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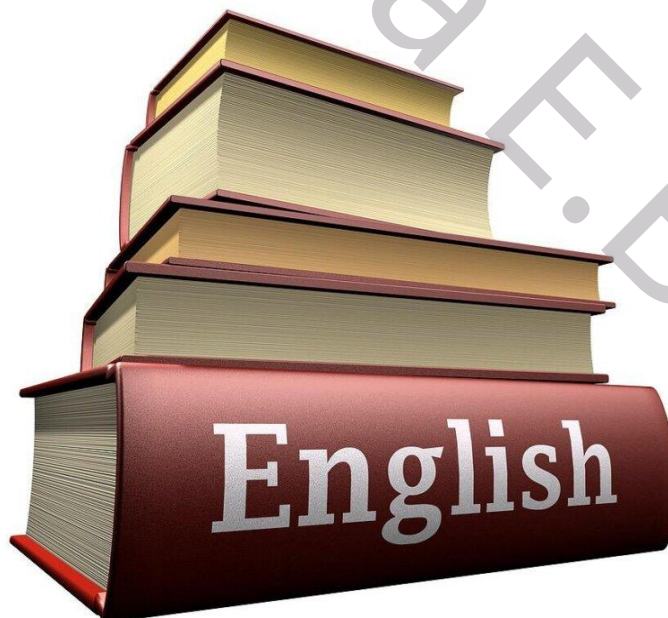
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**08.02.09 Монтаж, наладка и эксплуатация электрооборудования
промышленных и гражданских зданий**
(код специальности и ее наименование)

**ОГСЭ.03. ИНОСТРАННЫЙ ЯЗЫК В ПРОФЕССИОНАЛЬНОЙ
ДЕЯТЕЛЬНОСТИ (английский)**
(код и наименование учебной дисциплины)

КОНТРОЛЬНАЯ РАБОТА № 2

методические указания и контрольные задания
для обучающихся заочной формы обучения



г. Сосногорск

МЕТОДИЧЕСКИЕ УКАЗАНИЯ

Савенкова Е.В.

ОГСЭ.03. Иностранный язык в профессиональной деятельности (английский)
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Методические указания предназначены для обучающихся заочной формы обучения по специальности 08.02.09 Монтаж, наладка и эксплуатация электрооборудования промышленных и гражданских зданий.

Выполнение данных заданий поможет обучающимся систематизировать полученные знания.

Контрольная работа основывается на материале, не выходящем за рамки программных требований.

Содержание указаний соответствует учебной дисциплине.

Методические указания рассмотрены на заседании методической комиссии профессионального цикла ГПОУ «Сосногорского технологического техникума». Протокол № 5 от 02 ноября 2022 г.

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ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Обучение иностранному языку является составной частью процесса подготовки специалиста, который должен активно владеть иностранным языком как средством общения в повседневной жизни и в профессиональной деятельности. При заочной форме обучения в неязыковых техникумах владение английским языком означает:

- умение самостоятельно читать со словарем литературу обще бытового характера и по специальности профиля с тем, чтобы на основе приобретенных в вузе знаний, умений и навыков извлекать из нее полную и нужную информацию и при необходимости переводить тексты на родной язык;
- умение сделать монологическое сообщение в размере 18 - 20 фраз на все темы профильного характера, предусмотренные программой;
- умение вести беседу диалог на базе изученных тем в объеме 9 - 10 фраз со стороны обоих собеседников;
- умение выполнять письменные задания на базе изученного лексико-грамматического материала с применением специализированной литературы.

Область применения программы. Рабочая программа учебной дисциплины является частью основной образовательной программы среднего профессионального образования по подготовке специалистов среднего звена по специальности 08.02.09 Монтаж, наладка и эксплуатация электрооборудования промышленных и гражданских зданий (базовая подготовка).

Место дисциплины в структуре основной образовательной программы. Учебная дисциплина ОГСЭ.03. Иностранный язык в профессиональной деятельности (английский) является обязательной частью образовательной программы среднего профессионального образования по подготовке специалистов среднего звена по специальности 08.02.09 Монтаж, наладка и эксплуатация электрооборудования промышленных и гражданских зданий входит в общий гуманитарный и социально-экономический цикл.

