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МЕТОДИЧЕСКИЕ УКАЗАНИЯ

к выполнению контрольных работ № 1,2,3,4
по дисциплине «Английский язык»
для студентов I-II курсов факультета Радиоэлектроники
специальностей «Электронная техника», «Радиотехника»
заочной формы обучения

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Методические указания к выполнению контрольных работ № 1,2,3,4 по дисциплине «Английский язык» для студентов I-II курсов факультета Радиоэлектроники специальностей «Электронная техника», «Радиотехника» заочной формы обучения / Сост. Е.В. Василюк, И.И. Строева, И.А. Матросова. – Севастополь: Изд-во СевНТУ, 2008. – 40с.

Целью методических указаний является оказание помощи студентам факультета Радиоэлектроники в изучении английского языка. Варианты заданий включают предложения на различные грамматические явления, которые студент должен изучить самостоятельно. Тексты, данные в заданиях, имеют профессиональную направленность, каждый текст снабжен вокабуляром, который облегчает понимание содержания текста и должен быть усвоен в процессе работы с текстом.

Методические указания утверждены на заседании кафедры Практики романтических и германских языков (протокол №3 от 24.10.2007 г.)

Допущено учебно-методическим центром и научно-методическим Советом СевНТУ в качестве методических указаний.

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ВВЕДЕНИЕ

Программа курса английского языка для студентов-заочников технических специальностей СевНТУ ставит целью практическое владение иностранным языком по специальности, следовательно, курс обучения иностранному языку является профессионально ориентированным и овладение английским языком рассматривается как приобретение студентами коммуникативной компетенции, позволяющей использовать полученные знания в практической деятельности.

Контроль за работой студента и усвоением необходимого объема учебного материала осуществляется посредством проверки контрольных заданий, определяемых учебным планом, зачетами и экзаменами.

К зачету допускаются студенты, выполнившие все письменные и устные работы, получившие зачет по контрольным работам и сдавшие нормы чтения, установленные для данного курса, а также проработавшие тексты контрольных работ.

К экзамену по английскому языку допускаются студенты, сдавшие зачеты за предшествующие экзамену курсу, получившие зачеты по контрольным работам и сдавшие нормы чтения иностранной литературы за данный учебный период.

1. КОНТРОЛЬНАЯ РАБОТА №1

1.1. Указания к выполнению контрольной работы № 1.

Для того, чтобы выполнить контрольную работу №1, необходимо усвоить следующие разделы курса английского языка:

- 1) Имя существительное, артикли, множественное число имен существительных. Выражение падежных отношений в английском языке с помощью предлогов окончаний; порядок слов в предложении. Использование существительного в функции определения.
- 2) Степени сравнения имен прилагательных и наречий, сравнительные конструкции.
- 3) Местоимения: личные, указательные, притяжательные, вопросительные, неопределенные.
- 4) Формы настоящего, прошедшего и будущего времени indefinite действительного залога изъявительного наклонения. Повелительное наклонение и его отрицательную форму. Выражение приказания и просьбы с помощью глагола let.
- 5) оборот there + be .

1.2. Образец выполнения контрольной работы №1

Задание 1.

This company produces different receivers.

Эта компания производит разные радиоприемники.

produces - 3 лицо, единственное число, Present Indefinite от глагола to produce.

receivers – множественное число существительного receiver

Задание 5.

Yesterday he bought a new computer.

Вчера он купил новый компьютер.

bought - Past Indefinite Active от глагола to buy .

1.3. Оформление контрольной работы и выбор варианта

- 1) Студент должен выполнить один из пяти представленных вариантов в соответствии с последними цифрами номера зачетной книжки или студенческого билета: студенты, шифр которых оканчивается на 1 и 2 выполняют вариант №1, на 3 или 4 -№2, на 5 или 6 - №3, на 7 или 8 - № 4, на 9 или 0 - №5.

2) Выполнять контрольные работы следует в отдельной тетради. На обложке обязательно указывается № контрольной работы, фамилия, имя, отчество, вариант, номер студенческого билета или зачетки и адрес.

3) Контрольные работы выполняются аккуратно, разборчивым почерком. Для замечаний рецензента следует оставлять поля.

4) При выполнении контрольной работы обязательно переписывайте само задание и предложения а также текст на английском языке.

5) Материал контрольной работы следует располагать в тетради по следующему образцу:

левая страница		правая страница	
Поля	Английский текст	Русский текст	Поля

6) Выполненная контрольная работа должна быть представлена на проверку в установленные сроки.

7) При наличии ошибок незачтенная работа с замечаниями рецензента возвращается на доработку и исправление ошибок. Эта работа делается в той же тетради после выполненной работы.

8) Правильно выполненная работа рекомендуется рецензентом к защите.

9) Помимо выполнения контрольных работ, студент обязан к каждому зачету усваивать активную лексику по специальности из каждого текста всех без исключения вариантов, то есть должен уметь переводить тексты всех вариантов.

