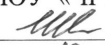


**ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ПРОФЕССИОНАЛЬНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ИРКУТСКОЙ ОБЛАСТИ  
«ЧЕРЕМХОВСКИЙ ГОРНОТЕХНИЧЕСКИЙ КОЛЛЕДЖ ИМ. М.И. ШАДОВА»**

Утверждаю  
Заместитель директора по УР  
ГБПОУ «ЧГТК им. М.И. Щадова»  
 Шаманова Н.А.  
« 16 » 06 2021 г.


**Комплект контрольно-оценочных средств  
по учебной дисциплине  
ОГСЭ.03 Иностранный язык в профессиональной деятельности  
программы подготовки специалистов среднего звена  
13.02.11 Техническая эксплуатация и обслуживание электрического и  
электромеханического оборудования (по отраслям)**


Черемхово, 2021

Комплект контрольно-оценочных средств разработан на основе Федерального государственного образовательного стандарта среднего профессионального образования по специальности 13.02.11 Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям), базовый уровень, программы учебной дисциплины Иностранный язык в профессиональной деятельности.

**Разработчики:**

Бондаренко Л.И., преподаватель иностранного языка ГБПОУ «Черемховский горнотехнический колледж им. М.И.Щадова»,  
Храпова Л.В., преподаватель иностранного языка ГБПОУ «Черемховский горнотехнический колледж им. М.И.Щадова»,  
Каплина В.А., преподаватель иностранного языка ГБПОУ «Черемховский горнотехнический колледж им. М.И.Щадова»,

Одобрено на заседании цикловой комиссии  
общеобразовательных и строительных дисциплин  
Протокол № 8 от «25» 05 2021г.  
Председатель ЦК  / Моисеенко Е.В. /

Одобрено Методическим советом колледжа  
Протокол № 5 от «16» 06 2021 г.  
Председатель МС  /Власова Т.В./

I. Паспорт комплекта контрольно-оценочных средств	4
II. Результаты освоения учебной дисциплины	5
III. Формы и методы оценивания	5
IV. Контрольно-оценочные средства для текущего контроля	5
V. Контрольно-оценочные средства для промежуточной аттестации	18
Приложение 1. Ключи к контрольно-оценочным средствам для текущего контроля	23
Приложение 2. Ключи к контрольно-оценочным средствам для промежуточной аттестации	27
Лист изменений и дополнений к комплекту контрольно-оценочных средств	29

## **I. Паспорт комплекта контрольно-оценочных средств**

В результате освоения учебной дисциплины Иностранный язык в профессиональной деятельности обучающийся должен обладать предусмотренными ФГОС по специальности СПО

13.02.11 Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям) общими и профессиональными компетенциями:

ОК 01. Выбирать способы решения задач профессиональной деятельности применительно к различным контекстам;

ОК 02. Осуществлять поиск, анализ и интерпретацию информации, необходимой для выполнения задач профессиональной деятельности;

ОК 03. Планировать и реализовывать собственное профессиональное и личностное развитие;

ОК 04. Работать в коллективе и команде, эффективно взаимодействовать с коллегами, руководством, клиентами;

ОК 05. Осуществлять устную и письменную коммуникацию на государственном языке Российской Федерации с учетом особенностей социального и культурного контекста;

ОК 06. Проявлять гражданско-патриотическую позицию, демонстрировать осознанное поведение на основе традиционных общечеловеческих ценностей;

ОК 07. Содействовать сохранению окружающей среды, ресурсосбережению, эффективно действовать в чрезвычайных ситуациях;

ОК 08. Использовать средства физической культуры для сохранения и укрепления здоровья в процессе профессиональной деятельности и поддержания необходимого уровня физической подготовленности;

ОК 09. Использовать информационные технологии в профессиональной деятельности;

ОК 10. Пользоваться профессиональной документацией на государственном и иностранном языке;

ОК 11. Планировать предпринимательскую деятельность в профессиональной сфере.

ПК 1.1. Выполнять наладку, регулировку и проверку электрического и электромеханического оборудования.

ПК 1.4. Составлять отчетную документацию по техническому обслуживанию и ремонту электрического и электромеханического оборудования.

ПК 2.1. Организовывать и выполнять работы по эксплуатации, обслуживанию и ремонту бытовой техники.

ПК 4.2. Организовывать и выполнять техническое обслуживание сложного электрического и электромеханического оборудования с электронным управлением;

Учебным планом колледжа предусмотрена промежуточная аттестация по учебной дисциплине Иностранный язык в профессиональной деятельности в форме дифференцированного зачета.

## **II. Результаты освоения учебной дисциплины**

В результате аттестации осуществляется комплексная проверка следующих умений и знаний, которые формируют общие и профессиональные компетенции:

### **знания:**

лексический (1200 – 1400 лексических единиц) и грамматический минимум, необходимый для чтения и перевода (со словарем) иностранных текстов профессиональной направленности

### **умения:**

-общаться (устно и письменно) на иностранном языке на профессиональные и повседневные темы;

-переводить (со словарем) иностранные тексты профессиональной направленности;

-самостоятельно совершенствовать устную и письменную речь, пополнять словарный запас;

## **III. Формы и методы оценивания**

Контроль и оценка знаний, умений, а также сформированность общих и профессиональных компетенций осуществляются с использованием следующих форм и методов: тестирование, защита проектных работ, презентаций и других видов самостоятельной работы. Оценка освоения дисциплины предусматривает использование накопительной системы оценивания при промежуточной аттестации и дифференцированного зачета.

## **IV. Контрольно-оценочные средства для текущего контроля**

### **Раздел 1 Вводно- коррективный курс**

#### **Вариант №1**

#### **Задание**

#### **1. Read the text and answer the questions**

##### **London**

London is the largest city in Western Europe. More than 7 million people live there. It lies on both banks of the Thames.