Цели и планируемые результаты освоения учебной дисциплины:

Знания	Умения
<ul style="list-style-type: none">– правила построения простых и сложных предложений на профессиональные темы;– основные общеупотребительные глаголы (бытовая и профессиональная лексика);– лексический минимум, относящийся к описанию предметов, средств и процессов профессиональной деятельности;– особенности произношения;– правила чтения текстов профессиональной направленности.	<ul style="list-style-type: none">– понимать общий смысл четко произнесенных высказываний на известные темы (профессиональные и бытовые);– понимать тексты на базовые профессиональные темы участвовать в диалогах на знакомые общие и профессиональные темы;– строить простые высказывания о себе и о своей профессиональной деятельности кратко обосновывать и объяснить свои действия (текущие и планируемые); писать простые связные сообщения на знакомые или интересующие профессиональные темы;– правила построения простых и сложных предложений на профессиональные темы.

Учебная дисциплина ОГСЭ.03. Иностранный язык в профессиональной деятельности (английский) способствует формированию следующих **общих компетенций**:

Код	Наименование результата обучения
ОК 1.	Выбирать способы решения задач профессиональной деятельности применительно к различным контекстам.
ОК 2.	Осуществлять поиск, анализ и интерпретацию информации, необходимой для выполнения задач профессиональной деятельности.
ОК 3.	Планировать и реализовывать собственное профессиональное и личностное развитие.
ОК 4.	Работать в коллективе и команде, эффективно взаимодействовать с коллегами, руководством, клиентами.
ОК 5.	Осуществлять устную и письменную коммуникацию на государственном языке Российской Федерации с учетом особенностей социального и культурного контекста.
ОК 9.	Использовать информационные технологии в профессиональной деятельности.

1 СОДЕРЖАНИЕ УЧЕБНОЙ ДИСЦИПЛИНЫ

Контрольная работа № 2 (второй курс). Чтобы правильно выполнить контрольное задание № 2, необходимо усвоить следующие разделы и темы курса английского языка в соответствии с рабочей программой учебной дисциплины.

Раздел 1. Вводно-коррективный курс

Тема 1.3. Человек и природа. Введение в профессию

Содержание учебного материала

Работа с текстами «Power sources», «Basic concepts of a profession», «Education in Russia». Грамматический материал - существительное/артикли/единственное и множественное число/притяжательный падеж/; прилагательное (образование степеней сравнения); глагол (основные формы, спряжение, система времен). Подготовка тематических сообщений по изученным темам.

Раздел 2. Основной курс

Тема 2.1. Достижения и инновации в области науки и техники

Содержание учебного материала

Работа с текстами «Basic concepts of electricity and magnetism», «Electrical units and circuits», «Magnetism», «Electric lightning». Грамматический материал-местоимения (личные, притяжательные, возвратные, усилительные, указательные, неопределенные). Наречие. Степени сравнения наречий. Предлоги места. Типы вопросов (общий, специальный, вопрос к подлежащему, альтернативный, разделительный). Отрицательные предложения. Составление кратких резюме профильных текстов («Basic concepts of electricity and magnetism», «Electrical units and circuits», «Magnetism», «Electric lightning») на основе изученного материала.

2 МЕТОДИЧЕСКИЕ УКАЗАНИЯ ПО ВЫПОЛНЕНИЮ КОНТРОЛЬНОЙ РАБОТЫ

Условием допуска к зачету является выполнение контрольной работы № 2 – четвертый семестр.

Цель контрольных заданий – оказать помощь обучающемуся в его самостоятельной работе, а также проверить степень усвоения им учебного материала, начитанного за данный семестр.

Контрольное задание в данном пособии предлагается в 10 вариантах. Обучающийся должен выполнить один из десяти вариантов контрольного задания. Номер варианта выбирается по первой букве фамилии обучающегося по таблице 1.

Таблица 1 – Варианты для контрольной работы

Буква	Номера вариантов	Буква	Номера вариантов
1	2	3	4
А, Л, Х	1	Е, Р, Щ	6
Б, М, Ц	2	Ж, С, Э	7
В, Н, Ч	3	З, Т, Ю	8
Г, О, У	4	И, У, Я	9
Д, П, Ш	5	К, Ф	10

Оформление титульного листа (приложение А).

Контрольная работа должна быть написана в тетради четким, понятным почерком, без исправлений. На страницах работы следует оставить поля (3 см) для пометок и замечаний проверяющего преподавателя.