1.4. Контрольные задания

Вариант № 1

Задание 1. Перепишите следующие предложения. Определите по грамматическим признакам, какой частью речи являются слова, оформленные окончанием -s; и какую функцию это окончание выполняет, т.е. служит ли оно:

- а) показателем 3-го лица единственного числа в Present Indefinite;
- б) признаком множественного числа имени существительного;
- в) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

1. An open and a short are troubles in a circuit.
2. The circuit consists of three main elements.
3. Today's atomic power plant provides 80% of electricity.

Задание 2. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именами существительными.

1. He shows his water-proof watch.

2. An electromotive force causes the electron motion.
3. There are some types of the transmission lines.

Задание 3. Перепишите следующие предложения, содержащие разные формы сравнения, и переведите их на русский язык.

1. The greater the number of free electrons in any metal, the higher is its conductivity.
2. The temperature of this resistor becomes higher.
3. The ammeter is one of the most common meters.

Задание 4. Перепишите и переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

1. No changes move through an open circuit.
2. You can use any type of the circuits in your experiments.
3. A capacitor stores some electric energy.

Задание 5. Перепишите следующие предложения, определите в них видовременные формы глаголов и укажите их инфинитив; переведите предложения на русский язык.

1. The voltage output increases.
2. They connected cells in parallel.
3. Next time the temperature of a resistor will be much higher.

Задание 6. Перепишите текст и письменно переведите.

ELECTRONIC ENGINEERING

Electronic engineering deals with the research, design, integration and application of circuits and devices that we use for transmission and processing of information.

Engineers in the field of electric and electronic engineering know all the aspects of electrical communications, from fundamental questions such as "What is information?" to the highly practical, such as the design of telephone systems. In their work they rely on various branches of advanced mathematics, such as linear systems, linear algebra, differential equations and probability theory. Engineers design, test, adjust and improve communication systems. Besides, they work on control systems that we use in automated manufacturing and in robotics. Due to engineer's work we have so many modern telephone systems, cellphones and digital cameras.

Major developments in the field of communications and control are the replacement of analogue systems with digital systems; instead of copper cables we use fibre optics. Digital systems offer far greater immunity to electrical noise. Fibre optics is likewise immune to interference. They also have great carrying capacity and are extremely light and inexpensive to manufacture.

fibre optics - оптоволоконные immunity - защищенность, невосприимчивость
 carrying capacity - пропускная способность

Задание 7. Ответьте на вопрос: What does electronic engineer deal with?

Вариант № 2

Задание 1. Перепишите следующие предложения. Определите по грамматическим признакам, какой частью речи являются слова, оформленные окончанием -s; и какую функцию это окончание выполняет, т.е. служит ли оно:

- а) показателем 3-го лица единственного числа в Present Indefinite;
- б) признаком множественного числа имени существительного;
- в) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

1. The value of current is the same in all the elements of a series circuit.
2. A trouble in a circuit results in no current in it.
3. The ohmmeter's readings are 75 ohms.

Задание 2. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именами существительными.

1. The cell connection in parallel increases the current capacity.
2. The resistance value equals 2.5 ohms.
3. Do you know the voltage drop across each resistor?

Задание 3. Перепишите следующие предложения, содержащие разные формы сравнения, и переведите их на русский язык.

1. The higher the atmosphere, the less is its pressure.
2. The temperature rises higher. A resistor gets open.
3. This electric device is one of the most useful one.

Задание 4. Перепишите и переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

1. There is no energy storage facility here.
2. You can connect any element of a circuit in parallel.
3. There are some new materials for the production of insulators.

Задание 5. Перепишите следующие предложения, определите в них видовременные формы глаголов и укажите их инфинитив; переведите предложения на русский язык.

1. The circuit has a trouble.
2. They used that new method of the measurement.
3. People will use solar power much more than nowadays.

Задание 6. Прочтите, перепишите текст и письменно переведите.

ELECTRIC CIRCUIT

This is a circuit. Its elements are a voltage source, a resistor and a conductor. A voltage source supplies current. A resistor reduces current. A conductor connects the elements of the circuits. An open and a short are troubles in a circuit. A trouble in a circuit may result in no current in it.

There are two types of circuits. One of them is a parallel circuit. It has the main line and parallel branches. The value of voltage is the same in all the elements of a parallel circuit while the value of current is different. Engineers use parallel circuits if they want to have the same value of voltage.

Another type of circuits is a series circuit. It has no parallel branches. All the elements of it are in series. The value of current is the same in all the elements of a series circuit while the value of voltage is different. Engineers use series circuits if they need the same value of current.

In a series circuit a trouble in one element results in no current in the whole circuit. In a parallel circuit a trouble in one branch results in no current in that branch only. But a trouble in the main line results in no current in the whole circuit.

voltage source - источник напряжения, open – разрыв, short - замыкание
branch – ветвь, value – значение, in series – последовательно

Задание 7. Ответьте на вопрос: What is the difference between series and parallel circuits?