##### **Parts of London**

London is traditionally divided into several parts: the City of London, which is the financial center of the United Kingdom, the West End, which is the area of museums, art galleries, largest department stores, cinemas, and hotels. West End and is associated with wealth and luxury; and the East End, which is the industrial part of London and is very important for the commerce. Most of London sights, such as the Tower, the Houses of Parliament, Westminster Abbey, Trafalgar Square, and others are famous all over the world. The Tower of London was founded in the 11th century

by William the Conqueror. The Tower in the past was a fortress, a palace, and a prison. Though the kings were born, lived and were married there, it happened also that kings and queens were murdered in the Tower. It was said that whoever held the keys to the Tower, held the keys to the kingdom.

The Tower has several towers: the Jewel Tower, where the Royal precious jewels are kept, the White Tower, in which the Kings of England held their Court, and others. One of the towers is called the Bloody Tower, where the king Edward V and his brother were murdered. The Duke of York. Queen Anne Boleyn, the Princess ( afterwards Queen) Elisabeth and many other people were in prison in the Tower.

Now the Tower is a museum and the Crown jewels and other treasures are kept there. The Guard, known as "Beefeaters" still keep watch. The Ceremony of the Keys that is centuries old takes place every night. Now the only inhabitants of the Tower are ravens.

There is a legend that the Tower will fall if it loses its ravens. Therefore the birds with clipped wings are carefully guarded.

The Houses of Parliament and the Clock tower "Big Ben" The Houses of Parliament are the most beautiful buildings not only in London, but in the whole Europe. The Houses of Parliament are also called the Palace of West. The Queen enters the Palace of Westminster only on the day of the opening of Parliament at the beginning of the session. She wears a crown and many jewels when she makes her speech from the Throne in the House of Lords. A fire destroyed the old Houses of Parliament. The new Houses of Parliament were built in 1857. The famous 320 foot (97.5 meters) clock Tower is called "Big Ben" after Sir Benjamin Hall under whose direction the construction of the clock was conducted.

St. Paul's Cathedral. It took the architect Christopher Wren 35 years to build the Cathedral. It is one of the most beautiful pieces of architecture in Europe. It has a huge dome with a golden ball on the top. The interior of the Cathedral is very beautiful too.

The British Museum. There are many museums and art galleries in London. The British Museum is famous for its rich library ( about 7 000 000 books ).

It is also the Museum of History, Archaeology, Art and Ethnography. The British Museum contains the most important collections in Britain.

The Buckingham Palace. The Buckingham Palace is the place where the Queen of England lives. The Buckingham Palace Trafalgar Square Trafalgar Square is the geographical centre of London. It was named in the memory of Admiral Nelson's victory in the battle of Trafalgar in 1805. The tall Nelson's Column stands in the middle of the square. Opposite Trafalgar Square site the Nelson monument is the National Gallery and the National Portrait Gallery. They contain the finest art collections of the world.

Westminster Abbey. Westminster Abbey is the place where the coronation of nearly all kings and queens has taken place since the time of the Conquest. Many of them are buried here as well as some other famous people of the country.

Westminster Abbey Westminster Abbey is famous for its architecture and history.

There are the graves of some of the world's famous writers, poets and scientists: Chaucer, Charles Dickens, Tennyson, Thomas Hardy, Kipling and others are buried here. There in the Poet's Comer there are memorials to Shakespeare and Milton, Burns, Byron, Scott, Thackeray and Longfellow. Here is also the grave of the Unknown Soldier who was killed in the First World War.

Parks in London.

St. James Park. There are many parks in London: Hyde Park with its Speaker's Corner, St. James Park, and Kensington Park.

**Words:**

several - несколько

art gallery -картинная галерея

commerce -торговля; коммерция

sights - достопримечательности

fortress - крепость

to murder - убивать

whoever - кто бы ни

Royal - королевский

precious jewels - драгоценные камни

Court - двор (короля)

Bloody Tower - Кровавая башня

Duke of York - герцог Йоркекий

prison - тюрьма

beefeater-бифитер, служитель охраны лондонского Тауэра

to keep watch - дежурить

inhabltants - обитатели

raven - ворон

clipped wings - подрезанные крылья

is called after - назван в честь

construction - строительство

to conduct - проводить

grave - могила

Conquest - завоевание Англии норманнами ( 1066 г.)

densely populated - плотно населенный

**Questions:**

1. What is the capital of Great Britain?
2. What is London's population?
3. On what river does London stand?
4. Into what parts is London divided?
5. Why is the City called the business centre of London?
6. Who was buried in Westminster Abbey?
7. What is the West End famous for?
8. Why is the central square in London named Trafalgar Square?

**Вариант № 2**

## **Задание**

### **1. Read the text and answer the questions**

#### **Great Britain**

The official name of Great Britain is The United Kingdom of Great Britain and Northern Ireland. Great Britain is an island country. It is situated on the British Isles in the northwest of Europe. The English Channel 18 miles wide separates it from France. Great Britain is separated from Belgium and Holland by the North Sea, and from Ireland by the Irish Sea.

Parts of Great Britain. The United Kingdom of Great Britain consists of four parts: England, Wales, Scotland and Northern Ireland. England, Wales and Scotland occupy the territory of Great Britain and Northern Ireland is situated in the northern part of Ireland. The territory of the United Kingdom is about 244 000 (two hundred and forty-four thousand) square kilometers. The population is over 56 million. The capital is London.

The surface of the United Kingdom varies greatly. The northern and the western parts of the country are mountainous and are called the Highlands. All the rest is a vast plain that is called the Lowlands. The mountains are not very high. The rivers are not very long. The most important of them are the Severn and the Thames. There are many beautiful lakes in the mountainous part of the country.

No part of England has more than one hundred miles from the sea. The coast line has a number of fine bays and excellent natural harbors. World famous ports include London, Liverpool, Bristol, Plymouth, Southampton, Portsmouth, Dover and others.

