

**МІНІСТЕРСТВО ОСВІТИ ТА НАУКИ УКРАЇНИ
ВІННИЦЬКИЙ НАЦІОНАЛЬНИЙ АГРАРНИЙ УНІВЕРСИТЕТ
ЛАДИЖИНСЬКИЙ КОЛЕДЖ**

**РОБОЧИЙ ЗОШИТ З ІНОЗЕМНОЇ МОВИ ЗА ПРОФЕСІЙНИМ
СПРЯМУВАННЯМ ДЛЯ СТУДЕНТІВ СПЕЦІАЛЬНОСТІ
«МОНТАЖ, ОБСЛУГОВУВАННЯ ТА РЕМОНТ
ЕЛЕКТРОТЕХНІЧНИХ УСТАНОВОК В АГРОПРОМИСЛОВОМУ
КОМПЛЕКСІ»**

2018

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ВСТУП

Практичне оволодіння іноземною мовою є життєвою необхідністю для майбутнього спеціаліста і значною мірою визначає його особистісний та фаховий рівень.

Знання іноземної мови – це шлях до того, щоб стати конкурентоспроможним, почуватися впевнено під час ділових зустрічей і переговорів, це додаткова можливість зробити успішну кар'єру.

В сучасному світі розвиток міжкультурної комунікації, зміна соціально-політичної ситуації у країні, розвиток міжнародних ділових контактів, створення багаточисельних спільних підприємств, розширення міжнародного співробітництва в різних сферах діяльності ставлять завдання володіння іноземною мовою як засобом міжкультурного спілкування спеціалістів будь-якого профілю на основі характерних особливостей професії або спеціальності.

Робочий зошит з англійської мови за професійним спрямуванням для студентів вищих навчальних закладів I-II рівнів акредитації, які навчаються за спеціальністю 5.10010102 «Монтаж, обслуговування та ремонт електротехнічних установок в агропромисловому комплексі» має на меті допомогти студентам оволодіти фаховою термінологією англійською мовою в даній галузі, набути навичок перекладу та реферування наукової літератури за фахом, сформувати навички практичного оволодіння іноземною мовою в різних видах мовленнєвої діяльності в сфері тематики, передбаченої освітньо-професійною та робочою програмою напряму підготовки 1001 «техніка та енергетика агропромислового виробництва», спеціальності 5.10010102 «Монтаж, обслуговування та ремонт електротехнічних установок в агропромисловому комплексі».

Даний робочий зошит містить 14 фахових тем, кожна з яких має фахові тексти та розроблені до них різноманітні завдання, які дають можливість різнобічно опрацьовувати лексичні одиниці. Це допоможе у формуванні необхідних комунікативних компетенцій студентів, які зацікавлені в поглибленому вивченні як спеціальності, так і практичному оволодінні англійською мовою.

Lesson 1

MY FUTURE PROFESSION



1. Read the letter and complete the following exercises.

Hello, John

How are you getting on? I really hope you are fine. Do you remember asking me about my future profession? Today I have some free time and will answer all your questions.

You know I am interested in electrical experiments, don't you? So, I am a student of Ladyzhyn College of VNAU and I study at the department of electrification and automation on farms.

Centuries ago there were only a few jobs: people were farmers, bakers, butchers or carpenters. Today there are thousands of different kinds of jobs, and new ones are constantly appearing. No wonder that it is not an easy thing to make the right choice. I also want to say that the profession should be chosen according to the character and abilities of the person. As for me my favourite subjects are mathematics and physics. So I made my chose long ago. I want to be an electrician. To my mind it is very useful work. Electricity has become highly important in our modern world. It has made our work easier and our life comfortable. We cannot imagine modern civilization without the electric current, without electric lamps, vacuum cleaners, refrigerators washing machines and other electrically operated devices that are widely used today.









I think that the profession of electrician can give many opportunities because everything in our life is connected with electricity. Electricians are preparing on specialty 5.100101102 Power engineering, electrical engineering and electromechanics with the qualification "technician-electrician". Duration of training usually is 3 years and 10 months on the basic 9 grades and 2 years and 10 months – based on full secondary education.

Well, I hope I have answered all your questions. By the way, what are the peculiarities of your future profession? Write me soon.

Best wishes, Roman



2. Write the word under the pictures.

farmer	driver	tractor operator	teacher
mechanic	doctor	baker	carpenter
			
			



3. Circle (true) or (false) for these sentences.

- | | | |
|---|------|-------|
| 1. John is a student of Ladyzhyn College of VNAU. | true | false |
| 2. Roman wants to be a carpenter. | true | false |
| 3. Roman's hobby is connected with electrical experiments. | true | false |
| 4. Modern civilization is possible without the electric current | true | false |
| 5. Everything in our life is connected with electricity. | true | false |
| 6. Roman's favourite subjects are mathematics and physics. | true | false |

?

4. Answer the following questions.

1. What jobs were centuries ago?

2. How should the profession be chosen?

3. How long is the duration of training?

4. What electrically operated devices are widely used today?

5. What qualification do the students get?



5. Translate the following sentences into English

1. Я мрію стати електриком.

2. На мою думку це дуже корисна робота.

3. Ми не можемо уявити сучасну цивілізацію без електричного струму.

4. Електрика є високорозвиненою галуззю в сучасному світі.

5. Все в нашому житті пов'язано з електрикою



6. Put the words into the correct order to make the sentences.

1. I, a future, am, electrician

2. The role, is, invaluable, of a electrician

3. I, in, electrical, interested, experiments, am

4. Electricity, made, has, work ,comfortable, easier, and, our, life, our

5. New, are, professions, appearing, constantly



7. Make up all types of questions to the sentence:

A mechanical technician treats technique.



8. Speak on the topic “My Future Profession” using the following plan:

- The role of an electrician;
- The electrically operated devices;
- College education.



A Student's Page

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Lesson 2

HISTORY OF ELECTRICITY



1. Read the text.



History shows us that at least 2.500 years ago the Greeks were already familiar with the strange force which is known today as electricity. Three phenomena made up all of man's knowledge of electrical effects. The first phenomenon under consideration was the familiar lighting flash – a dangerous power, as it seemed to him, which could both kill people and burn or destroy their houses. The second manifestation of electricity he was more or less familiar with the following: he sometimes found in the earth a strange yellow stone which looked like glass. On being rubbed, that strange yellow stone, that is to say amber, obtained the ability of attracting light objects of a small size. The third phenomenon was connected with the so-called electric fish which possessed the property of giving more or less strong electric shocks which could be obtained by a person coming into contact with the electric fish.

Nobody knew that the above phenomena were due to electricity. People could not neither understand their observations nor find any practical applications for them. Many scientists investigated electric phenomena, and during the 19-th century many discoveries about the nature of electricity, and of magnetism, which is closely related to electricity, were made. It was found that if a sealing-wax rod is rubbed with a woolen cloth, and a rod of glass is rubbed with a silken cloth an electric spark will pass between the sealing-wax rod and the glass rod when they are brought near one another. Moreover, it was found that a force of attraction operates between them. An electrified sealing wax is repelled, however, by a wax rod, and electrified glass rod is repelled, by a similar glass rod.

The study of electricity may be divided into three classes or branches: magnetism, electrostatics and electrodynamics. Magnetism is the property of the molecules of iron and certain other substances through which they store energy in a field of force because of the arranged movement of the electron in their atoms.

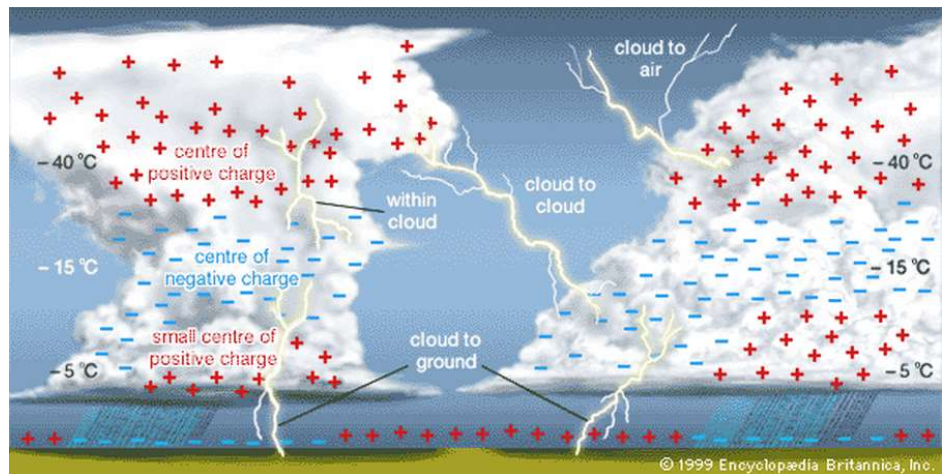
Electrostatics is the study of electricity at rest, or static electricity. Examples of this type of electricity are charges on condenser plates. Rubbing glass with silk produces static electricity. Electrodynamics is the study of electricity in motion, or dynamic electricity.

The electricity which flows through wires for light and power purposes is a good example of the latter type of electricity.

LIGHTNING

The lightning flash is certainly the earliest manifestation of electricity known to man, although for a long time nobody knew that the lightning and atmospheric electricity are one and the same thing. Indeed, for thousands of years people saw long sparks falling from the dark sky and heard thunder. They knew that these sparks could kill people or strike their houses and destroy them. Trying to understand that dangerous phenomenon, they imagined things and invented numerous stories. However, times fly. Now everybody knows that lightning is a very great flash of light resulting from a discharge of atmospheric electricity.

During thunderstorms, large amount of electrical charge separation takes place in the clouds. As a result, some regions of the cloud have overall positive charge, while others have overall negative charge. When this separation becomes sufficient, the air ionizes and becomes conducting. This results in a flash of lightning. Most lightnings occur between the two parts of the same cloud, but it can take place between two clouds or between a cloud and earth also. In that case the lightning flows throughout the air to the earth and strikes the



sharpest object on the earth. Sometimes these flashes can be as long as 150 km.

It is a well-known fact that lightning is a very dangerous power and people must protect their houses from thunderstorms. Coming down from a charged cloud to the earth, lightning usually strikes the nearest conductor. Therefore, it is necessary to provide an easy path along which electrons are conducted to the earth. Many years ago scientist Benjamin Franklin invented the lightning conductor to protect houses.

The lightning conductor, familiar to everybody at present, is a metal device protecting buildings from strokes of lightning by conducting the electrical charges to the earth.

It is usually made of copper or aluminum. Lightning gets attached to the lightning conductor because the lightning conductor is the easiest path from the sky to the ground.

When a lightning strikes the building, it will preferentially strike the rod and be conducted harmlessly to the ground through the wire, instead of passing through the building. The rod discharges the high voltage current into the earth and in this way, the buildings are protected from being electrocuted.



2. Answer the questions.

1. How many phenomena made up all of man's knowledge of electrical effects? What are they? _____

2. What is the difference between electricity at rest and electricity in motion? _____

3. What is the earliest manifestation of electricity? _____

4. What is lightning? _____

5. What is lightning conductor? _____

6. Why is lightning very dangerous power? _____

7. What types of lightning are there? _____



3. Match the words

- | | |
|------------------------|----------------|
| 1. to charge | a) громовідвід |
| 2. lightning conductor | b) проводити |
| 3. to conduct | c) доріжка |
| 4. path | d) руйнувати |
| 5. to solve | e) заряджати |
| 6. to destroy | f) вирішувати |



4. Translate the following sentences into Ukrainian

1. They knew that these sparks could kill people or strike their houses and destroy them.

2. Lightning is a very great flash of light resulting from a discharge of atmospheric electricity.

3. It is a well known fact that lightning is a very dangerous power and people must protect their houses from thunderstorms.

4. Trying to understand that dangerous phenomenon, they imagined things and invented numerous stories.

5. Coming down from a charged cloud to the earth, lightning usually strikes the nearest conductor

6. Many years ago scientist Benjamin Franklin invented the lightning conductor to protect houses. _____



5. Mark true or false

1. The electric current is certainly the earliest manifestation of electricity known to man.
2. Lightning usually strikes the nearest conductor.
3. The lightning conductor, familiar to everybody at present, is a rubber device protecting buildings from strokes of lightning.
4. Lightning is a safe power.
5. The lightning conductor is usually made of copper or aluminium.