Вариант № 3

Задание 1. Перепишите следующие предложения. Определите по грамматическим признакам, какой частью речи являются слова, оформленные окончанием -s; и какую функцию это окончание выполняет, т.е. служит ли оно:

- а) показателем 3-го лица единственного числа в Present Indefinite;
- б) признаком множественного числа имени существительного;
- в) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

1. They use different meters for different purposes.
2. A parallel circuit has the main line and parallel branches.
3. This battery's capacity is larger than that one.

Задание 2. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именами существительными.

1. The current value is 10 amp.
2. It decreases electric energy supply.
3. In this case a battery has a large current capacity.

Задание 3. Перепишите следующие предложения, содержащие разные формы сравнения, и переведите их на русский язык.

1. The more current passes through a resistor, the higher is its temperature.
2. This plant gives more electric power.
3. This element of a circuit is the most important one.

Задание 4. Перепишите и переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

1. No material is a perfect conductor of electricity.
2. Any capacitor stores electric energy.
3. They used some capacitors in their experiments.

Задание 5. Перепишите следующие предложения, определите в них видовременные формы глаголов и укажите их инфинитив; переведите предложения на русский язык.

1. The current passes through the terminals.
2. The light went out.
3. They will connect some additional elements to the circuit next time.

Задание 6. Прочтите, перепишите текст и письменно переведите.

METERS

Engineers and scientists use many different meters for different purposes. The ohmmeters, the ammeters and wattmeter are the most common meters among them. We use the ohmmeter to measure the value of resistance. It consists of a milliammeter that we read in ohms, a battery and resistors. This meter is in parallel in the circuit and

the circuit has no open when you want to measure its resistance. The readings on the scale show the value.

Engineers use the ammeter to measure the value of current. The circuit opens at one point. An engineer connects the terminals of the meter to the ammeter. He connects the positive terminal of the meter to the positive terminal of the source; the negative terminal of the meter - to the negative terminal of the source. The ammeter is in series in the circuit. The readings on the scale show the value of current.

Engineers use a wattmeter to measure the value of power. They connect it directly to the circuit. A wattmeter consists of two coils. The readings on its scale show the value of power.

milliammeter – миллиамперметр, scale – шкала, readings – показания
terminal – клемма, to measure- измерять, in series – последовательно,
open – разрыв

Задание 7. Ответьте на вопрос: What terminals does a meter have?

Вариант № 4

Задание 1. Перепишите следующие предложения. Определите по грамматическим признакам, какой частью речи являются слова, оформленные окончанием -s; и какую функцию это окончание выполняет, т.е. служит ли оно:

- а) показателем 3-го лица единственного числа в Present Indefinite;
- б) признаком множественного числа имени существительного;
- в) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

1. The readings on the scale of ammeter show the current value.
2. He connects all the elements of the circuit in series.
3. This engineer's experiment results in the design of new electric device.

Задание 2. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именами существительными.

1. The voltage value equals 2.4 V.
2. In that case a battery has a large voltage output.
3. It increases electric energy supply.

Задание 3. Перепишите следующие предложения, содержащие разные формы сравнения, и переведите их на русский язык.

1. The higher the value of current, the higher is the resistor's temperature.

2. It has less power losses.
3. The distance between the plates is the most important for the capacitor's capacity.

Задание 4. Перепишите и переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

1. They will use no electric machinery.
2. Any electric cell produces electric energy.
3. There are some metal plates and insulators in a capacitor.

Задание 5. Перепишите следующие предложения, определите в них видовременные формы глаголов и укажите их инфинитив; переведите предложения на русский язык.

1. An electric cell consists of an electrolyte and two electrodes.
2. This amount of the solar energy heated the water.
3. It will be a new energy conservation system.

Задание 6. Прочтите, перепишите текст и письменно переведите.

RESISTORS

A resistor is one of the most common elements of a circuit. Engineers and scientists use resistors to reduce the value of current in the circuit, to produce IR voltage drop, and in this way to change the value of the voltage.

Current passes through a resistor and its temperature rises high. The higher the value of current the higher is the temperature of a resistor. Each resistor has a maximum temperature. It means that it can work up to these limits without a trouble. If the temperature rises higher the resistor gets open and opens the circuit.

The readings on its scale show the value of resistance in watt. The watt is the rate at which engineers obtain electrical energy when a current of one ampere passes at a potential difference of one volt.

A resistor can have constant value - this is a fixed resistor. The other resistor has different value in different cases. It is a rheostat. Engineers use it to change the resistance of circuits and in this way to vary the value of current.

IR voltage drop - омическое падение напряжения, value - величина
open - разрыв readings - значение scale - шкала rate - скорость
fixed - постоянный (resistor)

Задание 7. Ответьте на вопрос: When does the temperature of a resistor rise?