Левая страница	Правая страница
Поля: Английский текст	Русский текст: Поля

Обучающемуся, следует первый лист в тетради оставить чистым для написания замечаний преподавателя.

При выполнении работы следует сначала указывать задания контрольной работы, а затем само выполнение задания.

Выполненную контрольную работу обучающийся должен представить преподавателю для проверки за две недели до лабораторно-экзаменационной сессии.

Дается общая оценка «зачтена» или «не зачтена». Если работа не зачтена, в нее необходимо внести соответствующие исправления с учетом сделанных замечаний. Повторная проверка работы осуществляется, как правило, тем же преподавателем, который рецензировал ее в первый раз. Обучающиеся, не выполнившие контрольную работу или не получившие зачета по ней, к зачетам не допускаются.

Вариант 1

I. Read the text

TYPES OF TRANSFORMERS

There are different types of transformers. By the purpose they are classified into step-up transformers and step-down transformers. In a step-up transformer the output voltage is larger than the input voltage, because the number of turns on the secondary winding is greater than that of the primary. In a step down transformer the output voltage is less than input voltage as the number of turns on the secondary is fewer than that on the primary.

By the construction transformers are classified into core-type and shell type transformers. In the core-type transformers the primary and the secondary coils surround the core. In the shell type transformers the iron core surrounds the coils. Electrically they are equivalent. The difference is in the mechanical construction.

By the methods of cooling transformers are classified into air – cooled, oil – cooled and water – cooled transformers.

By the number of phases transformers are divided into single – phase and polyphase transformers.

Instrument transformers are of two types, current and potential.

A current transformer is an instrument transformer used for the transformation of a current at a high voltage into proportionate current at a low voltage.

Current transformers are used in conjunction with a.-c. meters or instruments where the current to be measured must be of low value. They are also used where high – voltage current has to be metered. A voltage transformer, which is also called a potential transformer, may be defined as an instrument transformer for the transformation of voltage from one value to another. This transformer is usually of a step – down type because it is used when a meter is installed for use on a high – voltage system.

Transformers operate equally well to increase the voltage and to reduce it.

The above process needs a negligible quantity of power.

Transformers are widely used in our everyday life. All radio – sets and all television sets are known to use two or more kinds of transformers. These are familiar examples showing that electronic equipment cannot do without transformers.

II. Guess the meaning of the following international words:

1) to classify; 2) method; 3) phase; 4) instrument; 5) system; 6) process; 7) radio; 8) television.

III. Give the English equivalents for the words below:

1) цель; 2) повышающий / понижающий трансформатор; 3) выходящее / входящее напряжение; 4) число витков; 5) механическое устройство.

IV. Translate into Russian the words and expression from the text:

- 1) core-type / shell-type transformers;
- 2) air-cooled / oil – cooled / water – cooled transformers;
- 3) current / potential transformers;
- 4) in conjunction with smth.;
- 5) electronic equipment.

V. Complete the sentences using the text:

1. By the purpose transformers are ...
2. By the construction transformers are ...
3. By the methods of cooling transformers are ...
4. By the number of phases transformers are ...
5. Transformers operate equally well...

VI. Answer the questions:

1. What voltage is larger in a step-up transformer and why?
2. What voltage is less in a step – down transformer and why?
3. What is the construction of a core – type transformer?

VII. Translate first five paragraphs of the text into Russian in written form.

Вариант 2

I. Read the text

TRANSFORMERS

One of the great advantages in the use of the alternating current is the ease with which the voltage may be changed by means of a relatively simple device known as a transformer. Although there are many different types of transformers and a great variety of different applications, the principles of action are the same in each case.

The transformer is a device for changing the electric current from one voltage to another. It is used for increasing or decreasing voltage. So the function of a transformer is to change voltage and current of an alternating system to meet requirements of the equipment used. It is known to be simple in elementary principle, and in construction that is it involves no moving parts.

Transformers change voltage through electromagnetic induction.

The principle parts of a transformer are: an iron core and, usually, two coils of insulated windings. One of them is called primary, another is called the secondary. The primary coil is connected to the source of power. The secondary coil is connected to the load. Thus, the primary is the coil to which power is supplied. The secondary is the coil from which power is taken. In scientific terms to produce an alternating magnetic flux in the iron core an alternating current must be passed through the primary coil.