6. Speak on the topic “Lightning” using the following plan:

- Types of Lightning
- Lightning conductor
- Lightning Safety Tips





A Student's Page

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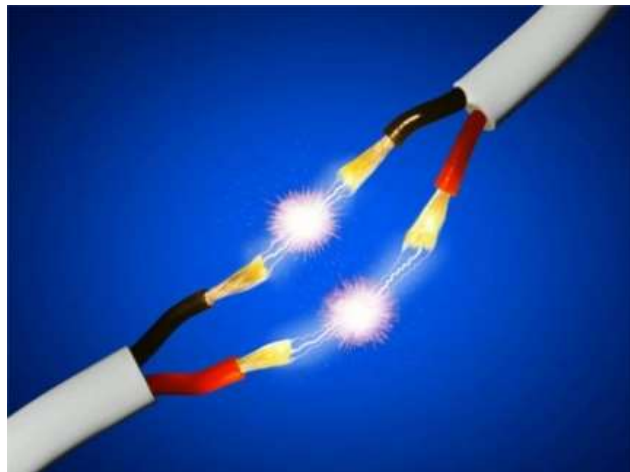
Lesson 3

THE CONCEPT OF ELECTRIC CURRENT



1. Read the text.

In the beginning of the 17-th century Sir William Gilbert discovered that many substances could be electrified by friction. In 1756 the great Russian scientist M.V.Lomonosov was the first to make theoretical analysis of electrical phenomena. According to the modern theory all matter is composed of atoms or tiny particles.



Let us turn our attention now to the electric current itself. An electric current is described as a flow of electric charges along conductor. The current which flows along wires consists of moving electrons. What can we say about the electron? We know the electron to be a minute particle having an electric charge. We also know that the charge is negative. As these minute charges travel along a wire, that wire is said to carry an electric current.

When an electric charge is at rest it is spoken of as static electricity. The famous French scientist Ampere (after whom the unit of current was named) determined the difference between the current and the static charges.

An electric current which flows in the same direction through a conductor is called a direct current (d.c.). The simplest source of power for the direct current is a battery, for a battery pushes the electrons in the same direction all the time (i.e., from the negatively charged terminal to the positively charged terminal).

An alternating current (a.c.) flows in one direction and in the other. It finds wide application for lighting, heating, industrial, and some other purposes.

As a rule, metals are good conductors of electricity. The poorest of conductor are commonly called insulators. The substances that are neither good conductors nor good insulators are called semi-conductors.

ELECTRIC CURRENT SERVES US IN A THOUSAND WAYS

The electric current was born in the year 1800 when Volta constructed the first source of continuous current. Since that time numerous scientists and inventors have greatly contributed to its development and practical application.



As a result, we cannot imagine modern civilization without the electric current. We can't imagine how people could do without electric lamps, vacuum cleaners, refrigerators, washing machines and other electrically operated devices that are widely used today.

In fact, telephones, lifts, electric trams and trains, radio and television have been made possible only owing to the electric current.

From the moment when somebody gets up in the morning until he goes to bed at night, he widely uses electric energy.

During the day people also use some electrical devices working in the laboratory, making use of the telephone, the lift, the tram and so on. As for the evening, when people study or read by an electric lamp, watch television, go to the theatre or cinema, they certainly use electricity.

Besides everyday life, electric energy finds its most important use in industry. Take, for example, the electric motor transforming electric energy into mechanical energy. It finds wide application at every mill and factory. As for the electric crane, it can easily lift objects weighing hundreds of tons.

A good example which is illustrating an important industrial use of the electric current is the electrically heated furnace. Great masses of metal melted in such furnaces flow like water. Speaking of the melted metals, we might mention one more device using electricity, that is the electric pyrometer. The temperature of hot flowing metals can be easily measured owing to the electric pyrometer.

These are only some of the various industrial applications of the electric current serving us in a thousand ways.



2. Answer the questions

1. When does a wire carry on electric current? _____

2. After whom was the unit of current named? _____

3. What is a direct current? _____

4. What is an alternating current? _____

5. Do you use electrical devices? What devices? _____

6. Does the electric current play an important part in our life? Why? _____



3. Translate the following word combinations into Ukrainian.

1. numerous scientists and inventors

2. have greatly contributed to its development and practical application

3. to do without _____
4. to play an important part _____
5. to make use of _____
6. are more familiar with _____
7. transforming electric energy into mechanical energy

8. industrial use of the electric current

9. flow like water _____
10. speaking of the melted metals _____
11. device using electricity _____



5. Match a word to the following definition.

- | | |
|-----------------------|---|
| 1. D.c. | a) a flow of electric charges along conductor; |
| 2. A.c. | b) neither good conductors nor good insulators; |
| 3. Static electricity | c) an electric charge is at rest |
| 4. Electric current | d) current flows in one direction and in the other |
| 5. Semi-conductor | e) The poorest of conductor |
| 6. Insulator | f) An electric current which flows in the same direction. |



6. Translate the following sentences into Ukrainian

- The current which flows along wires consists of moving electrons. _____

- As these minute charges travel along a wire, that wire is said to carry an electric current.

- The current under consideration flows first in one direction and then in the opposite one _____

- The substances that are neither good conductors nor good insulators are called semi-conductors. _____

- Since that time numerous scientists and inventors have greatly contributed to its development and practical application. _____

- During the day people also use some electrical devices working in the laboratory, making use of the telephone, the lift, the tram and so on.



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Lesson 4

ENERGY



1. Read the text Energy is defined as “the capacity to do work”, and is found in many forms, including heat, light, sound, electricity, coal, oil and gasoline. These forms of energy provide us with the capacity to light our homes, cook our food, travel by car, train, boat or plane, operate factories, and do many other things that we do regularly. One might also mention the two kinds of mechanical energy – potential energy being the energy of position while kinetic energy is the energy of motion.

It is well known that one form of energy can be change into another. A waterfall may serve as an example. Water falling from its raised position, energy changes from potential to kinetic energy. The energy of falling water is generally used to turn the turbines of hydroelectric stations. The turbines in their turn drive the electric generators, the later producing electric energy. Thus, the mechanical energy of falling water is turned into electric energy. The electric energy, in its turn, may be transformed into any other necessary form.

When an object loses its potential energy, that energy is turned into kinetic energy. Thus, in the above-mentioned example when water is falling from its raised position, it certainly loses its potential energy, that energy changing into kinetic energy.

Every year we need more and more energy. We need it to do a lot of useful things that are done by electricity. However the energy sources of the world are decreasing while the energy needs of the world are increasing. As a result, it is necessary to find new sources of energy.

First and foremost, the sun is the primary energy source. Using semiconductors, scientists, for example, have transformed solar energy into electric one.

Coal, oil and natural gas are the most common sources of energy in Ukraine. Hydropower is in many ways a very positive energy source. Unlike oil, coal, natural gas and other fossil fuels, hydropower is renewable like solar and wind power.



2. Answer the questions.

1. What is energy? _____

2. What is potential energy? _____

3. What is kinetic energy? _____

4. Why do we need more and more energy every year? _____

5. Why is it necessary to find new sources of energy? _____

6. What plants is electricity generated at? _____



3. Translate into Ukrainian

- Kinetic energy _____
- Potential energy _____
- Source of energy _____
- Nuclear power plant _____
- Solar energy _____



4. Find in the text the English equivalents for:

- турбіни гідроелектростанції _____
- в свою чергу _____
- джерела енергії зменшуються _____
- потреби в енергії збільшуються _____
- первинне джерело енергії _____



5. Translate the following sentences into Ukrainian.

1. One might also mention the two kinds of mechanical energy – potential energy being the energy of position while kinetic energy is the energy of motion. _____

2. It is well known that one form of energy can be change into another. _____

3. Water falling from its raised position, energy changes from potential to kinetic energy. The energy of falling water is generally used to turn the turbines of hydroelectric stations. The turbines in their turn drive the electric generators, the later producing electric energy. Thus, the mechanical energy of falling water is turned into electric energy. The electric energy, in its turn, may be transformed into any other necessary form. _____

4. it is necessary to find new sources of energy _____



6. Make up all types of questions to the sentence:

The turbines drive the electric generators.

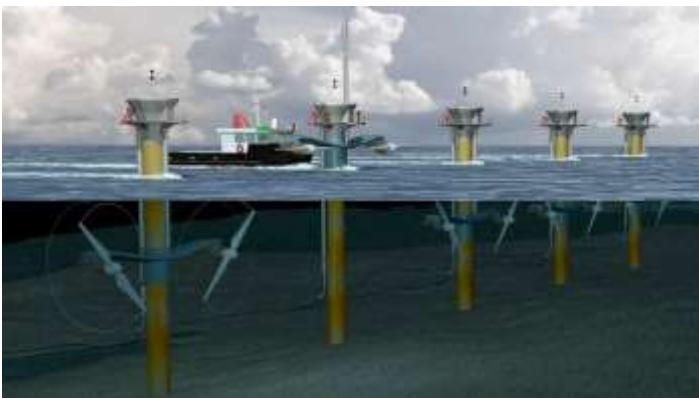


7. Read the text and fill in the table

Hydro electricity is another term for power generated by harnessing the power of moving water. Not necessarily falling water, just moving water. Power is generated or "manufactured" in large power generating stations using the same basic principle as a small grist mill yet on a much larger and vastly improved scale for better efficiency. These electrical generators are attached to massive turbine devices which spin at great speeds as a result of water rushing through them. These power station turbines are much more efficient at extracting the kinetic energy from the moving water and converting that energy into power through these generators.



In a **nuclear power plant**, nuclear reactions create heat to heat water, which turns into steam, which goes through a turbine, which spins...turning the copper armature inside the generator and generating an electric current.



There are a lot of energy in waves on the sea. But it is not easy to get it. A **wave power station** needs to be able to stand really rough weather, and yet still be able to generate power from small waves. This source of energy is renewable – the waves will cause whether we use them or not.



Solar electricity is created by using Photovoltaic (PV) technology by converting solar energy into solar electricity from sunlight. Photovoltaic systems use sunlight to power ordinary electrical equipment, for example, household appliances, computers

and lighting. The photovoltaic (PV) process converts free solar energy – the most abundant energy source on the planet – directly into solar power. Solar electricity is used for space heating and hot water production.

In a wind turbine, the wind pushes against the turbine blades, causing the rotor to spin...turning the copper armature inside the generator and generating an electric current.



A geothermal power plant is pretty much a steam power plant, since what comes out of the earth is steam. Rainwater soaks into the ground and goes down, far enough until it reaches a region which is really hot (in Hawaii, that's about

6000 feet). A well is drilled, the steam comes out, goes through a heat exchanger, and spins a turbine turning the copper wire (armature) inside the generator and generating an electric current. By the time the steam has gone through the heat exchanger, it has cooled off and become warm water. It is then re-injected into the ground.

PLANTS	ADVANTAGES	DISADVANTAGES
Hydroelectric power plant		
Nuclear power plant		
Tidal power plant		
Solar power plant		
Wind power plant		
Geothermal power station		



10. Speak on the topic "Energy" using the following plan:

- Types of energy
- Hydro Electric Station
- Nuclear power plant
- Solar electricity
- Wind power
- Geothermal power
- Wave power station



A Student's Page

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Lesson 5

MAGNETISM



1. Read the text.

In studying the electric current, we observe the following relation between magnetism and the electric current: on the one hand magnetism is produced by the current and on the other hand the current is produced from magnetism.

Magnetism is mentioned in the oldest writings of man. Romans, for example, knew that an object looking like a small dark stone had the property of attracting iron. However, nobody knew who discovered magnetism or where and when the discovery was made.

One story tells us of a man called Magnus whose iron staff was pulled to a stone and held there. He had great difficulty in pulling his staff away. Magnus carried the stone away with him in order to demonstrate its attracting ability among his friends. This unfamiliar substance was called Magnus after its discoverer, this name having come down to us as "Magnet".