Вариант № 5

Задание 1. Перепишите следующие предложения. Определите по грамматическим признакам, какой частью речи являются слова, оформленные окончанием -s; и какую функцию это окончание выполняет, т.е. служит ли оно:

- а) показателем 3-го лица единственного числа в Present Indefinite;
- б) признаком множественного числа имени существительного;
- в) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

1. The cells supply some electric energy.
2. No current in a parallel circuit results from a trouble in the main line.
3. He checks meter's readings.

Задание 2. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именами существительными.

1. The cell connection in series increases the voltage output.
2. The current passes through the circuit terminals and bulb lights.
3. There are no energy storage facilities here.

Задание 3. Перепишите следующие предложения, содержащие разные формы сравнения, и переведите их на русский язык.

1. The larger current capacity a battery has, the higher is the voltage output.
2. This type of the circuits is more efficient one.
3. A resistor is one of the most common elements of a circuit.

Задание 4. Перепишите и переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

1. They need no special material in this case.
2. You can connect any element of a circuit in series.
3. An electric cell produces some electric energy.

Задание 5. Перепишите следующие предложения, определите в них видовременные формы глаголов и укажите их инфинитив; переведите предложения на русский язык.

1. The readings on the scale show the value of current.
2. The conductivity increased with heating.
3. The use of atomic energy will be much wider next 20 years.

Задание 6. Прочтите, перепишите текст и письменно переведите.

ELECTRICAL CELL

Engineers use an electric cell to produce and supply electric energy. It consists of an electrolyte and two electrodes. We use electrodes as terminals. They connect the cell directly to the circuit - current passes through the terminals and the bulb lights.

Engineers connect the cells in series, parallel or in series-parallel. They want to increase the current capacity, they connect the cells in parallel. They connect the cells in series and increase the voltage output. A battery has a large current capacity and a large voltage output, this means that engineers connect its cells series-parallel.

When an engineer connects the cells in series, he connects the positive terminal of one cell to the negative terminal of the second cell, the positive terminal of the second cell - to the negative terminal of the third...and so on (и так далее). Engineers connect together the cells' negative terminals and positive ones if they want to have the cells in parallel. In case a cell has a trouble it stops or operates badly. Engineer substitutes this cell by another one.

cell – элемент, terminal – клемма, bulb - эл. лампа, in series – последовательно, capacity - емкость output - мощность to substitute – заменять

Задание 7. Ответьте на вопрос: What does a cell consist of?

2. КОНТРОЛЬНАЯ РАБОТА № 2

2.1. Указания к выполнению контрольной работы № 2

Требования к оформлению контрольной работы № 2 остаются такими же, как и при оформлении контрольной работы № 1. Данная работа включает 5 заданий. Для того чтобы выполнить контрольную работу № 2, необходимо усвоить следующие разделы курса английского языка по рекомендованным учебникам и методическим пособиям:

1. Видовременные формы глагола:

- а) активный залог формы Indefinite (Present, Past, Future), формы Continuous (Present, Past, Future), формы Perfect (Present, Past, Future)
- б) пассивный залог - формы Indefinite (Present, Past, Future).

2. Модальные глаголы и их эквиваленты can, may, must, to be able to, have to, to be to, should.

3. Простые неличные формы глагола Participle I (Present Participle), Participle II (Past Participle) в функциях определения и обстоятельства.

2.2. Образец выполнения контрольной работы № 2

Задание 1.

We are going to improve this technique of receiving signals.

Мы собираемся улучшить этот способ получения сигнала.

are going - Present Continuous Active Voice, to be going to do — собираться что-то делать

Задание 2.

When waited any computer consumes much more energy.

При ожидании компьютер потребляет намного больше энергии.

When waited - Participle II - обстоятельство

Задание 3.

You will have to do it.

Вам придется сделать это.

2.3. Контрольные задания

Вариант № 1

Задание 1. Перепишите следующие предложения; подчеркните в каждом из них глагол-сказуемое и определите его видовременную форму и залог. Переведите предложения на русский язык. В разделе (б) обратите внимание на перевод пассивных конструкций.

а) 1. Electricity has given mankind efficient means for meeting the modern society requirements in energy.

2. The problem of more efficient use of solar energy is still occupying the minds of many research engineers.

б) 1. This scientist's discovery was followed by an intensive research work of others.

2. This electric phenomenon is greatly influenced by these sets of external forces.

Задание 2. Перепишите следующие предложения; подчеркните Participle I и Participle II и установите функцию каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола-сказуемого. Переведите предложения на русский язык.

1. The atoms are built of negative electrons, positive protons and ordinary neutrons.

2. When passing through an electroscope, X-rays cause its discharge.

3. In this case the parallel circuit used gave desired results.

4. Carrying out the experiments you should be more careful with electricity.

Задание 3. Перепишите следующие предложения; подчеркните в каждом из них модальный глагол или его эквивалент. Переведите предложения на русский язык.