This flux is considered to induce electromotive force in both primary and secondary coils. The secondary coil is open – circuited. Current flows in the secondary coil when the latter is connected to the external circuit or load. The flow of current in the secondary coil tends to reduce the flux in the core. Transformers are placed inside a steel tank usually with oil to improve the insulation and also to cool the device.

II. Guess the meaning of the following international words:

1) transformer; 2) type; 3) principle; 4) electric; 5) function; 6) elementary; 7) construction; 8) induction.

III. Translate into Russian the words and expressions from the text:

1) advantage; 2) voltage; 3) relatively simple; 4) application; 5) increase.

IV. Give the English equivalents to the words below:

- 1) переменный ток;
- 2) прибор;
- 3) принцип работы (действия);
- 4) электромагнитная индукция;
- 5) катушка;

V. State questions to the underlined words:

1. Voltage may be changed by *a transformer*.
2. *Transformers* change voltage through electromagnetic induction.
3. Transformer is used for *increasing or decreasing voltage*.

4. The *primary winding* is connected to the source of power.
5. Transformers are placed inside *a steel tank*.

VI. Answer the questions:

1. What kind of device is a transformer?
2. What are the functions of a transformer?
3. What are the principle parts of a transformer?

VII. Translate first four paragraphs of the text into Russian in written form.

САВЕЕНКОВА Е.В.

Вариант 3

I. Read the text

THE ALTERNATOR

The alternator is an electric machine for generating an alternating current by a relative motion of conductors and a magnetic field. The machine usually has a rotating field and a stationary armature. In a synchronous alternator the magnetic field is excited with a direct current. The direction of an induced e. m. f. is reversed each time when a conductor passes from a pole of one polarity to a pole at another polarity. Most machines of this type are used for lighting and power, but there are alternators with a revolving armature and a stationary field. They are used in small sizes mostly for special purposes.

Any electrical machine is reversible. When a machine is driven by a source of mechanical power, it works as a generator and delivers electrical power. If it is connected to a source of electrical power, it produces mechanical energy, and operates as a motor. The alternator may also be operated as a motor.

The a-c generator, or alternator, does not differ in principle from the d. c. generator. The alternator consists of a field structure and an armature. The field structure is magnetized by a field winding carrying direct current. An electromotive force is generated in the winding of the armature. In alternators the field is usually the rotating element and the armature is stationary. This construction has a number of advantages. Only two rings are needed with a rotating field.

These rings carry only a relatively light field current, at a voltage generally of 125, and seldom exceeding 250. The insulation of such rings is not difficult. A stationary armature requires no slip rings. The leads from the armature can be continuously insulated from the armature winding to the switchboard, leaving no bare conductor. The alternator with a rotating field may be further divided into the vertical and the horizontal types.

The vertical type is usually applied for large water-wheel generators where it is desirable to mount the water turbine below the generator. The more common horizontal type is used with diesel and steam engine drive. A low-speed alternator of this type is suitable for a diesel engine drive, a high speed alternator is suitable for a steam turbine drive.

II. Guess the meaning of the following international words:

1) transformer; 2) type; 3) principle; 4) electric; 5) function; 6) elementary; 7) construction; 8) induction.

III. Read the text and write out the key words, characterizing the alternator (all you can find)

IV. Translate into Russian the words and expressions from the text:

1) advantage; 2) voltage; 3) relatively simple; 4) application; 5) increase.

V. State 5 questions to the text

VI. Complete the sentences using the text:

- 1 The alternator is an electric machine for...
- 2 Most machines of this type are used for...
- 3 The a-c generator, or alternator, does not differ...
- 4 An electromotive force is generated in the winding of....
- 5 The field structure is magnetized by a...

VII. Translate first three paragraphs of the text into Russian in written form.

САВЕЕНКОВА Е.В.

Вариант 4

I. Read the text

MAIN STRUCTURAL ELEMENTS OF A D. C. MACHINE

A direct-current machine consists of two main parts, a stationary part, usually called the stator, designed mainly for producing a magnetic flux, and a rotating part, called the armature or the rotor. The stationary and rotating parts should be separated from each other by an air-gap. The stationary part of a d. c. machine consists of main poles, designed to create the main magnetic flux; commutating poles interposed between the main poles; and a frame. It should be noted here that sparkles operation of the machine would be impossible without the commutating poles. Thus, they should ensure sparkles operation of the brushes at the commutator.