Climate In Great Britain. The climate of Great Britain is mild the whole year round. The mountains, the Atlantic Ocean and the warm waters of the Gulf Stream influence the climate of Great Britain. Winters are not cold and summers are not hot. October is usually the wettest month, July-the hottest, and January-the coldest.

British Economy. Great Britain is a highly developed industrial country. It is known as one of the world's largest producers and exporters of iron and steel products, machinery and electronics, chemicals and textile. One of the chief industries is shipbuilding.

Great Britain is a country with old cultural traditions and customs. The most famous educational centres are Oxford and Cambridge universities. They are considered to be the intellectual centres of Europe. The education is not free, it is very expensive.

British Political System. The United Kingdom is a monarchy and the Queen is the head of the state. But in practice it is ruled by the elected government with the Prime Minister at the head. The British Parliament consists of two chambers: the House of Lords and the House of Commons.

#### **Words:**

to be situated - быть расположенным

British Isles - Британские острова

surface - поверхность

to vary- отличаться

high - высокий

low-низкий



land-земля, страна  
plain - равнина  
vast [va:st] - огромный  
lake-озеро  
shipbuilding - кораблестроение  
climate -климат  
mild - мягкий  
industry - промышленность  
to occupy - занимать  
population - население  
density - плотность  
to develop - развивать  
to produce - производить  
to export - экспортировать  
chemical - химический  
textile - текстиль  
government - правительство  
chamber - палата  
ruling - правящий

**Questions:**

1. What is the official name of Great Britain?
2. Where is it situated?
3. What parts does it consist of?
4. What is the territory and the population of Great Britain?
5. What city is the capital of Great Britain?
6. What is the surface of the country?
7. Are there any big rivers and lakes in Great Britain?
8. What is the climate on the British Isles like?
9. Is Great Britain a highly developed industrial country?
10. What goods does the British industry produce?
11. What big industrial cities are there in Great Britain?
12. What outstanding people of Great Britain do you know?
13. Are there any big educational establishments in Great Britain?
14. Is Great Britain is a constitutional monarchy?
15. What is the name of the Queen of Great Britain?
16. How many chambers does the British Parliament consist of? What are they?

**Раздел 2. Основной курс**

**Задание № 1**

## **Вариант № 1**

### **Задание**

#### **Write plural forms of the words:**

Woman, money, information, box, sheep, place, library, photo, mouse, lady, glasses, bush, dress, country, bus, party, wife, day, fish.

## **Вариант № 2**

### **Задание**

#### **Write plural forms of the words:**

Knife, knowledge, month, pen, hero, goose, company, life, deer, tomato, city, man, play, news, child, fruit, shelf, leaf, foot.

## **Задание № 2**

## **Вариант № 1**

### **Задание**

#### **1. Translate the words:**

solution, property, hypothesis, evidence, muscle, to advance, to attribute, to cause, to direct, to eliminate, to end, to favour, to set up; a number of, with regard to, to be in operation, dissimilar metals, in favour of, «animal electricity», electric current, electric battery, continuous current, undesirable chemical reactions.

#### **2. Read the text and answer the questions:**

### **Generating an Electric Current**

The first method used in producing an electric current was chemical in nature. Credit for its discovery is given to an Italian physician named Aloisio Galvani (1737–1798). One day while engaged in dissecting a frog, Galvani noticed the leg muscles contract whenever a nearby electric machine was in operation. Further investigation showed the same twitching effect to be obtained by simply connecting the nerve and muscle of the leg to dissimilar metals. But no such result was obtained if only one metal was used or if non-conductors were employed. There were obviously two possible sources of the phenomenon. Either the current was set up at the junction of the two metals or it was a property of the animal tissues. Galvani favoured the latter view and in 1791 announced his discovery, attributing the current to what he called "animal electricity" or as it came to be known, "galvanism". Galvani is an excellent example of a scientist who behaved most unscientifically with regard to a hypothesis which he himself had advanced. He became so prejudiced in favour of his animal magnetism theory that it was quite impossible for him to view objectively later evidence which definitely contradicted it and finally caused it to be discarded.

Another Italian, Alessandro Volta (1745–1827), a professor of physics in the University of Pavia, established the true source of the electric current. He demonstrated that it could be produced by (the action of dissimilar metals without the

presence of animal tissue of any sort. In the course of his experiments in 1800 he developed the first electric battery, a device known as a voltaic pile.

Although he tried a number of different materials he found that the best results were obtained when he used silver and zinc as the two metals. The pile consisted of a series of small discs of these and of cardboard, the latter having been soaked in a salt solution. Then he piled the discs up one on another in the order silver, zinc, cardboard, and so forth, ending with zinc. By connecting wires to the top and bottom discs he was able to get continuous electric currents which were of substantial size.

All the essentials of a modern electric cell or battery were present in the voltaic pile. Developments since that time have been largely directed toward making cells more convenient to use and toward eliminating various undesirable chemical reactions.

### **Примечания**

1 Credit for its discovery is given – честь его открытия принадлежит

2 twitching effect – эффект сокращения мышц

3 animal tissue – живая ткань

4 a voltaic pile – вольтов столб (гальваническая батарея)

### **Questions:**

1. What was the first method used in producing an electric current?

2. Whom is credit for its discovery given to?

3. How many possible sources of the phenomenon were there?

4. What was Galvani's discovery?

5. What can you say about Alessandro Volta?

6. What was Volta's idea?

### **Вариант № 2**

#### **Задание**

#### **1. Put down the Russian equivalents of these word combinations.**

runner blade, turbine runner, turbine shaft, water level, large capacity power plant, magnitude of the water head, daily inflow of water, turbine runner shaft

#### **2. Read the text and do the tasks:**

##### **Hydroelectric Power Plants**

Hydroelectric power plants are built on rivers. Large capacity hydroelectric power plants are commonly located at considerable distances from the consumers of electric power.