According to another story, a great mountain by the sea possessed so much magnetism that all passing ship were destroyed because all their iron parts fell out. They were pulled out because of the magnetic force of that mountain.

The earliest practical application of magnetism was connected with the use of a simple compass consisting of one small magnet pointing north and south.

A great step forward in the scientific study of magnetism was made by Gilbert, the well-known English physicist (1540-1603). He carried out various important experiments on electricity and magnetism and wrote a book where he put together all that was known about magnetism. He proved that the earth itself was a great magnet.

At present, even a schoolboy is quite familiar with the fact that in magnetic materials, such as iron and steel, the molecules themselves are minute magnets, each of them giving a north pole and a south pole. When iron and steel are magnetized, the molecules arrange themselves in a new orderly way instead of the disarrangement in which they neutralize each other.

Dividing a bar magnet into two parts, one finds that each of the two parts is a

magnet having both a north pole and a south pole. Thus, we obtain two magnets of a smaller size instead of having a single one of a larger size.

On placing an unmagnified iron bar near a strong magnet, we magnetize it. Our iron bar has been magnetized by the strong magnet without rubbing it.

Being heated a magnet loses some or all of its magnetism. A magnet being broken in two, each piece becomes a magnet with its own pair of poles. This subdivision could be carried on until we were down to the smallest particle of iron, a molecule. Conversely, two identical bar magnets being brought end to end with opposite poles in close contact, the poles touching seem to disappear and we have but two poles at the extreme ends. A tube of iron filings may be magnetized by stroking it with a magnet in the usual way. The filings being shaken, the magnetism disappears.



2. Circle true or false for these sentences

- | | | |
|--|------|-------|
| 1. Magnetism is mentioned in the oldest writings of man. | true | false |
| 2. A great step forward in the scientific study of magnetism was made by Magnus, the well-known English physicist (1540-1603). | true | false |
| 3. The earliest practical application of magnetism was connected with the use of a simple compass consisting of one small magnet pointing east and west. | true | false |
| 4. Our iron bar has been magnetized by the strong magnet without rubbing it. | | |
| | true | false |
| 5. Being heated a magnet loses some or all of its magnetism. | true | false |
| 6. The filings being shaken, the magnetism appears. | true | false |



3. Answer the questions

1. What is this text about? _____

2. Where is magnetism mentioned? _____

3. Who discovered magnetism? _____

4. What was the earliest practical application of magnetism connected with? _____

5. What do you know about magnetism? _____

6. What are the properties of magnet? _____

7. What happens to a magnet: a) when it is heated or broken in two? b) when two identical bar magnets are brought end to end with opposite poles in close contact? _____



4. Put the words into the correct order to make the sentences

1. is, Magnetism, the, mentioned, oldest, of, in, man, writings.

2. He, in, his, away, staff, had, pulling, great, difficulty.

3. A, great, forward, step, study, in, the, of, magnetism, scientific, made, was, Gilbert, by.

4. On, an, unmagnified, placing, an, iron, bar, a, magnet, near, strong ,it, we, magnetize.

5. Our, bar, iron, been, has, magnetized, me, by, strong, without, magnet, rubbing, it.



5. Translate the following sentences

1. Нагрівання магніту приводить до втрати ним магнетизму.

2. Якщо розділити магніт на дві частини , то кожна з них залишається магнітом , тобто кожна частина буде мати свою пару полюсів. _____

3. Найперше практичне застосування магнетизму пов'язане з використанням простого компаса, що складається з маленького магніту, який вказує на північ і південь. _____

4. One story tells us of a man called Magnus whose iron staff was pulled to a stone and held there. He had great difficulty in pulling his staff away. Magnus carried the stone away with him in order to demonstrate its attracting ability among his friends. This unfamiliar substance was called Magnus after its discoverer, this name having come down to us as "Magnet". _____

5. According to another story, a great mountain by the sea possessed so much magnetism that all passing ship were destroyed because all their iron parts fell out. They were pulled out because of the magnetic force of that mountain. _____

[illegible]

Lesson 6

CONDUCTORS AND INSULATORS



1. Read the text

All substances have some ability of conducting the electric current, however, they differ greatly in the ease with which the current can pass through them. Metals, for example, conduct electricity with ease while rubber does not allow it to flow freely. Thus, we have conductors and insulators.

What do the terms "conductors" and "insulators" mean? Substances through which electricity is easily transmitted are called conductors. Any material that strongly resists the electric current flow is known as an insulator.

Let us first turn our attention to conductance, that is the conductor's ability of passing electric charges. The four factors conductance depends on are: the size of the wire used, its length and temperature as well as the kind of material to be employed.

There is a great difference in the conducting ability of various substances. For example, almost, all metals are good electric current conductors. Nevertheless copper carries the current more freely than iron; and silver, in its turn, is a better conductor than copper.

Generally speaking, copper is the most widely used conductor. That is why the electrically operated devices in your home are connected to the wall socket by copper wires.

A material like string which resists the flow of the electric current is called an insulator.

There are many kinds of insulation used to cover the wires. The kind used depends upon the purposes the wire or cord is meant for. The insulating materials we generally use to cover the wires are rubber, asbestos, glass, plastics and others.

One of the most important insulators of all, however, is air. That is why power transmission line wires are bare wires depending on air to keep the current from leaking off.

SEMICONDUCTORS

A transistor is an active semiconductor device with three or more electrodes. By active we mean that the transistor is capable of current gain, voltage, amplification and power gain. A transistor is an electron device in which electronic conduction takes place within a semiconductor.

A semiconductor is an electric conductor with resistivity in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range.

The resistivity of semiconductors and insulators decrease rapidly with rising temperatures, while those of metals increase relatively slowly. Unlike metals and insulators, the resistivity of semiconductors depends upon the direction of current flow. The direction of easiest current flow of lowest resistivity is called the forward direction, the direction of restricted current flow or highest resistivity is known as the reverse or back direction.

Semiconductors, such as the elements germanium and silicon, possess two types of current carries, namely, negative electrons and positive holes. A hole is a mobile vacancy in the electronic valence structure of a semiconductor which acts like a positive electronic charge with a positive mass.



2. Answer the questions

1. What is discussed in the present article?

2. What is a conductor?

3. What does conductance depend upon?

4. What is the difference between a conductor and an insulator?

5. Why are power transmission line wires bare?



3. Give short answers to these questions

1. Is a semiconductor defined as an electric conductor? _____
2. Do semiconductors vary greatly in appearance? _____
3. May transistors replace vacuum tubes? _____
4. Does the state of substances depend on temperature and pressure? _____
5. Will you study electronics this year? _____
6. Have many human activities played a part in scientific inventors? _____
7. Did the ancients know anything about electricity? _____



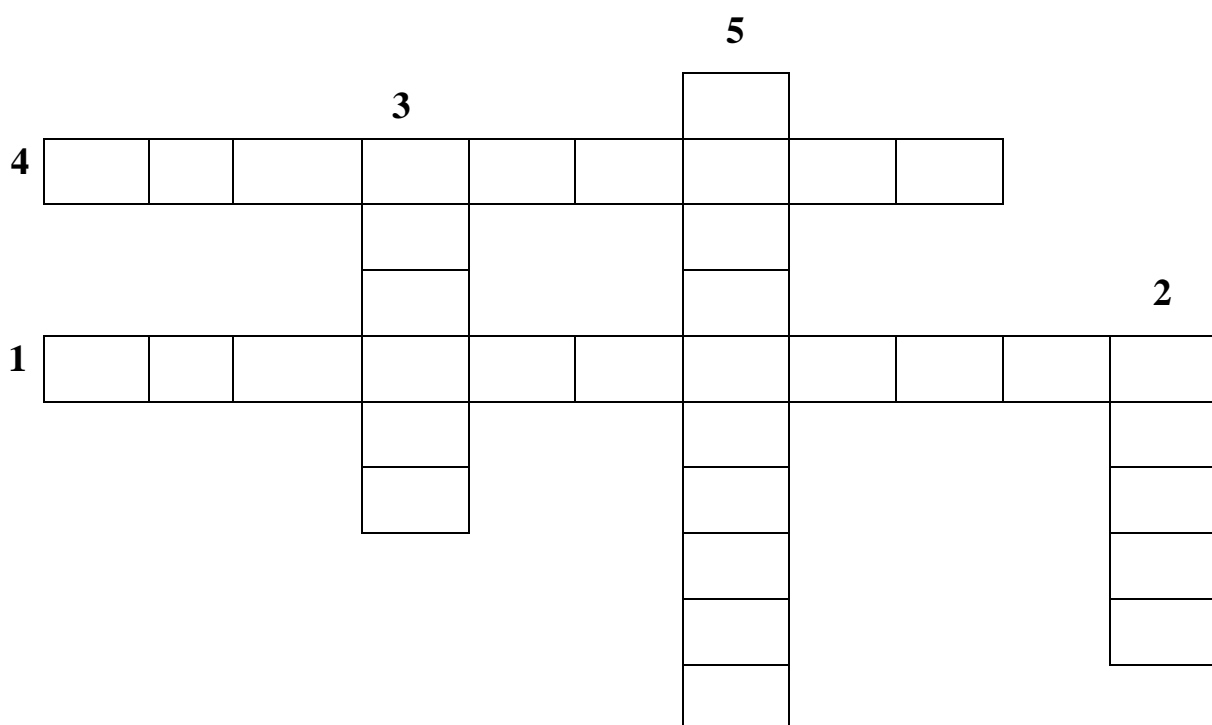
4. Match the words

- | | |
|-----------------|-------------------------------|
| 1. Wire | a. позитивний |
| 2. statement | b. також |
| 3. to cause | c. враховувати, передивлятися |
| 4. collision | d. напрям |
| 5. to control | e. очікувати, розраховувати |
| 6. feature | f. поміщати |
| 7. similar | g. шлях, контур |
| 8. direction | h. протидія |
| 9. opposition | i. особливість |
| 10. positive | j. подібний |
| 11. path | k. зіткнення |
| 12. to consider | l. керувати |
| 13. as well | m. твердження |
| 14. to expect | n. викликати, примушувати |
| 15. to place | o. провід |



5. Do a crossword

1. Current which flows in one direction and in other.
2. One of the insulators.
3. Current which flows in one direction only.
4. Substances through which electricity is easily transmitted.
5. The ability of unlike charges.



6. Match the antonyms

Insulator

Increase

Attract

Positive

Negative

Decrease

Conductor

Repel

Test

1. The substances that are neither good conductors nor good insulators are called ...

- a) conductors;
- b) insulators;
- c) semi-conductors.

2. The current which flows in one direction and in the other is called ...

- a) direct current;
- b) alternating current.

3. The current which flows in one direction only is called ...

- a) direct current;
- b) alternating current.

4. Any material that strongly resists the electric current flow is known as ...

- a) conductors;
- b) insulators;
- c) semi-conductors.

5. Substances through which electricity is easily transmitted are called ...

- a) conductors;
- b) insulators;
- c) semi-conductors.

6. The factors conductance depends on are:

- a) the size of the wire used;
- b) the kind of material to be employed;
- c) the colour of material to be employed.

7. There are many kinds of ... used to cover the wires.

- a) conductors;
- b) insulators.

1	2	3	4	5	6	7

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Lesson 7

TRANSISTORS



1. Read the text and translate the first four paragraphs into Ukrainian



A transistor is an electronic component that can be used as an amplifier, or as a switch. It is made of semiconductor material. Transistors are found in most electronic devices.

A transistor has three connectors or terminals. In the older bipolar transistor they are the collector, the emitter, and the base. The flow of charge goes in the collector, and out of the emitter, depending on the charge flowing to the base. In this way, it is possible for the base to switch on or off the flow through the transistor.

The transistor can be used for a variety of different things including amplifiers and digital switches for computer microprocessors.