The main pole consists of a laminated core the end of which facing the armature carries a pole shoe and a field coil through which direct current passes. The armature is a cylindrical body rotating in the space between the poles and comprising a slotted armature core, a winding inserted in the armature slots, a commutator, and a brush gear.

The frame is the stationary part of the machine to which are fixed the main and commutating poles and by means of which the machine is bolted to its bedplate. The ring shaped portion which serves as the path for the main and commutating pole fluxes is called the yoke. End-shields or frame-heads which carry the bearings are also attached to the frame.

Of these main structural elements of the machine the yoke, the pole cores, the armature core and the air-gap between the armature core and the pole core are known to form the magnetic circuit while the pole coils, the armature windings, the commutator and brushes should form the electric circuit of the machine.

II. Translate the following phrases, using the given variants of translation:

to consist – состоять : to consist of a stationary part and a rotating part;

separated – отдельный изолированный: the stationary and rotating parts should be separated from each other by an air gap;

to serve – служить в качестве чего-либо: the ring shaped portion or yoke serves as a path for the main and commutating pole fluxes.

III. Translate into Russian the words and expressions from the text:

main pole

direct current

a laminated core

stationary part

structural elements

IV. Complete the sentences using the text:

1 The stationary and rotating parts should be separated from...

2 The stationary part of a d. c. machine consists of...

3 The armature is a cylindrical body rotating in the space between...

4 The ring shaped portion which serves as the path for the main and commutating pole fluxes is called...

V. State 5 questions to the text

VI. Guess the meaning of the following international words:

1) to classify; 2) method; 3) phase; 4) instrument; 5) system; 6) process; 7) radio; 8) television.

VII. Translate first three paragraphs of the text into Russian in written form.

САВЕЕНКОВА Е.В.

Вариант 5

I. Read the text

GENERATORS

The powerful, highly efficient generators and alternators that are in use today operate on the same principle as the dynamo invented by the great English scientist Faraday in 1831. Dynamo-electric machines are used to supply light, heat and power on a large scale. These are the machines that produce more than 99.99 per cent of all the world's electric power.

There are two types of dynamos – the generator and the alternator. The former supplies d. c. which is similar to the current from a battery and the latter provides a. c. To generate electricity both of them must be continuously provided with energy from some outside source of mechanical energy such as steam engines, steam turbines or water turbines.

A generator is an electric machine, which converts mechanical energy into electric energy. There are direct-current (d. c.) generators and alternating current (a. c.) generators. Their construction is much alike. A d. c. generator consists of stationary and rotating elements. The stationary elements are: the yoke or the frame and the field structure. The yoke forms the closed circuit for the magnetic flux. The function of the magnetic structure is to produce the magnetic field.

The rotating elements are: true armature and the commutator. They are on the same shaft. The armature consists of the core and the winding.

The winding is connected to the commutator. With the help of the brushes on the commutator that conduct the electric current to the line the winding is connected to the external circuit. The stationary element of an a. c. generator is called a stator. The rotating element is called a rotor. The essential difference between a d. c. generator and a. c. generator is that the former has a commutator by means of which the generated e. m. f. is made continuous, i. e. the commutator mechanically rectifies the alternating e. m. f. so that it is always of the same polarity.

D. c. generators are used for electrolytic processes such as electroplating. Large d. c. generators are employed in such manufacturing processes as steel making. The d. c. generator of small capacities is used for various special purposes such as arc welding, automobile generators, train lighting systems, etc. It also finds rather extensive use in connection with communication systems.

II. Give the Russian equivalents for the following English words and word combinations:

1) generator; 2) alternator; 3) steam turbine; 4) water turbine; 5) armature; 6) rotor; 7) stationary; 8) commutator; 9) stator; 10) yoke; 11) brushes; 12) core; 13) frame; 14) winding.

III. Fill in the blanks

1. A generator is an electric machine, which a) ----- mechanical energy into electrical energy.

2. A direct-current generator consists of b) ----- .
3. The dynamo was invented by c) ----- in 1831.
4. The d.c. generator is used for various purposes such as d) ----- .