The production process at these plants is rather simple: the water flows into the hydroturbine runner, acts upon the runner blades and rotates the runner and the turbine shaft. The generator shaft is connected to the turbine runner shaft. The difference in the water level influences the power capacity of a plant, i.e. the magnitude of the water head and the daily inflow of water fluctuates considerably according to the season.

The production process is different at power plants of different constructions and of different kinds. In atomic power plants, for example, it is not so simple as in hydroelectric plants.

#### **3. Complete the sentences using the correct variant:**

1. Hydroelectric power plants are built
  - a) on rivers
  - b) on waterfalls
2. Large-capacity power plants are located
  - a) at a short distance from consumers of power.
  - b) at a considerable distance from consumers of power.
3. The production process at the plants
  - a) is very complex.
  - b) is rather simple.
4. The power capacity of a plant
  - a) remains constant.
  - b) changes considerably.
  - c) is influenced by the difference in the water level.
5. The daily inflow of water
  - a) fluctuates according to the consumption.
  - b) fluctuates according to the season.
6. The production process
  - a) depends upon the construction of the plant.
  - b) is the same at power plants of different constructions.

**4. Answer the questions:**

1. On what sites are hydroelectric power plants built?
2. Are large-capacity plants located far from consumers of power?
3. Is the production process at the plants simple or is it complex?
4. What influences the power capacity of a plant?
5. According to what factors does the daily inflow of water fluctuate?
6. Does the production process at the plant depend on its construction?

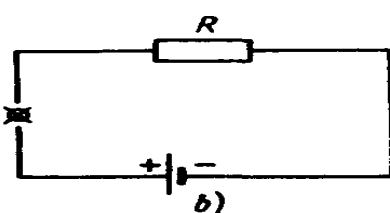
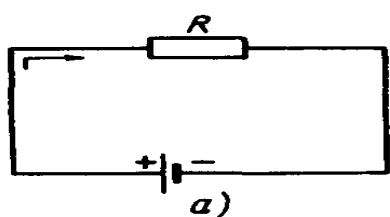
**Задание № 3**

**Вариант 1**

**Задание**

**1. Translate into Russian:**

1. An open and a short are troubles in a circuit.
2. A trouble in a circuit results in no current in it.
3. What does an open in a circuit result in?
4. What does a short in a circuit result in?
5. What does a trouble in a circuit result from?



**Fig. 1**

**2. Read the text and do the tasks:**

**Electric Circuit**

This is a circuit. Its elements are a voltage source, a resistor and a conductor. The circuit consists of a voltage source, a resistor and a conductor. A voltage source supplies current. A resistor reduces current. A conductor connects the elements of the circuit. Compare circuit a with circuit b. What is the difference between them? Current passes through circuit a while no current passes through circuit b. Circuit b has an open. No current through circuit b results from an open. An open and a short are troubles in a circuit. A trouble in a circuit may result in no current in it.

**3. Complete these sentences, using the correct variant:**

1. Circuit a consists of
  - a) resistors and conductors.
  - b) a voltage source and resistors. .
  - c) a voltage source, a resistor and a conductor.
2. A voltage source
  - a) conducts current.
  - b) reduces current.
  - c) supplies current.
3. A conductor
  - a) connects the 'elements.
  - b) supplies voltage.
  - c) conducts current.
4. A resistor
  - a) connects the elements.
  - b) supplies current.
  - c) reduces current.
5. No current results from
  - a) an open.
  - b) a short.

**4. Answer the following questions:**

1. What elements does a circuit consist of?
2. What is the function of a voltage source?
3. What is the function of a conductor?
4. What is the function of a resistor?
5. When is there no current in a circuit?
6. What does an open or a short result in?

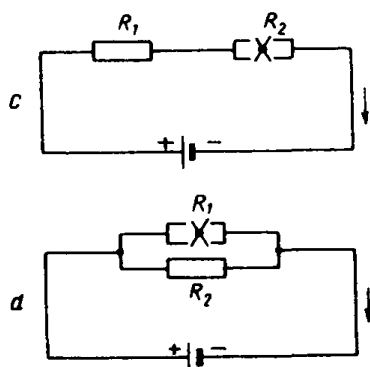
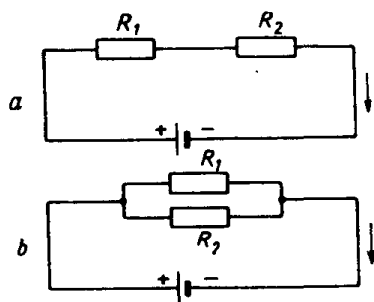


Fig.2

**Вариант 2  
Задание**

**1. Read the text and do the tasks**

**Series Circuit and Parallel Circuit**

Compare circuits a and b. Circuit a consists of a voltage source and two resistors. The resistors are connected in series. Circuit a is a series circuit. Circuit

b consists of a voltage source and two resistors. The resistors are connected in parallel. Circuit b is a parallel circuit.

A parallel circuit has the main line and parallel branches. In circuit b the value of voltage in  $R_1$  equals the value of voltage in  $R_2$ . The value of voltage is the same in all the elements of a parallel circuit while the value of current is different. A parallel circuit is used in order to have the same value of voltage. In circuit a the value of current in  $R_1$  equals the value of current in  $R_2$ . The value of current is the same in all the elements of a series circuit while the value of voltage is different. A series circuit is used in order to have the same value of current. In  $R_1$ ,  $V_1 = IR_1$  is the voltage drop in  $R_1$ . In  $R_2$  the voltage equals

$I \times R_2$ ;  $IR_2$  is the voltage drop in  $R_2$ . In circuit c a trouble in one element results in no current in the whole circuit. In circuit d a trouble in one branch results in no current in that branch only, a trouble in the main line results in no current in the whole circuit.