Transistors have three parts, the gate, the drain, and the source (also, the wires can be called the emitter, the collector, and the base). When the source is connected to the negative terminal of the battery, and the drain to the positive terminal, no electricity will flow in the circuit (assuming you have only a lamp in series with the transistor). But when you touch the gate with the drain, electricity will flow. This is because when the gate is positively charged, the positive electrons will push other positive electrons in the transistor letting the negative electrons flow through. The transistor can also work when the gate is just positively charged, so it doesn't need to be touching the drain.

History

The transistor was not the first three terminal device. The triode served the same purpose of the transistor 50 years earlier. A triode is a type of vacuum tube. It differs from a vacuum tube diode, which has only two electrodes, by having a third electrode, called the grid between the cathode and anode. Vacuum tubes were



Three physicists were credited with the invention of the transistor in 1947: Walter H. Brattain, John Bardeen, and William Shockley who contributed the most.

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2. Answer the questions.

1. What is a transistor? _____

2. What parts does the transistor consist of? _____

3. Where can be transistor used for? _____

4. What is vacuum tube?



3. Fill in the gaps with the appropriate word or word combination given in the brackets.

1. Transistors are found in most _____ devices.

2. A transistor has three _____

3. The transistor can be used for a variety of different things including amplifiers and digital switches for _____ microprocessors.

4. The _____ was invented to solve these problems.

(connectors, computer, electronic, transistor)



4. Put the words into the correct order to make the sentences.

1. A transistor , an lectronic, that, is, can, a switch, be used, as, component, or, an amplifier, as.

2. The transistor, terminal, not, was, three, the first, device.

3. A triode, a type, is, tube, of .

4. A vacuum, an electronic, tube, is, device, used, many, in, model, older, radios.

5. The transistor, invented, to, was, problems, these, solve.



5. Speak on the topic "Transistors"



A Student's Page

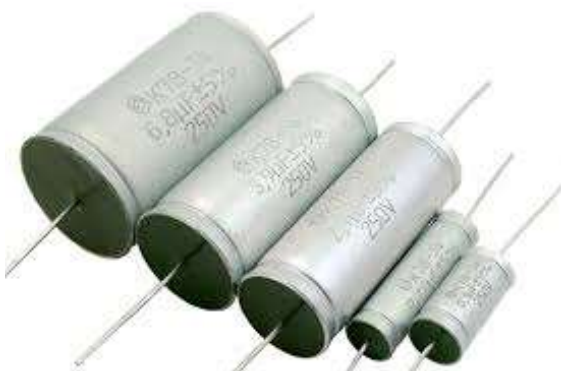
[illegible]

Lesson 8

THE CAPACITOR



1. Read the text and translate it in writing way



A capacitor is an electrical device for storing quantities of electricity. The general form of a capacitor is two conducting plates. Such plates are of relatively large area, close together and contain between them a non conducting medium called the dielectric. Common dielectrics are air, glass, oil

and waxed paper.

To increase the capacitance of a capacitor, one of the following changes can be made: first, the area of the plates may be increased: second, the plates may be put closer together; third, a more suitable dielectric may be inserted between the plates. If the plates of a capacitor are small in area and at the same time relatively far apart, the capacitance is small. If the area is large and the plates close together, the capacitance is large.

The most common capacitor is the so-called "paper capacitor". Fixed capacitors are of two general types. One is the dry capacitor which consists of metal plates separated by a dry dielectric such as mica or waxed paper, and the other is the electrolytic capacitor, whose dielectric is a chemical paste or one electrolytic.

Another type of capacitor is the variable capacitor.

The unit of capacitance is Farad.



2. Answer the questions

1. What is a capacitor? _____

2. What types of capacitors do you know? _____

3. What types are of the fixed capacitor? _____

4. What is the unit of capacitance? _____

5. Is the most common capacitor the so-called "paper capacitor"? _____

6. Another type of capacitor is the variable capacitor, isn't it? _____

True

False



3. True or False

1. A capacitor is an electrical device for storing quantities of electricity. _____
2. The general form of a capacitor is one conducting plate. _____
3. Fixed capacitors are of three general types. _____
4. The most common capacitor is the so-called "paper capacitor". _____
5. The unit of capacitance is Farad. _____



4. Put the words into the correct order to make the sentences.

1. a capacitor, an electrical device, quantities, of, electricity, is, for, storing.

2. dielectrics, air, glass, and, waxed, common, are, oil, paper.

3. common, capacitor, the, so-called, the most, is, "paper capacitor".

4. capacitors, are, two, types, fixed, of, general.

5. type, of, is, capacitor, another, capacitor, the, variable. _____



5. Translate the words into Ukrainian

Capacitor, capacitance, device, separate, conductor, charge, paper capacitor, waxed paper, variable capacitor, dry capacitor, fixed capacitor, electrolytic capacitor.



6. Complete the sentences

1. Common dielectrics are air ... _____

2. To increase the capacitance of a capacitor the area of plates may be... _____

3. If the area is large and the plates close together, the capacitance is... _____

4. The most common capacitor is ... _____

5. Fixed capacitors are of... _____



8. Fill in the gaps with the missing letters

Ca__ci__r, pl__es, ch__e, d__v__c__, c__ci__ce, se__ra__, con__or.



1. Загальна форма конденсатора – це дві провідні пластинки.

2. Такі пластинки відносно великої площі.

3. Площа пластин може бути збільшена.

4. Постійні конденсатори є двох видів.

5. Одиницею ємності є Фарад.



- A capacitor is an electrical device
- The most common capacitor



Lesson 9

RESISTORS



1. Read the text and translate the paragraphs in bold type in writing way.

A resistor is a circuit element designed to insert resistance in the circuit. A resistor may be of low value or of high value. Resistors in electronic circuits are made in a variety of sizes and shapes. They are generally classed as fixed, adjustable or variable, depending upon their construction and use.



The resistance value of small fixed resistors is sometimes indicated by a code colour. An adjustable resistor is usually of the wire-wound type with a metal collar which may be moved along the resistance wire to vary the value of the resistance placed in the circuit. In order to change the resistance, the contact band must be loosened and moved to the desired position and then tightened so that it will not slip. In this way the resistor becomes a fixed resistor.

A variable resistor is arranged so that it may be changed in value at any time by the operator of the electronic circuit. This change is usually accompanied by rotating a small adjustment knob or by turning a screw adjustment. Variable resistors are commonly known as rheostats or potentiometers.

It must be pointed out that the use of a resistor of any type must be very carefully considered. The capacity of a fixed resistor, rheostats or potentiometers must be such that it can handle the current through the circuit without damage computing the current by means of Ohm's law.



2. Answer the questions

1. What is a resistor?

2. Are the resistors classed as adjustable and variable?

3. When does resistor become a fixed resistor?

4. What resistors is sometimes indicated by a code colour?

5. An adjustable resistor is usually of the wire-wound type, isn't it?

True

False



3. True or False

1. A resistor may be of low value or of high value. _____

2. Resistors in electronic circuits are made in a variety of sizes and shapes. _____

3. A resistor is a circuit element designed to insert resistance in the current. _____

4. Variable resistors aren't commonly known as rheostats or potentiometers. _____

5. An adjustable resistor is always of the wire-wound type. _____



4. Match the antonyms

small

low

increase

metal

right

modern

easy

always

decrease

non-metal

left

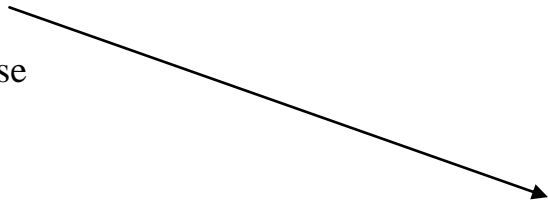
prehistoric

high

hard

never

big



5. Match the synonyms

type

knob

adjustable

rotating

move

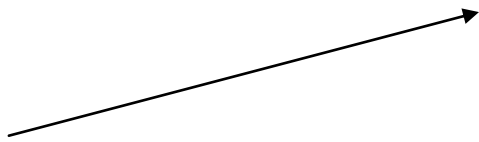
variable

turning

screw

kind

go



6. Choose Ukrainian equivalents to English words

to compute the current, wire-wound type, metal collar, adjustment knob, to handle the current, electronic device, fixed resistors

Встановлена ручка, металевий хомут, проволочно-керамічний тип, пропускати струм, розрахувати силу струму, електричний прилад, постійні резистори



7. Put the words into the correct order to make the sentences.

1. a resistor, a circuit, designed, to insert, in, the, circuit, is, element, resistance. _____

2. a resistor, be, of, value, of, high, value, may, low, or. _____

3. variable, are, known, rheostats, potentiometers, resistors, commonly, as, or. _____

4. it, be, that, the, use, a resistor, any, type, be, very, considered, must, pointed out, of, of, must, carefully. _____

5. resistors, electronic, are, in, a variety, sizes, and, shapes, in, circuits, made, of. _____



8. Translate the sentences into English

1. Резистори можуть бути високочастотні та низькочастотні. _____

2. Резистори в електронних схемах зображені за різними формами та розмірами. _____

3. Опір резистора позначається умовним кольором. _____

4. Змінний резистор зазвичай проволочно-керамічного типу. _____



9. Speak on the topic” RESISTORS” using the following plan:

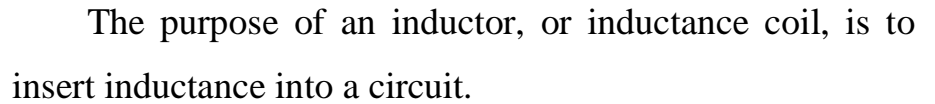
- A resistor is a circuit element designed to insert resistance in the circuit.
- The resistance value



A Student's Page

[illegible]

INDUCTORS



turns of wire and also be wound on an iron core to increase the inductance.

Inductance coils are rated as to value in henrys.

[illegible]



2. Answer the questions

1. What is the purpose of an inductor? _____

2. Where is the inductor used? _____

3. What is the unit of inductance? _____

4. Inductors are made in many shapes and designs, aren't they? _____

5. Is an inductor used in high-frequency circuits may consist of only one turn or even less than one turn of wire? _____

True



False



3. True or False

1. The purpose of an inductor, is to insert inductance into a circuit. _____
2. Inductors aren't made in many shapes and designs. _____
3. An inductor is used in low-frequency circuits. _____
4. Inductors are always used in radio in connection with capacitors to provide tuned circuits. _____
5. Inductance coils are rated as to value in henrys. _____



4. Complete the sentences

1. The purpose of an inductor _____
2. An inductor is used in _____
3. On the other hand, an inductor is used as _____
4. Inductors are often used in _____
5. Inductance coils are rated as _____



5. Fill in the gaps with the missing letters

Ind____r, pur____se, in____t____ce, v____l____e, cir____te, va____b____e, c____k____, d____i____ns.



6. Translate the words into Ukrainian

purpose, high-frequency circuits, choke coil, low-frequency circuit, filter circuit, iron core, tuned circuits, to filter out unwanted frequencies.



7. Put the words into the correct order to make the sentences.

1. 1. Are, inductors, made, many, in, shapes, designs, and.

2. Inductance, coils, rated, are, as, value, to, henrys, in.

3. Inductors, often, in, are, used, radio.

4. The, purpose, an, of, inductor, or, coil, inductance, is, insert, to, inductance, a, into, circuit.



8. Translate the sentences into English

1. Індукційні котушки виробляються різні за формою.

2. Котушка використовується в високочастотних ланцюгах.

3. Індукційна котушка використовується як дросельна котушка.



- 

[illegible]

Lesson 11

Electric Circuit



1. Read the text and translate the paragraph in bold type in writing way

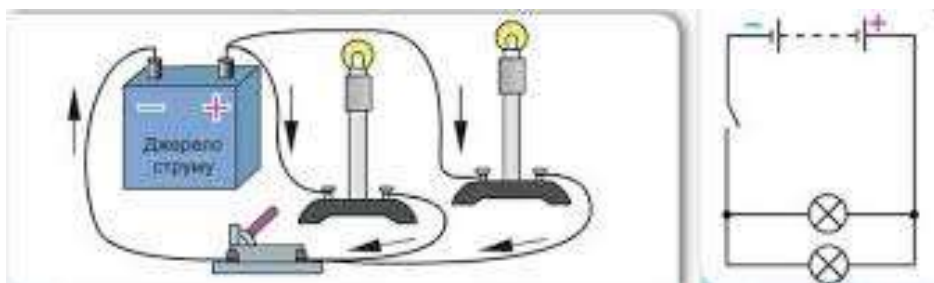
The electric circuit is the subject to be dealt with in this text. But what does the above term really mean? We know the circuit to be a complete path which carries the current from the source of supply to the load and those carries it again from the load back to the source.