IV. Work out the plan of the text

V. State 5 questions to the text

VI. Answer the questions:

1. What is dynamo-electric machines are used to?
2. What the rotating elements do you know?
3. What is the winding connected to?

VI. Translate first four paragraphs of the text into Russian in written form.

Савенкова Е.В.

Вариант 6

I. Read the text

DYNAMOS

The term «dynamo» is applied to machines which convert either mechanical energy into electrical energy or electrical energy into mechanical energy by utilizing the principle of electromagnetic induction. A dynamo is called a generator when mechanical energy supplied in the form of rotation is converted into electrical energy. When the energy conversion takes place in the reverse order the dynamo is called a motor. Thus a dynamo is a reversible machine capable of operation as a generator or motor as desired.

A generator does not create electricity, but generates or produces an induced electromotive force, which causes a current to flow through a properly insulated system of electrical conductors external to it. The amount of electricity obtainable from such a generator is dependent upon the mechanical energy supplied. In the circuit external to a generator the e. m. f. causes the electricity to flow from a higher or positive potential to a lower or negative potential. In the internal circuit of a generator the e. m. f. causes the current to flow from a lower potential to a higher potential. The action of a generator is based upon the principles of electromagnetic induction.

The dynamo consists essentially of two parts: a magnetic field, produced by electromagnets, and a number of loops or coils of wire wound upon an iron core, forming the armature.

These parts are arranged so that the number of the magnetic lines of force of the field threading through the armature, coils will be constantly varied, thereby producing a steady e. m. f. in the generator or a constant torque in the motor.

II. Give the Russian equivalents for the following English words and word combinations:

1) armature; 2) rotor; 3) stationary; 4) commutator; 5) stator; 6) yoke; 7) brushes; 8) core; 9) frame; 10) winding.

III. Find the Russian equivalents for the following English words and word combinations:

1) to be applied to smth.;
2) to convert smth. into smth.;
3) rotation;
4) to utilize;
5) a properly insulated system.

IV. Answer the questions

1. What term can be applied to machines converting mechanical energy into electrical?
2. What kind of machine is a dynamo?
3. What is the function of a generator?
4. What is the action of a generator based upon?
5. What parts does the dynamo consist of?

V. State 5 questions to the text

VI. Complete the sentences using the text:

A generator does not create electricity, but...

The action of a generator is...

The dynamo consists essentially of...

VII. Translate first three paragraphs of the text into Russian in written form.

САВЕНКОВА Е.В.

I. Read the text

ALTERNATING CURRENT

Current is defined as increment of electrons. The unit for measuring current was named in honor of A.M. Ampere, the French physicist. Thus it is called ampere. The symbol for current is I. The electric current is a quantity of electrons flowing in a circuit per second of time. The electrons move along the circuit because the e. m. f. drives them. The current is directly proportional to the e. m. f.

A stream of electrons in a circuit will develop a magnetic field around the conductor along which the electrons are moving. The strength of the magnetic field depends upon the current strength along the conductor. The direction of the field is dependent upon the direction of the current.

If the force causing the electron flow is indirect, the current is called direct (d. c.). If the force changes its direction periodically the current is called alternative (a. c.).

Alternating current is the current that changes direction periodically. The electrons leave one terminal of the power supply, flow out along the conductor, stop, and then flow back toward the same terminal. A voltage that caused current reverses its polarity periodically. This is properly called an alternating voltage.

The power supply that provides the alternating voltage actually reverses the polarity of its terminals according to a fixed periodic pattern. A given terminal will be negative for a specific period of time and drive electrons out through the circuit. Then, the same terminal becomes positive and attracts electrons back from the circuit. This voltage source cannot be a battery. It must consist of some types of rotating machinery.

II. Guess the meaning of the following international words:

1) physicist, 2) ampere, 3) symbol, 4) second, 5) polarity, 6) period, 7) battery.

III. Translate into Russian the words and expression from the text:

- 1) increment of electrons;
- 2) measuring;
- 3) to drive;
- 4) directly proportional;
- 5) conductor;

IV. Give the English equivalents for the words below:

1) переменный ток, 2) за секунду, 3) количество электронов, 4) поток электронов, 5) магнитное поле.