**2. Complete these sentences using the correct variant:**

1. A parallel circuit has
  - a) parallel branches only.
  - b) the main line and parallel branches.
2. A parallel circuit is used in order
  - a) to have the same value of current in all the elements.
  - b) to have the same value of voltage in all the elements.
3. In a parallel circuit a trouble in one branch
  - a) results in no current in that branch only.
  - b) results in no trouble in the whole circuit.
4. No current in a parallel circuit
  - a) results from a trouble in one branch.
  - b) results from a trouble in the main line.
5. The sum of  $IR$  voltage drops
  - a) equals the value of voltage in the circuit.
  - b) is less than the smallest voltage drop.
  - c) is more than the value of voltage in the circuit.

**3. Answer the following questions:**

1. What type of circuit has the main line and parallel branches?
2. What type of circuit is used in order to have the same value of current in all the elements?
3. What type of circuit is used in order to have the same value of voltage in all the elements?
4. What does a trouble in the main line result in?
5. What does a trouble in a branch result in?

**Задание № 4**

**Вариант 1**  
**Задание**

### 1. Put down the Russian for:

iron core, closed core, input voltage, output voltage, primary winding, secondary winding, step-up transformer, step-down transformer.

### 2. Read the text and do the tasks:

#### Transformers

A transformer is used to transfer energy. Due to the transformer electric power may be transferred at a high voltage and reduced at the point where it must be used to any value. Besides, a transformer is used to change the voltage and current value in a circuit.

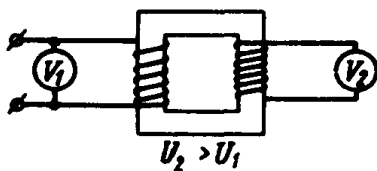
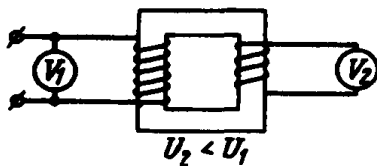


Fig.10

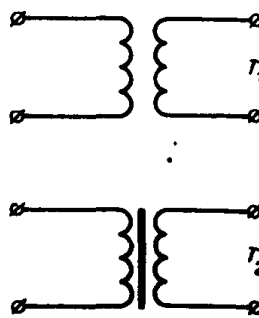


Fig.11

A two-winding transformer consists of a closed core and two coils (windings). The primary winding is connected to the voltage source. It receives energy. The secondary winding is connected to the load resistance and supplies energy to the load.

The value of voltage across the secondary terminal depends on the number of turns in it. In case it is equal to the number of turns in the primary winding the voltage in the secondary winding is the same as in the primary.

In case the secondary has more turns than the primary the output voltage is greater than the input voltage. The voltage in the secondary is greater than the voltage in the primary by as many times as the number of turns in the secondary is greater than the number of turns in the primary. A transformer of this type increases or steps up the voltage and is called a step up transformer. In case the secondary has fewer turns than the primary the output voltage is lower than the input. Such a transformer decreases or steps down the voltage, it is called a step-down transformer.

Compare T1 and T2 in the diagram. T1 has an iron core. For this reason it is used for low frequency currents. T2 has an air core and is used for high frequencies.

Common troubles in transformers are an open in the winding, a short between the primary and the secondary, and a short between turns. In case a transformer has a trouble it stops operating or operates badly. A transformer with a trouble should be substituted.

#### Complete the sentences using the correct variant:

1. A transformer is used
  - a) to store charge.
  - b) to prevent the change of energy.
  - c) to transfer energy.
  - d) to change the voltage and current value in a circuit.
2. Electric power is transferred at a high voltage and reduced to any value
  - a) due to resistors.

- b) due to capacitors.
- c) due to transformers.
- 3. A transformer consists of
  - a) cores only.
  - b) the primary and the secondary windings.
  - c) a core and the primary and the secondary windings.
- 4. The function of the primary is
  - a) to prevent the change of voltage.
  - b) to supply energy.
  - c) to receive energy.
- 5. The function of the secondary is
  - a) to receive energy.
  - b) to supply energy.
  - c) to transfer energy.
  - d) to decrease the value of charge.
- 6. A step-up transformer is used
  - a) to step down or decrease the secondary voltage.
  - b) to step up or increase the primary voltage.
- 7. A step-down transformer is used
  - a) to step down the secondary voltage.
  - b) to step down the primary voltage.
- 8. A transformer with an iron core
  - a) is used for high-frequency currents.
  - b) is used for low-frequency currents.
- 9. A transformer with an air core is used
  - a) for high-frequency currents and for low- frequency currents.
  - b) for high-frequency currents only.

## **Вариант 2**

### **Задание**

#### **1. Put down the Russian for:**

iron core, closed core, input voltage, output voltage, primary winding, secondary winding, step-up transformer, step-down transformer.

#### **2. Read the text and do the tasks:**

#### **Transformers**

A transformer is used to transfer energy. Due to the transformer electric power may be transferred at a high voltage and reduced at the point where it must be used to any value. Besides, a transformer is used to change the voltage and current value in a circuit.



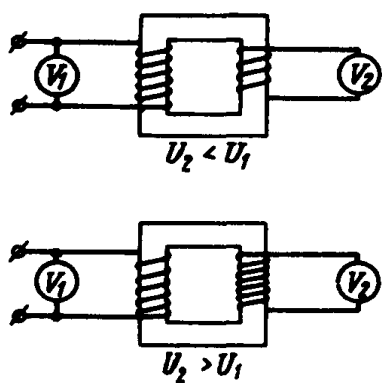


Fig.10

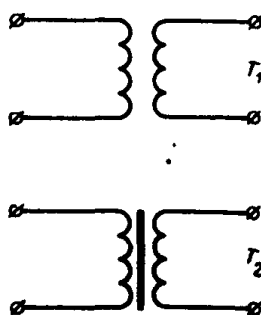


Fig.11

A two-winding transformer consists of a closed core and two coils (windings). The primary winding is connected to the voltage source. It receives energy. The secondary winding is connected to the load resistance and supplies energy to the load.