The purpose of the electrical source is to produce the necessary electromotive force required for the flow of current through the circuit.

The path along which the electrons travel must be complete otherwise no electric power can be supplied from the source to the load. Thus we close the circuit when we switch on our electric lamp.

If the circuit is broken or, as we generally say "opened" anywhere, the current is known to stop everywhere. Hence, we break the circuit when we switch off our electrical devices. Generally speaking the current may pass through solid conductors, liquids, gases, vacuum, or any combination of these. It may flow in turn over transmission lines from the power-stations through transformers, cables and switches, through lamps, heaters, motors and so on.

There are various kinds of electric circuits such as: open circuit, closed circuit, series circuits, parallel circuits and short circuits.



To understand the difference between the following circuit connections is not difficult at all. When electrical devices are connected so that the current flows from one device to another, they are said to be connected in series. Under such conditions the current flow is the same in all parts of the circuit, as there is only a single path along which it may flow. The electrical bell circuit is considered to be a typical example of a series circuit. The parallel circuit provides two or more paths for the passage of current. The circuit is divided

in such a way that part of the current flows through one path, and part through another. The lamps in your room and your house are generally connected in parallel.

Now we shall turn our attention to the short circuit. It is produced when the current is allowed to return to the source of supply without control and without doing the work that we want it to do. The short circuit often results from cable fault or wire fault. Under certain conditions, the short may cause fire because the current flows where it was not supposed to flow. If the current flow is too great a fuse is to be used as a safety device to stop the current flow.

The fuse must be placed in every circuit where there is a danger of overloading the line. Then all the current to be sent will pass through the fuse.

When a short circuit or an overload causes more current to flow than the carrying capacity of the wire, the wire becomes hot and sets fire to the insulation. If the flow of current is greater than the carrying capacity of the fuse, the fuse melts and opens the circuit.

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2. Answer the questions

1. What do we call an electric circuit? _____

2. What kinds of circuit do you know? _____

3. When is a short circuit produced? _____

4. What does a short circuit often result from? _____

5. What safely device is used in the circuit when the current is too great? _____



3. Fill in the gaps with the necessary words in brackets

1. The electric circuit is the subject to be dealt with in this _____ (*text, story, poem*).
2. There are various _____ (*kinds, types, numbers*) of electric circuits.
3. To understand the difference _____ (*between, near, on*) the following circuit connections is not difficult at all.
4. The fuse must be placed in every circuit where there is a danger of overloading the _____ (*line, wire, circuit*).
5. When a _____ (*short, open, series*) circuit or an overload causes more current to flow than the carrying capacity of the wire, the wire becomes hot and sets fire to the insulation.



4. Translate the words into English

ціль, електричне джерело, різниця, електричне коло, електричні пристрої, перенавантаження, об'єм, небезпека, запобіжник, виробляти, лінія, з'єднання .



5. Choose Ukrainian equivalents to English words

open circuit, to carry, series circuit, load, parallel circuit, electromotive force, to switch (on, off), use, overloading, cable.

відкрите коло, електрорушійна сила, включати, використовувати, навантаження, послідовне коло, перенавантаження, виключати, нести, паралельне коло, кабель.



6. Translate the sentences into Ukrainian

1. The path along which the electrons travel must be complete otherwise no electric power can be supplied from the source to the load.

2. If the circuit is broken or, as we generally say "opened" anywhere, the current is known to stop everywhere.

3. Generally speaking the current may pass through solid conductors, liquids, gases, vacuum, or any combination of these.

4. The fuse must be placed in every circuit where there is a danger of overloading the line.

5. If the flow of current is greater than the carrying capacity of the fuse, the fuse melts and opens the circuit.



7. Speak on the topic "Electric circuit" using the following plan:

- What is an electric circuit?
- Kinds of electric circuits



A Student's Page

[illegible]

Lesson 12

BATTERIES



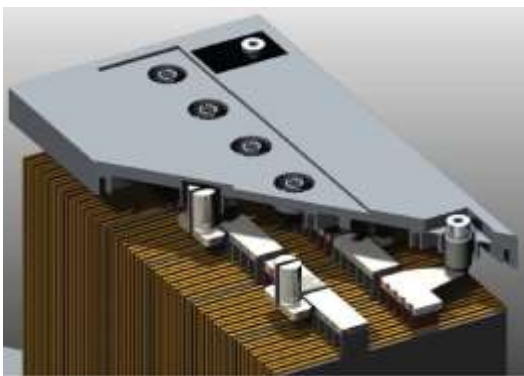
1. Read the text and translate the paragraph in bold type in writing way

Batteries as continuous sources of electrical energy are the result of a long series of experiments which started with the discoveries of Alessandro Volta more than one hundred years ago. Today battery cells are manufactured in two common forms, dry cells being used in flash lights, portable radios, etc., wet cells being used in automobiles, airplanes, boats, etc.

We know each cell of every battery to have two terminals: one negative, the other positive. The difference of potential between the terminals of every dry cell, regardless of size, is approximately 1.5 volts, whereas the difference of potential between the terminals of a lead storage cell is approximately 2 volts. The larger the cell, the greater the amount of energy stored within in. The available energy in dry cells becoming exhausted, they are thrown away and new ones are secured, but when storage batteries become exhausted, they are recharged.



The difference of potential between the terminals of any dry or wet cell depends in principle upon the particular chemicals used in its construction, whereas the total charge capacity depends upon the quantity of chemicals present.



The negative terminal of a dry cell is the zinc metal container in which all chemical ingredients are sealed, whereas the positive terminal is around carbon rod, the end of which protrudes through the surface at one end. The positive electrode of a storage cell is known to be set of lead grills filled with porous lead dioxide and fastened together with a single terminal. The negative electrode consists of a set of parallel grills filled with spongy lead. When these two sets of plates are put together with glass or wood separators and the entire ensemble immersed in dilute sulfuric acid, chemical activity between the lead and acid gives rise to electric charges.



2. Answer the questions

1. What are the two common forms battery cells are manufactured? _____

2. What could these battery cells be used for? _____

3. How the difference of potential between the terminals of any dry or wet cell is explained? _____

4. What is the main distinction of dry and wet cells? _____

5. Does the negative electrode consist of a set of parallel grills filled with spongy lead? ____



3. Choose Ukrainian equivalents to English words

dry cell, flashlight, wet cell, terminal, leads to, storage battery, protrude, grill, spongy lead plate, sulfuric acid, dilute

розбавлений, решітка, свинцевий елемент, імпульси освітлення, акумуляторна батарея, губчастий свинець, клема, виступати, сірчана кислота, пластина, елемент з рідким електролітом, сухий елемент

True ☒ False ☐

4. True or False

1. Batteries as continuous sources of electrical energy are the result of a long series of experiments which started with the discoveries of Alessandro Volta more than two hundred years ago. _____

2. Today battery cells are manufactured in three common forms, dry cells being used in flash lights, portable radios, etc., wet cells being used in automobiles, airplanes, boats, etc.

3. The larger the cell, the greater the amount of energy stored within in. _____

4. The positive electrode of a storage cell is known to be set of lead grills filled with porous lead dioxide and fastened together with a single terminal.

5. When these two sets of plates are put together with glass or wood separators and the entire ensemble immersed in dilute sulfuric acid, chemical activity between the lead and acid gives rise to electric charges. _____



5. Translate the sentences into Ukrainian

1. Around 1936, archaeologists uncovered in a village near Baghdad a set of terracotta jars which each contained a rolled-up sheet of copper which housed an iron rod.

2. Some scientists believe that this may have been an ancient galvanic cell (roughly 2,000 years old, though its age is still debated), and dubbed them the "Baghdad Batteries".

3. It is believed a common food acid, such as lemon juice or vinegar, served as an electrolyte.

4. Modern replicas have successfully produced currents, lending credence to this hypothesis.

5. It is possible these jars were used for electroplating, to produce mild electric shocks as a source of religious experience, or simply used to store ancient scrolls.



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[illegible]

Lesson 13

TRANSFORMERS



1. Read the text and translate the paragraphs in bold type in writing way

Unlike the generator, a transformer cannot be used to convert mechanical energy into electrical energy, it being able to transform electrical energy from one circuit at the same or some other voltage.

Essentially, a transformer consists of two coils, not electrically connected to each other, but wound over a common core. The core may also be of open type or it may be merely a tube of some insulating material, the latter being referred to as an air core.



If a varying voltage be applied to the primary coil, the electromagnetic field set up around the coil will rise and fall in accordance with the e.m.f. variations applied. This moving field cuts the turns in the secondary coil and induces an e.m.f. therein. The value of this induced e.m.f. depends upon the strength of the applied e.m.f. and the ratio of secondary turns to primary turns. Should there be twice as many turns in the secondary as in the primary, the voltage in the secondary would be twice that applied to the primary. If there were half as many turns in the secondary, the voltage would be half that applied to the primary. This voltage step up or step down in proportion to turn ratio will hold good for all combinations. Where the voltage is raised, however, amperage is lost in the same proportions, and vice versa. Therefore, the power in watts supplied to the transformer is the same as that drawn from it, assuming the transformer to be 100 per cent efficient. The copper losses, or ohm resistance of the windings, and the core losses due to induction of eddy currents in the core material, as well as hysteresis or molecular friction caused by changing polarity of the current applied, all combined to reduce modern transformer efficiency to about 90 percent.

Transformers are classed according to the use they are designed for. Where it is desired to step up a low-voltage a.c. supply to a value useful for radio receivers and

transmitters, a power transformer is used. The windings are sufficiently heavy to carry the current without undue heating, and the secondary may consist of two or more separate windings to provide various voltages from the one input source.

As the iron core increases, the inductive reactance of the transformer increases, and in as much as this type of reactance also increases. With the frequency of the applied alternating current, there is a limit to the frequencies that can be efficiently used in transformers with metallic cores. Where very high frequency alternating current is used, such as in the r-f circuits of receivers and transmitters, air core transformers must be used to eliminate prohibitive core losses.



2. Answer the questions

1. What is a transformer used for? _____

2. What does a transformer consist of? _____

3. How does the electromagnetic field around the primary coil change if a varying voltage is applied to it? _____

4. What does the value of the induced e.m.f. depend upon? _____

5. How are transformers classed? _____

True

False



3. True or False

1. A transformer cannot be used to convert mechanical energy into electrical energy. _____
2. A transformer consists of three coils. _____
3. The core may also be of open type. _____
4. Transformers are classed according to the use they are designed for. _____
5. As the iron core increases, the inductive reactance of the transformer decreases, and in as much as this type of reactance also increases. _____



4. Complete the sentences

1. The windings are sufficiently heavy... _____
2. As the iron core increases... _____
3. Where very high frequency alternating current is used...

4. If a varying voltage... _____
5. Transformers are classed according to... _____



5. Translate the word combinations into Ukrainian

radio receivers, power transformer, high frequency alternating current, core losses,
acoustic energy, direct-current generators, primary coil, , electro-magnetic field



6. Put the words into the correct order to make the sentences

1. A transformer, be, used, convert, energy, electrical, energy, cannot, to, mechanical, into

2. A transformer, of, coils, consists, two

3. The value, this, e.m.f., depends, the, of, the, applied, e.m.f., of induced, upon, strength

4. This voltage, or, in, proportion, ratio, good, for, combinations, step up, step down, to turn, will hold, all.

5. Transformers, classed, the use, they, designed for, are, according to, are.



7. Speak on the topic” Transformers” using the following plan:

- A transformer consists of two coils
- Transformers are classed according to the use they are designed for.