1. One electric device may be larger than another one, but it may be less suitable.
2. Power consumption can also be defined as a measure of comparison.
3. Man-made satellites had to use solar cells as a source of power.
4. The elements of the circuits should be isolated by certain kind of fibres.

Задание 4. Прочтите, перепишите текст и письменно переведите.

NEW SOURCES OF ENERGY

Hydrogen is very promising energy source. This means that it can be used as fuel in transport, industry and at home. Scientists found many ways of producing hydrogen, - basically from water. It can also be obtained from coal.

Transporting and storing of hydrogen is easy. Besides, if hydrogen is used as motor-car fuel, there is no danger of any explosions in case of an accident on the road. The results of some experiments with liquid hydrogen fuel can be relied upon.

There is also tidal power for producing hydroelectricity by harnessing the ebb and flow of the tides. The first power plant was built in 1967 in France. The more such power plants we use, the less harm we do to nature.

Another source of energy of the future is the sun. It is well known that solar batteries were and are the part of the space equipment. When used in new experimental motor-car designs, the solar batteries showed the best results. Environmentally and economically, the Sun is our greatest energy source. But there are some problems to be solved to increase the direct use of solar energy that now is so limited for industrial, domestic, commercial and transportation purposes. First, solar energy arrives in small quantities - only about one kW per square meter. Second, it does not arrive at all during night hours. Third, it is very difficult to transform it into useful energy forms except low-grade heat.

These new sources are the most reliable ones for keeping the environment clean.

Задание 5. Ответьте на вопрос: How many new energy sources do you know?

Вариант № 2

Задание 1. Перепишите следующие предложения; подчеркните в каждом из них глагол-сказуемое и определите его видовременную форму и залог. Переведите предложения на русский язык. В разделе (б) обратите внимание на перевод пассивных конструкций.

a) 1. The problem of the structure of matter is constantly occupying the minds of many scientists.

2. The engineers have developed new electric cells.

б) 1. Today many highly conducting materials are produced on a massive scale.

2. The introduction of new fuses was followed by improving of operation of transmission power lines.

Задание 2. Перепишите следующие предложения; подчеркните Particle I и Particle II и установите функцию каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола-сказуемого. Переведите предложения на русский язык.

1. The energy lost in the capacitor appears in the form of heat being generated in the dielectric.
2. The problem being discussed was of no great importance for practice.
3. While passing through the conductor resistance results in the production of heat.
4. Having been insulated with polythene the line was tested under unfavorable conditions.

Задание 3. Перепишите следующие предложения; подчеркните в каждом из них модальный глагол или его эквивалент. Переведите предложения на русский язык.

1. If the device is faulty you can not rely on its readings.
2. This cable is to be used for testing of the transmission line.
3. The electric field may be thought of as consisting of a number of lines of force.
4. Nowadays power stations should be connected into power grids.

Задание 4. Прочтите, перепишите текст и письменно переведите.

ELECTRIC CELLS

An electric cell supplies electric energy provided its electrodes are of different materials. In case the electrodes of the same materials they become charged but there is no difference of potential across the terminals. Iron and zinc plates are commonly used for producing negative electrodes since these materials produce a high charge. Carbon is commonly used to produce positive electrodes.

The voltage output of cells in use nowadays is from 1 to 2V. The value of the output depends only on the material used for the electrodes. Besides, it depends on the electrolyte of a cell. It does not depend on the size of a cell and its construction while the current capacity of a cell depends on the size of the electrodes. The larger the size of the electrode, the more current capacity they can supply. When the size of the

electrodes is increased the current capacity also increases while the voltage output does not increase. Such is the relation between the size of the electrodes and the current capacity.

Besides above-mentioned ways of increasing current capacity and voltage output with an electric cell engineers use some other ones. The cells connected in parallel provide the increasing the current capacity. If they are connected in series the increase of the voltage output will be a result. If a battery has a large current capacity and a large voltage output, this means a series-parallel cell connection.

across the terminals -на клеммах

Задание 5. Ответьте на вопрос: Why are iron and zinc used so often?

Вариант № 3

Задание 1. Перепишите следующие предложения; подчеркните в каждом из них глагол-сказуемое и определите его видовременную форму и залог. Переведите предложения на русский язык. В разделе (б) обратите внимание на перевод пассивных конструкций.

а) 1. Electronics is successfully solving many complex problems.

2. The engineers have chosen the step-down transformer for this purpose.

б) 1. The experiments with the first solar power cells were followed by numerous others.

2. These insulators are acted upon different factors.

Задание 2. Перепишите следующие предложения; подчеркните Particle I и Particle II и установите функцию каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола-сказуемого. Переведите предложения на русский язык.