The value of voltage across the secondary terminal depends on the number of turns in it. In case it is equal to the number of turns in the primary winding the voltage in the secondary winding is the same as in the primary.

In case the secondary has more turns than the primary the output voltage is greater than the input voltage. The voltage in the secondary is greater than the voltage in the primary by as many times as the number of turns in the secondary is greater than the number of turns in the primary. A transformer of this type increases or steps up the voltage and is called a step up transformer. In case the secondary has fewer turns than the primary the output voltage is lower than the input. Such a transformer decreases or steps down the voltage, it is called a step-down transformer.

Compare T1 and T2 in the diagram. T1 has an iron core. For this reason it is used for low frequency currents. T2 has an air core and is used for high frequencies.

Common troubles in transformers are an open in the winding, a short between the primary and the secondary, and a short between turns. In case a transformer has a trouble it stops operating or operates badly. A transformer with a trouble should be substituted.

**Answer the questions:**

1. What is a transformer used for?
2. What does a transformer consist of?
3. What is the function of the primary winding?
4. What is the function of the secondary winding?
5. What type of transformer is called a step-up transformer?

**V. Контрольно-оценочные средства для промежуточной аттестации**

**Вариант № 1**

**Задание**

**1. Read the text and do the tasks:**

**SOURCES OF POWER.**

- Assemble - сборка, монтаж; собирать
- a.c. -(alternative current) переменный ток
- d. c. -(direct current) постоянный ток
- adjustment - регулировка, наладка, настройка

bunch -связка, пучок  
check-up - проверка  
to dissolve растворять  
clip - зажим

The industrial progress of mankind is based on power: power for industrial plants, machines, heating and lighting systems, transport, communication. In fact, one can hardly find a sphere where power is not required. At present most of the power required is obtained mainly from two sources. One is from the burning of fossil fuels, i. e. coal, natural gas and oil. The second way of producing electricity is by means of generators that get their power from steam or water turbines. Electricity so produced then flows through transmission lines to houses, industrial plants, enterprises, etc. It should be noted, however, that the generation of electricity by these conventional processes is highly uneconomic. Actually, only about 40 per cent of heat in the fuel is converted into electricity. Besides, the world resources of fossil fuels are not everlasting. On the other hand, the power produced by hydroelectric plants, even if increased many times, will be able to provide for only a small fraction of the power required in the near future. Therefore much effort and thought is being given to other means of generating electricity. One is the energy of hot water. Not long ago we began utilizing hot underground water for heating and hot water supply, and in some cases, for the generation of electricity.



Another promising field for the production of electric power is the use of ocean tides. Our engineers are engaged in designing tidal power stations of various capacities. Not long ago we began utilizing hot underground water for heating and hot water supply, and in some cases, for the generation of electricity. The energy of the sun which is being used in various ways represents a practically unlimited source. Using atomic fuel for the production of electricity is highly promising. It is a well-known fact, that one pound of uranium contains as much energy as three million pounds of coal, so cheap power can be provided wherever it is required. However, the efficiency reached in generating power from atomic fuel is not high, namely 40 per cent. No wonder, therefore, that scientists all over the world are doing their best to find more efficient ways of generating electricity directly from the fuel. They already succeeded in developing some processes which are much more efficient, as high as 80 per cent, and in creating a number of devices capable of giving a higher efficiency. Scientists are hard at work trying to solve these and many other problems.

## **2. Answer the questions:**

1. What is the industrial progress of mankind based on?
2. Which is the first widely applied method of producing electricity at present?

3. Which is the second way of generating power?
4. What do we use the energy of hot water for?
5. When and where did the first power station using ocean tides begin operating in Russia?
6. What can you say about the energy of the sun?
7. What fuel is the most promising for the production of electricity?
8. Is the efficiency of generating power from atomic fuel high or not?

### **3. Translate the sentences:**

1. The only force acting on a freely falling body in vacuum is gravity.
2. Radio waves pass through the atmosphere including clouds and fog.
3. Scientists have developed different types of lasers.
4. When placed over a fire, a substance becomes hot.
5. Russia is giving disinterested (бескорыстный) assistance to many countries.

## **Вариант № 2**

### **Задание**

#### **1. Read the text and do the tasks:**

### **THOMAS ALVA EDISON (1847 – 1931)**

battery - батарея; гальванический элемент

chemicals - химические препараты, химикаты

inspiration - вдохновение

incandescent lamp - лампа накаливания

perspiration - пот, испарина

transmission - передача, трансмиссия

Edison is known as one of the greatest inventors of his time. He invented so much that it is difficult to say which of his achievements is the greatest. He was an experimenter and a practical man more than a theoretician.

Thomas Alva Edison was born on February 11, 1847 in Milan, Ohio. Edison did not have any education. He went to school only for three months. Then he left it because the teacher considered him a dull boy. His mother became his teacher. The boy loved books and his mother said that he had a wonderful memory. Tom's mother was his first teacher. She gave him some books on science. The boy studied them and became interested in all kinds of experiments. When he first visited a public library and saw a lot of shelves with books he decided that he would know everything in the world. He measured the shelf and decided to read a foot of books every week. Edison began to work at 12 as a newspaper boy on a train. Once he saved the life of a little boy on the railway and the boy's father, a telegraphist, gave Edison lessons in telegraphy. Edison spent almost all his free time in experimenting. He made many important inventions at his laboratory which was full of batteries, chemicals and a great number of instruments.

In 1868 Edison built his first patented invention - an electromagnetic device. It is said that he planned to ask three thousand dollars for his invention, though he secretly decided he would sell it for two thousand if necessary. He was invited to a meeting of

businessmen who were interested in buying his invention, but when he was asked to name the price he was very nervous and quite unable to speak. "It is no use asking us a big price", said one of the businessmen, "we have already decided how much we will pay. Forty thousand dollars is our limit". With this money Edison established a workshop and began his career as a professional inventor at the age of twenty one.