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Lesson 14

Electrical safety devices



1. Read the text and translate the paragraph in bold type in writing way



We use electricity for many of the energy services around the house. Because of this, it is extremely important to have various safety devices to protect from fire and electrocution. Industrial electricity use has similar problems. This page examines these electrical safety devices. Namely, fuses, circuit breakers, and ground fault circuit interrupters.

Both fuses and circuit breakers are the connection point between the electrical grid and an individual house.

A fuse is an electrical safety device that has the capability to protect a circuit from excessive current. It is designed to allow current through the circuit, but in the event that the current exceeds some maximum value it will open, severing the circuit.

Circuit breaker

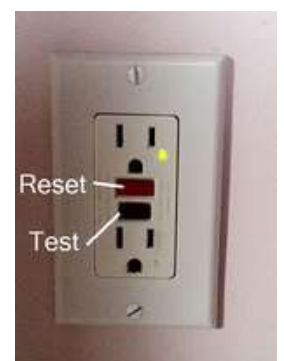


Circuit breakers are devices that protect circuits from overload current conditions. They do the same job as fuses, but they are not destroyed when activated. They are more expensive to put in than fuses, but since components rarely need to be replaced may be cheaper in the long term. Circuit breakers are often considered safer since the user can't as easily disable them (like putting the wrong size fuse in place).

Circuit breakers functionally open a **switch** which turns off all the electrical **current** before the excess electrical current can start a fire. Before resetting the circuit breaker, always turn off or unplug the electronic devices that were being used with the breaker was activated.

Ground fault circuit interrupt

A ground fault circuit interrupt is a device designed to detect a tiny mismatch in currents (going into and out of the circuit), in order to prevent electrocution. They are mandatory in bathrooms and kitchens, and anywhere else in a house where water may come in contact with an electric circuit.



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

? 2. Answer the questions

1. What are important safety reminders?

2. A fuse is an electrical safety device that has the capability to protect a circuit from excessive current, is not it?

3. What are devices that protect circuits from overload current conditions?

4. What do circuit breakers functionally open?

5.What is a device designed to detect a tiny mismatch in currents (going into and out of the circuit), in order to prevent electrocution?

3. Put the words into the correct order to make the sentences

1. we, electricity, of, energy, services, the house, use, for, many, the, around.

2. electricity, has, problems, industrial, use, similar.

3. a fuse, an electrical, that, the capability, a circuit, excessive, current, is, safety, device, has to, protect, from.

4. circuit breakers, devices, protect, from, current conditions, are, that, circuits, overload.

5. a ground, circuit, is, designed, a, tiny, in currents, prevent, electrocution, fault, interrupt, a device, to detect, mismatch, in order to.



4. Translate the words and word combinations into Ukrainian.

fuses, circuit breakers, ground fault circuit interrupters, the electrical grid, circuit, current, fire, to activate, to detect, mismatch, fault, overload, to protect, in order to, capability, excessive, safety, ground, electrocution, tiny, industrial, device, services



5. Complete the sentences with the word combinations from the brackets below.

1. We use electricity for many.....

2. Both fuses and circuit breakers are the connection point between.....

3. Circuit breakers are devices that.....

4. Circuit breakers are often considered.....(like putting the wrong size fuse in place).

5. A ground fault circuit interrupt is a device designed to detect a tiny mismatch in currents (going into and out of the circuit),

(the electrical grid and an individual house, considered safer since the user can't as easily disable them, of the energy services around the house, protect circuits from overload current conditions, in order to prevent electrocution).



6. Speak on the topic” Electrical safety devices” using the following plan:

Circuit breaker

Ground fault circuit interrupt



A Student's Page

[illegible]

АНГЛО-УКРАЇНСЬКИЙ СЛОВНИК

А

Ability --- здатність, уміння

Able --- здатний

About --- біля, приблизно, майже

Above --- над, вище, більше

absorb -- поглинати

accelerate -- прискорювати

acceleration -- прискорення

accept -- приймати

acceptable – припустимий

acceptance -- прийняти

access – ступ, прохід

accommodate-- розташовувати

accomplish -- виконувати

according to – відповідно до

accuracy --точність, правильність

achieve --досягати

acre --акр

action -- дія

actively -- активно

activity -- діяльність

actual -- дійсний

actuate – проводити в дію

actuator -- привод

adapt -- прискорювати

add – додавати

additional --додатковий

additive -- присадка

adjust– регулювати, встановлювати

adjustable -- регульований

adjustment --налагодження

advance -- випереджати

advantage -- перевага

adverse --несприятливий

affect --впливати

after -- після

air --повітря

aspect -- вигляд

aspirator -- витяжний вентилятор

aircraft -- літаки

alarm –сигнал тривоги

alert-тривога

assemble --збирати

assist --допомагати

associate --асоціюватися

assume -- припускати

alfalfa -- люцерна

assure--гарантувати

all --все

allow --дозволяти

Again--знову

age -- вік

agricultural--

сільськогосподарський

agriculture – сільське господарство

ahead -- попереду

aid --допомога

almost—майже

along-- вперед

alongside—поряд з
also—також, теж
alteration -- зміна
alternative -- змінний
altogether-- зовсім
amount – кількість, величина

and—і, а

angle-- кут

animal -- тварина

area-- площа

apply -- застосовуваний

at – біля, при

attach -- прикріплювати

attachment -- приєднання

alteration-- зміна

along—безперервна фізична

величина

application -- застосування

applicable -- придатний

arm – плече, тримач

around--навколо

arrange--розміщувати

arrangement-- розміщення

as—як, так як

as...as—так...як

aspect—вигляд, вид

aspirator--аспіратор

assist--допомагати

associate--асоціюватися

assume--припускати

assure--гарантувати

at—в, на, біля

auger--конвеєр

automatic--автоматичний

automatically-- автоматично

automobile--автомобіль

autumn--осінь

auxiliary--допоміжний

available--придатний

average--середній

axial--осьовий

axle—вісь, ведучий міст

В

Back--назад

Backrest--спинка

Backward--спрямований назад

Baffle--глушник

Balance--рівновага

Bale--тюк

Ballast--баласт

Band--смуга

Bank--група

Bar--стрижень

Barley--ячмінь

Base--засновувати

Basic--головний

Bat--біяк

Battery--батарея

Be--бути

Beam--балка

Bean--квасоля

Bearing--підшипник

Beater--бітер
Because--тому
Become--ставати
Bed--грядка
Before-перед
Begin--починати
Beginning--початок
Behind--позаду
Believe--вірити
Below--нижче
Belt--ремінь
Drive belt—привідний ремінь
Beneath--внизу
Between--між
Beg--великий
Blade—лопата, ніж, лезо
Blast--потік
Block--вузол
Blockage--засмічення
Blow--дути
Blue--блакитний
Body--корпус
Bolt--болт
Bore--свердлити
Both--обидва
Bottom—дно
Bowl—поплавкова камера
Box--коробка
Brake--гальмо
Break--розбивати
Breakdown--поломка

Bring--приносити
Broadcaster--розкидувати
Brush--прочісувати
Burn--горіти
Bury--закопувати
Business--діло
But--але
Buy--купувати
By—біля
C
Cab--кабіна
Cabbage---капуста
Cage--клітка
Call—звати
Camshaft—розподільний вал
Canvas--стрічка
Capability--здібність
Cable--здібний
Capacity—ємність
Car--машина
Carbon--вуглець
Carburetor--карбюратор
Care--догляд
Careful—ретельний
Carry--підтримувати
Carry away—вщносити
Carry on--вести
Carry out--виконувати
Case--випадок
Cause--причина
Central--центральний

Centre--центр	Clover--конюшина
Centrifugal--відцентровий	Clutch--зчеплення
Century--століття	Coat--шар
Certain--певний	Coll--обмотка
Chaff--полова	Collect--збирати
Chaffer--полововловлювач	Combination--поєднання
Chamber--камера	Combine--комбайн
Change--зміна	Combustion--згоряння
Channel--канал	Comfort--зручність
Characteristic--характеристика	Comfortable--зручний
Characterize--характеризувати	Common--звичайний
Charge--заряд	Compaction--ущільнення
Chart--схема	Company--компанія
Chassis—шасі,рама	Compare--порівнювати
Cheap--дешевий	Compatible--сумісний
Check--перевірка	Competitor--конкурент
Chisel--чизель	Complete--завершений
Choice--вибір	Completely--зовсім
Choose--вибирати	Component--деталь
Circuit--ланцюг	Compose--складати
Circulate--циркулювати	Compress--стискати
Circulation--циркуляція	Compression--компресія
Circumstance--випадок	Concave--дека
Civilization--цивілізація	Condense--конденсувати
Classify--класифікувати	Condition--умова
Clean--чистий	Confine--обмежувати
Cleaner--очистувач	Connect--прикріплювати
Clearance--кліренс	Conserve--зберігати
Clock--годинник	Consider--вважати
Clod—брила,грудка землі	Considerably--значно
Close--закривати	Consist of —складатися з

Consolidate--тверднути	Crankshaft—колінчастий вал
Constant--постійний	Crawler—гусенечний трактор
Consult--радитись	Create--створювати
Contact--контакт	Criterion--критерій
Contain--вміщати	Crop--культура
Container--вмістилище	Companion crop— супровідна
Contionuous--безперервний	культура
Control--контроль	Laid crops--культури
Convenient--зручний	Root crop--коренеплоди
Conventional--зручно	Standing crop-- нормальний
Conventionally--звичайний	хлібостій
Convert--перетворювати	Cultivate--виросувати
Convey--подавати	Cultivation—обробіток землі
Conveyor--ковчєр	Cultivator--культиватор
Cool--прохолодний	Cumbersome--обтяжливий
Coolantохолоджує	Curve--крива
Cope--справлятися	Cushioning--амортизація
Corn--зерно	Customer--покупець
Correct--виправляти	Cutpi--зати
Corrosion--корозія	Cutter--подрібнювач
Cost--ціна	Cycle--цикл
Costly--дорогоцінний	Cylinder—циліндр
Cotton--бавовна	D
Coulter—шіж плуга	Daily--щоденний
Country--країна	Dam--дамба
Coupler--з'єднувати	Damage—збиток
Copler—з'єднувальний пристрій	Danger-- небезпека
Coupling--зчеплення	Day--день
Cover--загортати	Deadly--смертельно
Crank--заводити	Decade--десятиріччя
Crankcase--картер	

Decelerator—сповільнювач
процесу

Decide--вирішувати

Decrease--зменшувати

Deep--глибокий

Define--визначати

Definitely--ясно

Defleck--відхилятися

Degree--ступінь

Deliver--подавати

Delivery—нагнітання

Demand--вимога

Demonstrate--показувати

Denote--позначати

Density--щільність

Depend--залежати

Dependent--залежний

Depth--глибина

Describe--описувати

Design--проект

Desingner--конструктор

Desire--бажати

Destroy--знищувати

Detach--відокремлювати

Detail--деталь

Detect--виявляти

Determine--визначати

Detonation--вибух

Develop--розвивати

Development--розвиток

Device--пристрій

Deagonal--діагональ

Diameter--діпметр

Differ--відрізняти

Different--відмінний

Differential--особливий

Difficulty--трудність

Digger--копач

Digital--цифровий

Direct--направляти

Direction--напрямок

Dirt--бруд

Discharge--вимикати

Discovery--відкриття

Discuss--обговорювати

Disengagement--роз'єднання

Dispersal--розвіювання

Displacement--перестановка

Display--показувати

Distance--відстань

Distinguish--розрізняти

Distribution--розподіл

Distributor—розподільний прилад

Disturb--збивати

Divert--відводити

Divide--ділити

Divider—той, хто ділить

Do--робити

Double--подвійний

Down--вниз

Downward--донизу

Draft--зчеплення

Drain--осушувати
 Drainage--дренаж
 Draught link—силовий регулятор
 Draw--тягти
 Draw in--втягувати
 Drawbar—тяговий брус
 Drill—сівалка, сверлити
 Direct drill—стернова сівалка
 Direct drilling—посів по стерні
 Drop--падіння
 Drum--барабан
 Dry--сухий
 Dual--подвійний
 Due--завдяки
 Durability--тривалість
 Dust--пил
 Dynamic—активний, динамічний
Е
 Each--кожний
 Ear--качан
 Early--початковий
 Ease--полегшувати
 Easily--легко
 Easy--легкий
 Eccentric--ексцентрик
 Economy--економіка
 Edible--їстівний
 Effect--вплив
 Effectively--ефективно
 Efficient--ефективний
 Effort--зусилля