V. Complete the sentences using the text:

1. The electric current is ...
2. The unit for measuring current is ...
3. A stream of electrons in a circuit will develop ...
4. The current is called direct if ...

5. The current is called alternating if...

VI. Answer the questions:

1. Why do electrons move along the circuit?
2. What does the strength of the magnetic field depend upon?
3. What does the direction of the field depend upon?

VII. Translate first four paragraphs of the text into Russian in written form.

Савенкова Е.В.

I. Read the text

ELECTRIC CURCUITS

The concepts of electric charge and potential are very important in the study of electric currents. When an extended conductor has different potentials at its ends, the free electrons of the conductor itself are caused to drift from one end to the other. The potential difference must be maintained by some electric source such as electrostatic generator or a battery or a direct current generator. The wire and the electric source together form an electric circuit, the electrons are drifting around it as long as the conducting path is maintained.

There are various kinds of electric circuits such as: open circuits, closed circuits, series circuits, parallel circuits and short circuits. To understand the difference between the following circuit connections is not difficult at all. If the circuit is broken or «opened» anywhere, the current is known to stop everywhere. The circuit is broken when an electric device is switched off. The path along which the electrons travel must be complete otherwise no electric power can be supplied from the source to the load. Thus the circuit is “closed” when an electric device is switched on.

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 the houses are generally connected in parallel.

The “short” circuit is produced when the current can return to the source of supply without control. The short circuits often result from cable fault or wire fault. Under certain conditions the short circuit may cause fire because the current flows where it was not supposed to flow. If the current flow is too great a fuse is used as a safety device to stop the current flow.

II. Guess the meaning of the following international words:

concept, potential, electrostatic generator, aluminum, parallel, typical, control.

III. Give the English equivalents for the following words and word combinations:

1) электрические цепи, 2) электрический заряд, 3) проводник, 4) сопротивление, 5) движение электронов.

IV. Say whether these sentences are true or false:

1. When an extended conductor has the same potential at its ends, free electrons are drifting from one end to another.
2. The wire and the electric source together form an electric circuit.

3. A path of any material will allow current to exist.
4. Silver, copper and gold oppose very strongly.
5. The slighter the opposition is, the better the insulator is.

V. Complete the sentences using the text:

1. The potential difference must be maintained by ...
2. Materials that offer slight opposition are called ...
3. The best insulators are ...

VI. Answer the questions:

1. What concepts are very important in study of electric current?
2. What forms an electric circuit?
3. What materials are the best conductors and insulators?

VII. Translate first three paragraphs of the text into Russian in written form.

Савенкова Е.В.

I. Read the text

THE NATURE OF ELECTRICITY

Practical electricity is produced by small atomic particles known as electrons. It is the movement of these particles which produce the effects of heat and light.

The pressure that forces these atomic particles to move, the effects they encounter opposition and how these forces are controlled are some of the principles of electricity.

Accepted atomic theory states that all matter is electrical in structure. Any object is largely composed of a combination of positive and negative particles of electricity. Electric current will pass through a wire, a body, or along a stream of water. It can be established in some substances more readily than in others, that all matter is composed of electric particles despite some basic differences in materials. The science of electricity then must begin with a study of the structure of matter. Matter is defined as any substance which has mass (or weight) and occupies space. This definition should be broad enough to cover all physical objects in the universe. Wood, water, iron, and paper are some examples of matter. Energy is closely related to, but not to be confused with, matter. Energy does not have mass, and it does not occupy space. Heat and light are examples of energy.

The smallest particle of matter which can be recognized as an original substance was thought to be a unit called the atom. Recently scientists have found particles even smaller than atoms, but our theories are still based on the atom. The atom consists of a nucleus and a cloud of electrons. It is generally agreed that the electrons are small particles of electricity, which are negative in nature. These particles orbit the nucleus in much the same fashion that planets orbit a sun.

II. Guess the meaning of the following international words:

Electricity, electron, effect, structure, combination, material, mass, energy, atom, orbit

III. Give the English equivalents for the words below:

1) производить; 2) частица; 3) тепло и свет; 4) напряжение; 5) сила; 6) вещество.

IV. Translate into Russian the words and expressions from the text:

1) atomic particle; 2) effects of heat and light; 3) encounter opposition; 4) principles of electricity; 5) composed (of).