Edison's inventions include the phonograph, gramophone, the dictaphone, the incandescent lamp and some other inventions. All his inventions were the result of hard work. He sometimes made thousands of experiments. According to his words the idea that a genius works only by inspiration was absurd. Edison continued to work all through his long life. He used to say: "Genius is 2 per cent inspiration and 98 per cent perspiration", he often said.

**2. Translate the words:**

telegraph, phonograph, megaphone, cinematograph.

**3. Find the answers in the text:**

1. When was Edison born? 2. What was he interested in? 3. When did Edison begin to work? 4. What did he use to say? 5. What do Edison's inventions include?

**Вариант № 3**

**Задание**

**1. Read the text and do the tasks:**

**HISTORY OF ELECTRONICS**

Electronics is the science dealing with devices operated by control of the movement of electric charges in a vacuum, in gases, or semiconductors: or with the processing of information or the control of energy by such devices. This definition covers the whole complex family of vacuum and gaseous electron tubes and their applications. It also includes metallic contact or semiconductor rectifiers and the transistors which utilize the control of electrons or positive charges (holes) to process information or to convert energy.

Electronics was born in the 19-th century. Like hydrolysis or chemistry it has come into its own only recently. Electronics first established itself, however, in wireless telegraphy. Industrial applications of electronics include control gauging, counting, heating, speed regulation, etc. But in a larger field, electronics leads to automatic control of large-scale industrial operations. Today, electronics has started a new era. Electronics devices are doing simple, but human-like thinking. Some industries are

controlled by electronic robots. Automation is the industrial key note of the day. Planes and rockets are electronically controlled. Some radiotelescopes work like radar to receive radio waves from outer space. Shortly speaking, electronics is not so much a new subject as a new way of looking at electricity.

## **2. Read the words:**

charge – заряд

semiconductor – полупроводник

tube – труба, трубка

rectifier – ректификатор, выпрямитель тока

utilize – использовать

hole – отверстие, шпур

convert – переводить, превращать

has come into its own – заняла подобающее место

keynote – основа

## **3. Answer the questions:**

1. What is electronics? 2. When was electronics born? 3. Where did electronics first establish itself? 4. What does electronics lead to in a larger field? 5. In what branches of science and technology is electronics used?

## **Вариант № 4**

### **Задание**

#### **1. Read the text and do the tasks:**

### **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 resistivities 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 of highest resistivity is known as the reverse or back direction. Semiconductors, such as the elements germanium and silicon, possess two types of current carriers, 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.

#### **Read the words:**

voltage – напряжение

germanium – германий

silicon – кремний

valence – валентность

### **3. Finish the sentences:**

1. A transistor is an electron -----.
2. The resistivity of semiconductors depends on -----.
3. The forward direction is -----.
4. The reverse or back direction is -----.
5. Semiconductors possess -----.

### **4. Answer the questions:**

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

*Приложение 1. Ключи к контрольно-оценочным средствам для текущего контроля*

## **Раздел 1. Вводно- коррективный курс**

### **Вариант 1**

#### **Ключ к заданиям:**

#### **Ответы на вопросы:**

1. London is the capital of Great Britain.
2. London's population is more than 7 million people.
3. London stands on both banks of the Thames.
4. London is divided into several parts.
5. There are many banks and offices there.
6. Famous writers, poets and scientists were buried here.
7. The West End is famous for museums, art galleries, largest department stores, cinemas and hotels.

8. It is named in the memory of Admiral Nelson's victory in the battle of Trafalgar in 1805.

## **Вариант 2**

**Ключ к заданиям:**

**Ответы на вопросы:**

1. The official name of Great Britain is The United Kingdom of Great Britain and Northern Ireland.
2. It is situated on the British Isles in the northwest of Europe.
3. It consists of 4 parts.
4. The territory is about 244000 square kilometers. The population is more than 56 million.
5. London is the capital of Great Britain.
6. The surface of the country varies greatly.
7. Yes, there are.
8. The climate on the British Isles is mild the whole year round.
9. Yes, it is.
10. It produces iron and steel products, machinery and electronics, chemicals and a textile.

## **Раздел 2. Основной курс**

### **Задание №1**

#### **Вариант 1**

**Ключ к заданиям:**

Women, money, information, boxes, sheep, places, libraries, photos, mice, ladies, glasses, bushes, dresses, countries, buses, parties, wives, days, fish.

#### **Вариант 2**

**Ключ к заданиям:**

Knives, knowledge, months, pens, heroes, geese, companies, lives, deer, tomatoes, cities, men, plays, news, children, fruit, shelves, leaves, feet.

### **Задание № 2**

#### **Вариант 1**

**Ключ к заданиям**

**1.перевод слов:**

раствор, свойство. гипотеза, доказательство (показание, признаки), мускул. продвигаться вперед, относить что- либо. за счет, вызывать причину, руководить, ликвидировать, закончить, выделять, учреждать ( устанавливать), несколько, что касается ( относительно). быть в деле, разные металлы, в пользу, «»животное электричество), электрический ток, электрическая батарея, постоянный ток, нежелательные химические реакции.

### **Ответы на вопросы:**

1. The first method used in producing an electric current was chemical in nature.
2. Credit for its discovery is given to an Italian physician named Aloisio Galvani.
3. There were two possible sources of the phenomenon.
4. In 1791 he announced his discovery, attributing the current to what he called ‘animal electricity’ or as it came to be known, ‘galvanism’.
5. A. Volta was a professor of physics in the University of Pavia.
6. He was able to get continuous electric currents which were of substantial size.

### **Вариант № 2**

#### **Ключ к заданиям:**

Рабочая лопасть турбины, рабочее колесо турбины, вал турбины, уровень воды, электростанция большой емкости, величина напора воды, ежедневный приток воды, вал лопасти турбины

**3.**

1. a) on rivers
2. b) at a considerable distance from consumers of power.
3. b) is rather simple.
4. b) changes considerably
5. b) fluctuates according to the season/
6. a) depends upon the construction of the plant

#### **4. Ответы на вопросы**

1. They are built on rivers.
2. Yes, they are
3. It is rather simple
4. The difference in the water level influences the power capacity of a plant.
5. The daily inflow of water fluctuated considerably according to the season.
6. Yes, it does.