Egyptian—єгиптянин
 Either...or—або...або
 Electric--електричний
 Electronics--електроніка
 Elevator--елеватор
 Eliminate--ліквідувати
 Employ--використовувати
 Enable—давати змогу
 End--кінець
 Energy--енергія
 Engage--зчіпляти
 Engagement--вмикання
 Engine--двигун
 Engineer--інженер
 Enhance--підвищувати
 Enormous---величезний
 Enough--осить
 Ensure--забезпечувати
 Enter--входити
 Entirely--зовсім
 Envelop--обгортати
 Environment--середовище
 Equal--рівний
 Equally--однаково
 Equip--постачати
 Equipment--обладнання
 Essential--важливий
 Estimate--оцінювати
 Ethanol--етанол
 Ether--ефір
 European--європейський

Even--рівний	Far--далекий
Every--кожний	Farm--господарство
Everything--все	Collective farm--колгосп
Everywhere--всюди	Farmer--фермер
Exactly--точно	Farming--ферма
Examine--оглядати	Power farming—механізоване с/г
Example--приклад	Fast--швидкий
Except--виняток	Fatigue--втома
Excess--надлишок	Faulty--помилка
Exhaust--вихлоп	Favourable--сприятливий
Exist--існувати	Feature--риса
Expand--розширювати	Feed--харчувати
Expansion--розширення	Feeder--конвеєр
Expect--очікувати	Feel--відчувати
Expel--виштовхувати	Fertilizer--добриво
Expensive--дорогоцінний	Fiber--волокно
Experience--зазнавати	Field--поле
Explosive--вибуховий	Fill--наповнювати
Express--висловлювати	Filler—отвір для наливання
Extend--виступати	Film--плівка
Extensively--широко	Filter--фільтр
Extension--протяг	Fin--ребро
External--зовнішній	Final--кінцевий
Extra--додатковий	Financial--фінансовий
Extreme--надзвичайний	Find--знаходити
Extremely--вкрай	Fine--тонкий
F	Finish--закінчувати
Factor--фактор	First--перший
Fall--падати	Fit--підганяти
Familiar--відомий	Fix--закріплювати
Fan--вентилятор	Flat--плоский

Flexibility--гнучкість

Flexible--еластичний

Flight--виток

Float--поплавок

Flow—потік, течія

Flow—текти, литись

Fluid--рідина

Flush--струмінь

Flywheel--маховик

Follow--слідкувати

Following--наступний

Food--їжа

Foot--нога

For--для

Forage—корм, фураж

Force--сила

Forced--примусовий

Force out--вищтовхувати

Forge--кувати

Form--форма

Forward--передній

Frame--рама

Free--вільний

Freely--вільно

Frequent--частий

Frequently--часто

Fresh--свіжий

Freshly--недавно

Friction--тертя

Frog--жаба

From--від

Front--передній

Frost--мороз

Fruit--фрукти

Fuel--паливо

Fulfil--виконувати

Full--повний

Function--функція

Furnish--постачати

Furrow--борозна

Further--дальший

Future—майбутнє

G

Gain--отримувати

Gallon--галон

Garage--гараж

Garden--город

Gas--газ

Gasket--прокладка

Gasoline--бензин

Gauge—вимірювальний прилад

Gear--шестерня

Gearbox—коробка передач

General--звичайний

Generally--взагалі

General-purpose—загального
призначення

Generate--виробляти

Get--отримувати

Giant--гігантський

Give--давати

Go--йти

Good--добрий	Heavy--важкий
Governor--регулятор	Heavy-duty--потужний
Gradual--поступовий	Hectare--гектар
Grain--зерно	Height--висота
Grass--трава	Help--допомагати
Grate--решітка	Helpful--корисний
Gravity--тяжіння	Herbicide--гербіцид
Great--великий	High--високий
Grip--захват	Highly--сильно
Ground--група	Hilly--горбистий
Grow--рости	Hinge—підвішувати на шарнірах
Growth--ріст	Hitch--зачеп
Guide--керувати	Ное--мотика
Н	Hold--володіти
Half--половина	Hole—отвір, діра
Hand--рука	Hook---крюк
Handle--обходитись	Horisont--горизонт
Handling--керування	Horizontal--горизонтальний
Hard--міцний	Horsepower—кінська сила
Harm--шкода	Horticulture--садівництво
Narrow--борона	Hose--шланг
Harvest—збирати врожай	Hostel--гуртожиток
Harvester--комбайн	Hot--гарячий
Have--мати	Hour--година
Hay--сіно	Per hour—на годину
Head—колос, голова	Housing--корпус
Header--хедер	How--як
Headland—край поля	However--однак
Heart--серце	Human--людина
Heat--тепло	Humus--перегній
Heater--обігрівач	Hydraulic--гідравлічний

Hydraulics--гiдравлiка
Hydrostatic—гiдростатичний

I

Idea—iдея
Ideal---iдеальний
Idling—холостий хiд
If--якщо
Ignite--займатися
Ignition--спалах
Incline--нахилятися
Include--включати
Incorporate--з'єднувати
Increase--збiльшувати
Independently--незалежно
Indicate--позначати
Indication--ознака
Indicator--показчик
Industrial--виробничий
Industry--промисловiсть
Influence--вплив
Inform--iнформувати
Inhibit--затримувати
Initial--початковий
Inject--впорскувати
Injector--форсунка
Inlet--впуск
Inner--внутрiшнiй
Innovation--нововведення
Inside--всерединi
Inspect--оглядати
Instead of --замiсть

Instrument--прилад
Intake--впуск
Integrate--об'єднувати
Intend—мати намір
Intensify--iнтенсифікувати
Interchange--чергування
Intercooler—проміжний

охолоджувач

Interesting--цiкавий
Internal--внутрiшнiй
Interval--проміжок
Intricate--складний
Introduction--введення
Invent--винаходити
Invention--винахiд
Invert--перевертати
Involve--включати
Inward—спрямований всередину
Iron--залiзний
Irregularity—неправельнiсть
Irrelevant-- недоречний
Irrigation--зрошення
It—вiн, вона, воно
Itself—сам, сама, само

J

Job--робота
Joint--з'єднання
Journal—шийка вала
Just—саме, точно
Justify—виправдувати

K

Keep--зберігати

Kerosene—гас,керосин

Kill--знищувати

Kilowatt--кіловат

Kind—вид,сорт

Knife--ніж

Knob--кнопка

Know--знати

Knowledge—знання

L

Laborious--трудомісткий

Labour--праця

Lack—не мати

Land--земля

Landside---польова дошка

Large---вуликий

Last—минулий

Late--недавній

Lawn--газон

Lay--закладати

Layer--пласт

Lead--вести

Leak--рівень

Leave--покидати

Lecture--лекція

Left--лівий

Leg—стійка культиватора

Length--довжина

Level--рівень

Lever--ричаг

Life--життя

Lift--піднімати

Light--легкий

Lighting--освітлення

Like--подобатись

Likely--певно

Limit--межа

Line--риска

Link--ланка

Linkage--зчеплення

Liquefy—перетворювати в рідкий стан

Liquid--рідина

Little--маленький

Livestock—домашня худоба

Load---вантаж

Loader--навантажувач

Locate---розмічати

Lock---замок

Long--довгий

Longitudinal--поздовжній

Loosen—розрихляти ґрунт

Lose--губити

Loss--втрата

Lot--багато

Low--низький

Lower--опускати

Lubricant--мастило

Lubrication--змащування

Lump—брила,грудка

M

Machine--машина
 Machinery--техніка
 Magneto--магнето
 Main--головний
 Maintain--зберігати
 Maintenance—догляд
 Major---важливий
 Majority--більшість
 Make—виріб, марка, модель
 Make--виготовляти
 Make up--складати
 Man--чоловік
 Manifold--трубопровід
 Manoeuvrability--маневреність
 Manual--ручний
 Manually--вручну
 Manufacturer--виробник
 Manure--гній
 Many--багато
 Market--продаж
 Mass--маса
 Match---повідати
 Material--матеріал
 Mean--засіб
 Measure--міра
 Measurement--вимірювати
 Mechanical--механічний
 Mechanize--механізм
 Mediumсередній
 Metal--метал
 Meter--лічильник

Method--метод
 Middle--середина
 Might--міць
 Minute--дрібний
 Mix--змішувати
 Mixture--суміш
 Model--зразок
 Modern--сучасний
 Modify--модифікувати
 Moisten--змочувати
 Moisture--вологість
 Monitor--монітор
 Monoxide--оксид
 Motion--руч
 Motor--двигун
 Mouldboard--полиця
 Mount--монтувати
 Move--рухатися
 Movement--рух
 Mower--косарка
 Much--багато
 Muddy--брудний
 Muffler--глушитель
 Multiple--численний
 Multipurpose--універсальний
N
 Narrow--вузький
 Naturally--природно
 Nature--природа
 Near--біля
 Necessary--необхідий

Need--потреба
 Negative--відкидати
 Newly--недавно
 Next--наступний
 Night--ніч
 Noise--шум
 None--ніхто
 Norm--норма
 Normal--нормальний
 Now--зараз
 Nozzle--форсунка
 Number--число
 Numerous-- численний
 Nut--горіх
 Nutrient—поживна речовина
O
 Objective--мета
 Obstruct--перешкоджати
 Obtain--отримувати
 Obvious--очевидний
 Occur--відбуватися
 Odourless—позбавлений запаху
 Offer--пропонувати
 Often--часто
 Oil—мастило, нафта
 Old--старий
 On--на
 One--один
 Once—одного разу
 Only--тільки
 Open--відкривати

Opening--отвір
 Operate--працювати
 Operation--робота
 Operator--механік
 Opposite--протилежний
 Optimization--оптимізація
 Optimum—насприятливіші умови
 Or--або
 Orchard--звичайний
 Order--порядок
 Ordinary--звичайний
 Original--первісний
 Other--інший
 Outer--зовнішній
 Output--потужність
 Outside—зовнішня частина
 Outward--зовнішній
 Over--понад
 Overcome--подолати
 Overheat--перегрів
 Overload--перевантаження
 Owing to--внаслідок
 Own—власний
P
 Paddle--лопасть
 Pan—корито
 Panel---панель
 Parameter--зарахунок
 Park—ставити на стоянку
 Part--деталь
 Particle--частка

Particular--особливий	Place--місце
Particularly--особливо	Plant—завод,рослина,садити
Pass--прохід	Planter--садильник
Passage--канал	Plate--пластинка
Past--минуле	Platform--платформа
Patent—брати патент	Plough--плуг
Path--шлях	Ploughing--оранка
Peak--максимум	Plug--свічка
Peanut--арахіс	Plunger--плунжер
Pedal--педаль	Pneumatic--повітряний
Penetrate--пробивати	Point--точка
People--люди	Poison--отрута
Per—за,на	Popular--популярний
Perforate--перфорувати	Population--населення
Perforation--перфорація	Portion—частина,доля
Perform--виконувати	Position--положення
Performance—технічна	Possibility--можливість
характеристика	Possible--можливий
Period--період	Potato--картопля
Permit--дозволяти	Potential--потенціал
Person--особа	Power--сила
Pest--паразит	Precision--точність
Petrol—бензин,керосин	Prepare--готувати
Petroleum—нафта,газ	Present--теперешній
Pick—збирати,підбирати	Press--тиснути
Pick up—підбирач сіна	Pressure--тиск
Piece—частина	Pressurise--герметизувати
Pilot--керувати	Prevent--відвертати
Pin--палець	Preventive--запобіжний
Pipe--труба	Previous--попередній
Piston--поршень	Previously--раніше