1. The generators constructed at the plant had no commutators.

2. Having been tested under different conditions the AC motors were put to use.

3. The transmitter is controlled in an amplitude-modulated system in two ways.

4. Gas coolants used to remove heat losses help to increase the current-carrying capacity of the motor's main parts.

Задание 3. Перепишите следующие предложения; подчеркните в каждом из них модальный глагол или его эквивалент. Переведите предложения на русский язык.

1. You should take into consideration safety precaution.

2. Deserts can be turned into gardens by solar energy.

3. The current must be as small as possible not to melt the wires.

4. A fast reactor has to be designed to produce more fuel than it consumes.

Задание 4. Прочтите, перепишите текст и письменно переведите.

CONDUCTORS and INSULATORS

Conductors are materials having a low resistance so that current easily passes through them. The lower the resistance of the material, the more current can pass through it.

The most common conductors are metals. Silver and copper are the best of them, the advantage of copper is that it is much cheaper than silver. Thus copper is widely used to produce wire conductors. One of the common functions of wire conductors is to connect a voltage source to a load resistance. Since copper wire conductors have a very low resistance a minimum voltage drop is produced in them. Thus, all of the applied voltage can produce current in the load resistance.

It should be taken into consideration that most materials change the value of resistance when their temperature changes.

Metals increase their resistance when the temperature increases while carbon decreases its resistance while the temperature increases. Thus metals have a positive temperature coefficient of resistance while carbon has a negative temperature coefficient. The smaller is the temperature coefficient or the less the change of resistance with the change of the temperature, the more perfect is the resistance material.

Materials having a very high resistance are called insulators. Current passes through them with great difficulty. The most common insulators are air, paper, rubber, and plastics.

load resistance – нагрузка, to decrease – уменьшать, rubber - резина

Задание 5. Ответьте на вопрос: What materials are called conductors?

Вариант № 4

Задание 1. Перепишите следующие предложения; подчеркните в каждом из них глагол-сказуемое и определите его видовременную форму и залог. Переведите предложения на русский язык. В разделе (б) обратите внимание на перевод пассивных конструкций.

- a) 1. Electronics is still solving a great number of problems.
2. The engineers have refused from using these poor quality fuses.
- б) 1. The building of the first atomic power station was followed by the research work.
2. These wires are acted upon great overloads.

Задание 2. Перепишите следующие предложения; подчеркните Particle I и Particle II и установите функцию каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола-сказуемого. Переведите предложения на русский язык.

1. Having made a number of tests with this step-up transformer the researcher got some useful results.
2. When being rubbed some substances produce electric charges.
3. Descending elevators use negative or braking torque.
4. The measures discussed are to be used for determining the faults in the conducting wires.

Задание 3. Перепишите следующие предложения; подчеркните в каждом из них модальный глагол или его эквивалент. Переведите предложения на русский язык.

1. The heat from the nuclear chain reactor can be removed by the coolant.
2. The engineers should reduce heat losses in a transmission line.
3. You are to know the main principles of energy production.
4. Considerable development may be done in the energy industry.

Задание 4. Прочтите, перепишите текст и письменно переведите.

CAPACITOR

A capacitor is one of the main elements of a circuit. It is used to store electric energy. A capacitor stores electric energy provided that a voltage source is applied to it. The main parts of any capacitor are metal plate and insulators. Its function is to isolate the metal plate and in this way to prevent a short.

There are two common types of capacitors in use nowadays: a fixed capacitor and a variable one. The plates of a fixed capacitor can not be moved. For this reason its capacity does not change. The variable capacitor plates move, its capacity changes. The greater the distance between the plates, the less is the capacitor's capacity. The function of variable capacitors widely used is to vary the frequency in the circuit.

Fixed capacitors have insulators produced of paper, ceramics and other materials; variable capacitors have air insulators. Paper capacitors are used because of their advantage is their high capacity: it may be higher than 1,000 picofarad.

Besides, electrolyte capacitors are highly in use. They also have a very high capacity: it varies from 0.5 to 2,000 micofarad. Their disadvantage is that they change their capacity when the temperature changes only at temperatures not lower than -40 degrees Celsius.

Common troubles in capacitors are an open and a short. A capacitor stops operating and does not store energy in case it has a trouble. It should be substituted by a new one.
short – замыкание, open – разрыв

Задание 5. Ответьте на вопрос: What is a capacitor used for?

Вариант № 5

Задание 1. Перепишите следующие предложения; подчеркните в каждом из них глагол-сказуемое и определите его видовременную форму и залог. Переведите предложения на русский язык. В разделе (б) обратите внимание на перевод пассивных конструкций.

- а) 1. The anode is attracting negatively charged ions.
- 2. The engineers have developed new type of DC generators.
- б) 1. The testing of these indoor lines was followed by its wide employment.
- 2. The circuit elements are affected by many factors.

Задание 2. Перепишите следующие предложения; подчеркните Particle I и Particle II и установите функцию каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола-сказуемого. Переведите предложения на русский язык.