V. Complete the sentences using the text:

1. Electricity is produced by ...
2. The effects of heat and light are produced by ...
3. According to the accepted atomic theory all matter is ...
4. Any object is composed of ...
5. Matter is defined as ...

VI. Answer the questions:

1) What are the principles of electricity?

- 2) What must the science of electricity begin with?
- 3) Are there any differences between energy and matter? What are they?

VII. Translate first three paragraphs of the text into Russian in written form.

Савенкова Е.В.

Вариант 10

I. Read the text

ELECTRICAL MEASURING INSTRUMENTS AND UNITS

Any instrument which measures electrical values is called a meter. An ammeter measures the current in amperes. The abbreviation for the ampere is amp. A voltmeter measures the voltage and the potential difference in volts.

The current in a conductor is determined by two things – the voltage across the conductor and the resistance of the conductor. The unit by which resistance is measured is called the ohm. The resistance in practice is measured with the ohm-meter. A wattmeter measures electrical power in watts. Very delicate ammeters are often used for measuring very small currents. A meter whose scale is calibrated to read a thousandth of an ampere is called a micro ammeter or galvanometer.

Whenever an ammeter or voltmeter is connected to a circuit to measure electric current or potential difference, the ammeter must be connected in series and the voltmeter in parallel. To prevent a change in the electric current when making such an insertion, all ammeters must have a low resistance. Hence, most ammeters have a low resistance wire, called a shunt, connected across the armature coil.

A voltmeter, on the other hand, is connected across that part of the circuit for which a measurement of the potential difference is required.

In order that the connection of the voltmeter to the circuit does not change the electric current in the circuit, the voltmeter must have high resistance. If the armature coil does not have large resistance of its own, additional resistance is added in series.

The heating effect, electrostatic effect, magnetic and electromagnetic effects of electric current are used in order to produce the deflecting torque. The resulting measuring instruments are called: (a) hot wire, (b) electrostatic, (c) moving iron, (d) moving coil, and (e) induction. Various types are used with both d. c. and a. c., but the permanent-magnet moving coil instrument are used only with d. c., and the induction type instruments are limited to a. c.

II. Guess the meaning of international words:

1) instrument; 2) fact; 3) abbreviation; 4) voltmeter; 5) ohm; 6) ohmmeter; 7) wattmeter; 8) galvanometer.

III. Give the Russian equivalents to the words below:

1) resistance; 2) to offer; 3) scale; 4) to prevent; 5) armature.

IV. Give the English equivalents to the words and word-combinations:

1) амперметр; 2) разница потенциалов; 3) определяют; 4) чувствительный; 5) градуировать.

V. Answer the questions:

1. How are electrical values measuring instruments called?
2. How must the ammeter and the voltmeter be connected?

3. What resistance must the ammeter and the voltmeter have?

VI. Make up sentences corresponding to the contents of the text:

- | | | |
|-------------------|----------|-----------------------------------|
| 1. A meter | | the potential difference in volts |
| 2. An ammeter | | the resistance |
| 3. An ohmmeter | measures | small currents |
| 4. A voltmeter | | electrical values |
| 5. A galvanometer | | the current |

VII. Translate first four paragraphs of the text into Russian in written form.

Савенкова Е.В.

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ПРИЛОЖЕНИЕ
ПРИЛОЖЕНИЕ А

Образец заполнения титульного листа домашней контрольной работы

Государственное профессиональное образовательное учреждение
«Сосногорский технологический техникум»

ОТДЕЛЕНИЕ СРЕДНЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ
(ЗАОЧНАЯ ФОРМА ОБУЧЕНИЯ)

КОНТРОЛЬНАЯ РАБОТА № 2

по учебной дисциплине ОГСЭ.03. Иностранный язык в профессиональной
деятельности (английский)

**08.02.09 Монтаж, наладка и эксплуатация электрооборудования
промышленных и гражданских зданий**

(код специальности и ее наименование)

Курс - ____
Шифр - ____
Вариант - ____

Исполнитель: № группы _____
Обучающийся группы _____

(фамилия, имя, отчество полностью)

Домашний адрес: _____

Дата сдачи контрольной работы
« ____ » _____ 20__ г.

Преподаватель: _____

Отметка: _____

« ____ » _____ 20__ г.

Подпись преподавателя _____

г. Сосногорск 20__ год