Primary--основний

Prime--головний

Principle--правило

Prior--попередній

Problem--проблема

Procedure--процес

Process--обробляти

Produce--виробляти

Producer--виробник

Product--виріб

Profile--профіль

Progress--прогрес

Propel--рухатись

Prove--виявлятись

Provide--постачати

Pull--тягнути

Pulley--блок

Pulverize--розпушувати

Pump--помпа

Purpose--ціль

Push--поштовх

Q

Qualify--оцінювати

Quality--якість

Quantity--кількість

Quarter--чверть

Quick--швидкий

Quick-detach--швидкозйомний

Quite--зовсім

R

Rack—зубчаста рейка

Radial--променевий

Radiator--радіатор

Rain—дощ

Raise--піднімати

Ram--плунжер

Range--ряд

Rapid--швидкий

Rare--рідкий

Rate--темп

Rated--номінальний

Reach--досягати

React--реагувати

Read--читати

Realize--здійснювати

Really--насправді

Rear--задній

Rearward--назад

Reason--довід

Rebore--розточувати

Receive--отримувати

Recent--недавній

Recently--недавно

Reciprocating—зворотно-
поступальний

Reclaim--виправляти

Reclamation--освоєння

Recognize--визнавати

Recommend--радити

Record--показувати

Red--червоний

Reduce--знижувати	Retain--зберігати
Reduction--зменшення	Retard--сповільнювати
Reel--мотовило	Return--повернення
Refer--відсилати	Reverse--зворотний
Regard--розглядати	Review--огляд
Region--район	Revolution--оберт
Regular--правильний	Revolve--крутитися
Regulate--регулювати	Ride--пухатися
Relation--співвідношення	Right--прямий
Relationship--зв'язок	Rigid--жорсткий
Relatively--відносно	Rim--обід
Release--звільнення	Ring--кільце
Reliable--надійний	Rise--зростати
Reliability--міцність	Risk---ризик
Remain--залишатися	Road--дорога
Remove--усувати	Rod--стержень
Repair--ремонт	Role--роль
Replace--замінити	Roll—каток
Report--доповідь	Roller--ролик
Require--вимагати	Roof--дах
Requirement--вимога	Room--кімната
Research--дослідження	Root--корінь
Resemble—бути подібним	Rooty--коренистий
Residue--залишки	Rotary---обертальний
Resist--витримувати	Rotate--обертатися
Resource--ресурси	Rotor--ротор
Respect--відношення	Rough--грубий
Restoration--віднолення	Row--ряд
Restore--відновлювати	Rowcrop--просапаний
Result--результат	Rubber--гума
Result---приводити	Rugged--масивний

Rule--правило

Run---працювати

S

Safe--надійний

Safely--надійно

Safety--безпека

Same—один і той самий

Satisfactory--достатній

Satisfy--відповідати

Save--економити

Say--говорити

Scheme--схема

Scientist--вчений

Scraper--скребок

Screen--екран

Seal--ущільнення

Season—пора року

Seat--місце

Secondary--другорядний

Section--сегмент

See--бачити

Seed--насіння

Seedbed--рілля

Seem--здаватися

Select--вибирати

Selection--добір

Selective--відбірний

Self-propelled--самохідний

Semi-mounted—плугз

передплужником

Sense—сприймати датчиками

Separation--відокремлення

Separate--відокремлювати

Separator--молотарка

Series--набір

Serve--служити

Service--експлуатація

Set--встановлювати

Set out--висаджувати

Several--декілька

Shaft--вал

Shaker—вібраційний гуркіт

Shallow--мілкий

Shape--форма

Share--лемех

Sharpen--точити

Sharpness--гострота

Shed--намет

Shell--корпус

Shift--пересувати

Shoe--сошник

Shop--майстерня

Short--короткий

Show--показувати

Shut--зупиняти

Side--бік

Side-hill--схил

Side-hill—зворотний плуг

Sidewards—спрямована на бік

Sieve--сито

Sift--сіяти

Sign--ознака

Significant--значний
 Similar--схожий
 Simple--простий
 Simplicity--простота
 Simplify--спрощувати
 Since--оскільки
 Single--окреми
 Size--розмір
 Skid--полозок
 Skill--уміння
 Skilled--кваліфікований
 Slice--пласт
 Slight--тонкий
 Slightly--трохи
 Slip--буксувати
 Slope--схил
 Slot--проріз
 Slow--повільний
 Slowly--повільно
 Small--маленький
 Smoke—дим, кіптява
 Smoky--димний
 Smooth--плавний
 Snow--сніг
 So—таким чином
 So-called—так званий
 Soft--слабкий
 Solely--тільки
 Soil--грунт
 Solution--рішення
 Some--деякі

Sometimes--іноколи
 Soon--скоро
 Sound--звучати
 Source--джерело
 Space--простір
 Spark--іскра
 Speak--говорити
 Special--спеціальний
 Specific--особливий
 Specification--інструкція
 Specify--означати
 Speed--швидкість
 Spike--клин
 Spiral--спіраль
 Spray--струмінь
 Sprayer--розпилювач
 Spread--розкидати
 Spreader--розкидач
 Spring--весна
 Sprocket—ведуче колесо
 Stability--стійкість
 Stabilize--стабілізувати
 Stable--стійкий
 Stack--труба
 Stage--цикл
 Stalk--стебло
 Stand--стояти
 Standard--стандарт
 Standpoint—точка зору
 Start--починати
 start up--запускати

state--стан
stationary--нерухомий
steam--пара
steel--сталь
steep--крутий
steering--управління
step--стадія
sticky--липкий
still--тихий
stir up--піднімати
stony--кам'янистий
stop--зупинка
storage--зберігати
store--зберігати
straight--прямий
straw--солома
stress--напруга
strike--бити
stroke--такт
strong--міцний
structure--споруда
stubble--стерня
study--вивчати
subsoil--підґрунтя
subsoiler--грунтозаглиблювач
substance--речовина
succeed--добитися
such--такий
suck--всмоктувати
sufficient--достатній
sugar--цукор

suit--влаштовувати
suitable--придатний
summarize--підсумовувати
sun--сонце
supply--постачати
support--підтримувати
sure--впевнений
surface--поверхня
Surprisingly--несподівано
Swath—смуга скошеної трави
Swathing--рядкування
Sweep--волок
Switch--вмикання
Synchronize--синхронізувати
System--система
T
Table--дошка
Tachometer--тахометр
Tailing—обрізування корінців
Tailings—необмолочене колосся
Take--брати
Tall--високий
Tank--резервуар
Task--задача
Technical--технічний
Technique--техніка
Telescopic--телескопічний
Temperature--температура
Tend--обслуговувати
Tension--напруга
Term--строк

Test--вибробувати	Too--теж
Than--ніж	Tool--інструмент
That--який	Tooth--зубець
Then--потім	Ton--тонна
There--там	Top--верх
Thereby--внаслідок	Topography--топографія
Therefore--отже	Torque--момент обертання
Thermosiphon--термосифон	Total--сукупний
Thermostat--термостат	Touch--торкатися
Thin--тонкий	Toward--у напрямку до
Think--думати	Track--слід
Thinning--проріджування	Traction--тяга
This--цей	Tractor--трактор
Thresh--молотити	Traditional--традиційний
Throttle--дросьль	Trail--тягнути
Through--через	Trailed--причіпний
Throughout--скрізь	Trailer--причіп
Throw--кидати	Train--зубчаста передача
Thrust--напір	Transfer--переносити
Tight--ущільнення	Transform--перетворювати
Tighten--ущільнювати	Transition -- перехід
Till--обробляти	Transmission --передача
Tillage—обробіток ґрунту	Transmit -- передавати
Tiller--ґрунтофреза	Transplanter--розсадосадильна машина
Tilt--перекидатися	Trap--захоплюватись
Time--час	Trash--сміття
Tine--зуб	Travel--рухатися
Tobacco--тютюн	Tread--колія
Today--сьогодні	Tremendous--величезний
Together--разом	Tricycle--триколісний
Tomorrow--завтра	

Truck--перевозити
 Tube--трубка
 Turbocharged--з турбонаддувом
 Turn--поворот
 Turnover--перекидання
 Type--тип
 Typical--типовий
 Tyre--шина
U
 Under--нижче
 Undergo--випробувати
 Underlie--лежати
 Understand--розуміти
 Unit--одиниця
 Universal--універсальний
 Unless -- якщо не
 Unlikely -- навряд чи
 Until -- до тих пір
 Up--нагорі
 upper--верхній
 Upright--вертикальний
 Usage--вживання
 Use--користь
 Useful--корисний
 Usefulness--придатність
 Usual--звичайний
 Usually--звичайно
 Utilization--використання
 Utilize --використовувати

V

Value--величина
 Valve--клапан
 Vane--лопасть
 Variable--мінливий
 Variety--різноманітність
 Various--різний
 Vary--змінювати
 Vegetation--рослинність
 Vehicle -- транспортний засіб
 Ventilate--вентилювати
 Ventilation--вентиляція
 Versatile--різноманітний
 Vertical--вертикальний
 Very--дуже
 Vibration--вібрація
 Visibility--видимість
 Vision--вид
 Voltage--напруга
 Volume--об'єм
W
 Walker--платформовий
 соломотряс
 Wall--стінка
 Want--хотіти
 War--війна
 Warm--теплий
 Warn--застерігати
 Warning--попередження
 Watch--спостерігати
 Water--вода
 Waxу--восковий

Way--шлях

Weak--слабкий

Wear--зношування

Weather--носити

Weed--бур'ян

Weeding--прополка

Weight--вага

Well--добре

Wet--сирий

What--що

Wheat--пшениця

Wheel--колесо

When--коли

Where--де

Whether--чи

Which--який

While--поки

Whole--весь

Why--чому

Wide--широкий

Widely--широко

Width--ширина

Windrow--валок

Windrower - рядкова жниварка

Windrowing -- згрібання у валки

Wish--бажати

With--з

Within -- у межах

Without--без

Work -- робити,працювати

Y

Year--рік

Last year -- минулого року

Next year-- наступного року

Yield--врожай

ВИСНОВКИ

Навчання англійської мови професійного спрямування базується, передусім, на врахуванні потреб студентів у вивченні іноземної мови, що диктуються характерними особливостями професії або спеціальності. Новий рівень міжкультурної комунікації серед спеціалістів призвів до необхідності трансформації у системі професійної підготовки студентів немовних ВНЗ, до введення багатоаспектного соціокультурного викладання іноземної мови професійного спрямування

В результаті написання робочого зошита з іноземної мови за професійним спрямуванням для студентів спеціальності 5.100101102 «Монтаж, обслуговування та ремонт електротехнічних установок в агропромисловому комплексі» були проаналізовані і синтезовані теми, що виносяться типовою програмою для вивчення «Іноземної мови за професійним спрямуванням» напряму підготовки 1001 «техніка та енергетика агропромислового виробництва», спеціальності 5.100101102 «Монтаж, обслуговування та ремонт електротехнічних установок в агропромисловому комплексі». Робочий зошит передбачає труднощі, які можуть стати на перепоні в результаті роботи з фаховою термінологією, а тому кожний новий урок має адаптований текст, вправи на знаходження еквівалентів, синонімів, антонімів заповнення пропусків, складання речень тощо. Це дає можливість краще запам'ятати нові лексичні одиниці і застосовувати їх на рівні понад фразової єдності. Окрім того здійснюється контроль розуміння прочитаного за допомогою тестів множинного вибору, запитань.

Цінним є те, що матеріал зібраний в один ресурс і, маючи лише робочий зошит, студент має змогу повноцінно працювати як на занятті так і в поза аудиторний час. Сторінка студента залишає можливість написання нотатків, опрацюванню граматичних вправ, запису корисних сайтів тощо.

Автори робочого зошита висловлюють сподівання, що даний матеріал стане у нагоді викладачам англійської мови та студентам спеціальності 5.100101102 «Монтаж, обслуговування та ремонт електротехнічних установок в агропромисловому комплексі»

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