- 1. The measures discussed are to be used for determining the faults in the generating units.
- 2. Switch board is an assemblage of controlling and indicating devices mounted upon a frame.
- 3. Water power is being used to drive this system.
- 4. The transmission system selected for everyday use is based on the combined activity of telecommunication and computers.

Задание 3. Перепишите следующие предложения; подчеркните в каждом из них модальный глагол или его эквивалент. Переведите предложения на русский язык.

- 1. The stations can be linked up into a network.
- 2. These installations should be interconnected completing a single network.
- 3. Heat losses must be reduced constantly and effectively.
- 4. These achievements were to be obtained in the energy industry.

Задание 4. Прочтите, перепишите текст и письменно переведите.

ATOMIC POWER PLANT

Atomic power plants are modern installations. They consist of several main units and a great number of auxiliary ones.

In a nuclear reactor uranium is utilized as a fuel. During operation processes powerful heat and radioactive radiation are produced. The nuclear reactor is cooled by water circulation. Cooling water circulates through a system of tubes, in which the water is heated to a temperature of 250-300 degrees Celsius. In order to prevent boiling of water, it passes into the reactor at a pressure up to 150 atmosphere.

A steam generator includes a series of heat exchangers comprising tubes. The water heated in the reactor is delivered into steam flows outside these tubes. The steam produced is fed into the turbogenerator. Besides, an atomic power plant comprises a common turbogenerator, a steam condenser with circulating water and a switchboard.

Atomic power plants have their advantages and disadvantages. The reactors and steam generators operate in them noiselessly; the atmosphere is not polluted by dust and smoke. As to the fuel consumption it is of no special importance and there is no problem of fuel transportation.

The disadvantage of power plants utilizing nuclear fuel is their radiation produced in the reactors because of its danger for attending personnel. The reactors and steam generators are installed underground and are shielded by thick walls. All their controls are operated by means of automatic devices.

Задание 5. Ответьте на вопрос: What are the main units of an atomic power plant?

3. КОНТРОЛЬНАЯ РАБОТА № 3

3.1. Указания к выполнению контрольной работы № 3

Для выполнения контрольной работы №3 студенту необходимо изучить следующие грамматические разделы курса английского языка:

1. Пассивный залог видовременных форм Indefinite, Continuous, Perfect.
2. Грамматические функции и значения слов one, that, it.
3. Простые неличные формы глагола. Инфинитив в функции:
 - а) подлежащего;
 - б) обстоятельства цели;
 - в) составной части сказуемого;
 - г) определения.
4. Бессоюзное подчинение в определительных и дополнительных придаточных предложениях.

Требования к выполнению и оформлению контрольной работы №3 остаются такие же, как и к контрольной работе №2.

3.2. Контрольные задания

Вариант № 1

Задание 1. Перепишите следующие предложения, определите в каждом из них видовременную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

1. Radioactive isotopes have been made in nuclear reactor.
2. The given material will be unaffected by any overload.
3. In older machines this reversal is accomplished by means of a commutator - a split metal ring mounted on the shaft of the armature.
4. The series-wound generator was used that time to supply a constant current at variable voltage.

Задание 2. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения слов it, that, one.

1. It is proved that the electricity transporting can't be without any power losses.
2. One must take part in scientific work.
3. Specialists insist on applying new methods and materials for insulation.

Задание 3. Перепишите следующие предложения и переведите их на русский язык, помня о разных значениях глаголов to be, to have, to do.

1. The experiment is to start in the morning.
2. This material does not possess desired properties.
3. Scientists had to create solar cells.
4. The testing of new device was not so successful as they expected.

Задание 4. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива в предложении.

1. To magnetize a body requires some energy.
2. The distance to be covered was equal to ten miles.
3. To reduce the power losses thick wires should be used.
4. It requires two hours to be put into operation.

Задание 5. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

1. You are to know the resistance passing through the conductor results in heat.
2. The material we should employ in transistors is germanium.

Задание 6. Прочтите, перепишите текст и письменно переведите.

ENERGY

Energy is known to be the capacity to do work. To consider energy we should know its forms. They are heat, chemical energy, mechanical energy and electrical energy. Any form of energy can be changed into another one. If burning coal didn't make steam it wouldn't supply energy to water in a steam-boiler. The steam may be passed into an engine to produce mechanical energy.

Mechanical energy we speak about may be changed into electrical energy. Wind, water and coal are supposed to be the oldest sources of energy to be used by man. On places where coal or other fuel is found, steam power is freely used. But where fuel is limited waterpower should be used, and by means of water turbines light, heat and mechanical energy can be produced. Many industrial centers are to be supplied with electricity produced by the energy of running water. There was a time when water and wind were the only sources of power. Watermills are thought to be introduced more than 2,000 years ago. Steam power being introduced, the windmills became less important.

