарейки стоят дороже обычных, но они более экологичны.
25. Человечество не перестанет потреблять энергию. Мы зависим от электричества.
26. На этом рисунке изображена замкнутая электрическая цепь.
27. Батарея содержит электроды и электролит.