### **Задание №3**

#### **Вариант 1**

#### **Ключ к заданиям**

##### **1. Перевод предложений:**

1. Разрыв и короткое замыкание – это проблемы в цепи.
2. Неисправность в цепи не приводит к току в ней.



3. Что приводит к размыканию в цепи?
4. Что приводит к короткому замыканию в цепи?
5. Из-за чего возникают проблемы в цепи?

3.

1. с

2.с

3. а

4. с

5.а

#### 4. Ответы на вопросы:

1. A circuit consists on a voltage source, a resister, a conductor.
2. A voltage source supplies current.
3. A conductor connects the elements of the circuit.
4. A resister reduces current.
5. A trouble in a circuit may result in no current in it.
6. An open and a short are troubles in a circuit.

#### Вариант 2

##### Ключ к заданиям:

2.

1	2	3	4	5
b	b	a	b	a

#### 3. Ответы на вопросы:

1. A parallel circuit has the main line and parallel branches.
2. A series circuit is used in order to have the same value of current.
3. A parallel circuit is used in order to have the same value of voltage.
4. A trouble in the main line results in no current in the whole circuit.
5. In circuit *d* a trouble in one branch results in no current in that branch only.

#### Задание № 4

##### Вариант 1

##### Ключ к заданиям:

#### 1.Перевод слов:

железный сердечник, закрытый сердечник, ввод напряжения, напряжение тока выхода, первичная обмотка, вторичная обмотка, повышающий трансформатор, понижающий трансформатор.

**2.**

1	2	3	4	5	6	7	8	9
c	c	c	c	b	a	b	b	a

## **Вариант 2**

**Ключ к заданиям:**

### **1. Перевод слов:**

железный сердечник, закрытый сердечник, ввод напряжения, напряжение тока выхода, первичная обмотка, вторичная обмотка, повышающий трансформатор, понижающий трансформатор.

### **2. Ответы на вопросы:**

1. A transformer is used to transfer energy.
2. It consists of a closed core and two coils ( windings).
3. The primary winding is connected to voltage source. It receives energy.
4. The secondary winding is connected to the load resistance and a supplies energy to the load.
5. A step-down transformer decreases or steps down the voltage.

*Приложение 2. Ключи к контрольно-оценочным средствам для промежуточного контроля.*

## **Вариант 1**

**Ключ к заданиям:**

### **Ответы на вопросы:**

1. The industrial progress of mankind is based on power: power for industrial plants, machines, heating and lighting systems, transport, communication.
2. One is from the burning of fossil fuels, i. e. coal, natural gas and oil.
3. The second way of producing electricity is by means of generators that get their power from steam or water turbines.
4. Not long ago we began utilizing hot underground water for heating and hot water supply, and in some cases, for the generation of electricity.

5. Not long ago we began utilizing hot underground water for heating and hot water supply, and in some cases, for the generation of electricity.
6. The energy of the sun which is being used in various ways represents a practically unlimited source.
7. Using atomic fuel for the production of electricity is highly promising.
8. It is not high.

## **2. Перевод предложений:**

1. Единственная сила, действующая на свободно падающее тело в вакууме - это гравитация.
2. Радиоволны проходят через атмосферу, включая облака и туман.
3. Ученые разработали различные типы лазеров.
4. При помещении вещества над огнем, оно становится горячим.
5. Россия оказывает бескорыстную помощь многим странам.

### **Вариант 2**

#### **Ключ к заданиям:**

2. телеграф, фонограф, мегафон, кинематограф.

## **3. Ответы на вопросы:**

1. Thomas Alva Edison was born on February 11, 1847 in Milan, Ohio.
2. He was interested in electricity.
3. Edison began to work at 12 as a newspaper boy in a train.
4. He used to say: "Genius is 2 per cent inspiration and 98 per cent perspiration".
5. He made many important inventions at his laboratory which was full of batteries, chemicals and a great number of instruments. Edison's inventions include the phonograph, gramophone, the dictaphone, the incandescent lamp and some other inventions.

### **Вариант 3**

#### **Ключ к заданиям:**

1. Electronics is the science dealing with devices operated by control of the movement of electric charges in a vacuum, in gases, or semiconductors: or with the processing of information or the control of energy by such devices.
2. Electronics was born in the 19-th century.
3. Electronics first established itself, however, in wireless telegraphy.
4. In a larger field, electronics leads to automatic control of large-scale industrial operations.
5. It is used in planes, rockets, radio telescopes and so on.

## **Вариант 4**

### **Ключ к заданиям:**

**3.**

1. A transistor is an electron device in which electronic conduction takes place within a semiconductor.
2. The resistivity of semiconductors depends on the direction of current flow.
3. The forward direction is the direction of easiest current flow of lowest resistivity.
4. The reverse or back direction is the direction of restricted current flow of highest resistivity.
5. Semiconductors possess two types of current carriers, namely, negative electrons and positive holes.

**4.**

1. Yes, it is.
2. Yes, they do.
3. Yes, it does.
4. Yes, I will.
6. Yes, they have.
7. No, they didn't.

## **VI. Дополнения и изменения к комплекту КОС на учебный год**

Дополнения и изменения к комплекту КОС на \_\_\_\_\_ учебный год по дисциплине

В комплект КОС внесены следующие изменения:

Дополнения и изменения в комплекте КОС обсуждены на заседании ПЦК

« \_\_\_\_\_ » \_\_\_\_\_ 20 \_\_\_\_\_ г. (протокол № \_\_\_\_\_ ).

Председатель ПЦК \_\_\_\_\_ / \_\_\_\_\_ /