The source of most forms of energy is the sun. Its energy is accumulated in coal and oil. The circulation of wind and water is known to depend upon the heat of the sun. But the sun is not only source of energy, for there are unlimited reserves of energy in the atoms of various chemical elements.

Задание 7. Ответьте на вопрос: What forms of energy do you know?

Вариант № 2

Задание 1. Перепишите следующие предложения, определите в каждом из них видовременную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

1. This lecturer was listened to with great interest.
2. DC generators are commonly classified according to the method used to provide field current for energizing the field magnet.
3. Two basic types of motors have been designed to operate on polyphase a.c.
4. The given device is being affected by such an overload as we have.

Задание 2. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения слов *it, that, one*.

1. It is necessary to find new sources of cheap energy.
2. It was Einstein who came to conclusion that e.m.f. is influenced by the gravitation field.
3. This pull-push amplifier was introduced last year, and that one will be employed next four months.

Задание 3. Перепишите следующие предложения и переведите их на русский язык, помня о разных значениях глаголов *to be, to have, to do*.

1. Our plant is to increase the output of the electronic meters.
2. Man had to learn to obtain electric power directly from the Sun.
3. At present most of the industrial enterprises have their own electric power stations.
4. Specialists do not use solar cells in industry as they are too expensive.

Задание 4. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива в предложении.

1. To measure value of current we use ammeter.
2. In order to build the power plant there three miles of tunnels were drilled.
3. At least 90% of electricity to be generated at present is a.c.
4. The work of the engineer at the power station is to check its operation.

Задание 5. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

1. I think the results of the experiments will be discussed next time.
2. The transmission system we selected for everyday use is based on the combined activity of telecommunication and computers.

Задание 6. Прочтите, перепишите текст и письменно переведите.

TESTING MOTORS AND GENERATORS

It is of great importance, therefore, to make regular tests of insulation resistance of all machinery so as to detect possible faults. Different conditions may influence the value of the insulation resistance.

It is advisable, therefore, to make the test of the machine as soon after it has been shut down as possible, when the insulation resistance is likely to be lowest. If, after the

motor has just been shut down, the insulation resistance is found to be satisfactory, it may be assumed that it will be better at any other time provided that the machine does not stand idle for long in a humid atmosphere.

Faults on electrical machinery must be due to one of two causes. One is the absence of continuity in the conductor which is supposed to be carrying the current. The other is the absence, or partial absence, of insulation. The latter is by far the more common and the more dangerous of the two. A burnt out armature, for example, is usually due to insulation failure. A drop in insulation resistance may often be accounted for, for example, by damp weather.

As regards the effect of temperature it should be noted that the insulation resistance of motors and generators is generally lower when they are hot than when they are cold as the insulating varnishes used in the building of the machines have a lower resistance when hot than when cold.

Задание 7. Ответьте на вопрос: Why is it so important to test motors and generators?

Вариант № 3

Задание 1. Перепишите следующие предложения, определите в каждом из них видовременную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

1. Electric cars will be widely used in future.
2. The given material was affected by overload.
3. These synchronous motors have been made to operate from a single-phase power source.
4. The field magnets mounted on the rotor are being excited by direct current.

Задание 2. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения слов it, that, one.

1. It is the number of electrons within atom that determines the properties of a substance.
2. The efficiency of this electricity transmission line is larger than of that one.
3. In atomic power station one must get used to different detecting devices and sensors.

Задание 3. Перепишите следующие предложения и переведите их на русский язык, помня о разных значениях глаголов to be, to have, to do.

1. This has been made of high-quality material.
2. The engineers are to study the problem of using solar energy.

3. Some substances do not conduct electricity.
4. Soon our industry will have new and cheap sources of energy.

Задание 4. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива в предложении.

1. To convert chemical energy into electrical energy you should use an electrical cell.
2. The purpose of this chapter is to explain the difference between AC generators and DC ones.
3. The volume of electricity to be transmitted was sufficiently decreased.
4. To meet industrial needs a.c. can be decreased or increased.

Задание 5. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

1. We know water-turbine plants are called hydroturbines.
2. The light-water reactor types we consider the most promising can replace the atomic power ones.

Задание 6. Прочтите, перепишите текст и письменно переведите.

TRANSMISSION LINES

A power station is an interconnection of electric power stations by high voltage power transmission lines. Nowadays the electricity is transmitted over long distances and the length of transmitting power lines varies from area to area. A wire system is termed a power line in case it has no parallel branches and a power network in case it has parallel branches.

According to their functions power lines and networks are subdivided into transmission and distribution lines. Transmission lines serve to deliver power from a station to distribution centers. Distribution lines are used for delivering power from distribution centers to the loads.

Lines are classified into overhead, indoor and cable (underground). The first ones include line conductors, insulators and supports. The conductors are connected to the insulators and these are connected to the supports. The greater the resistance, the higher are the heating losses in the conducting wires. In order to reduce the losses, a step-down transformer can be used.

Indoor lines include conductors, cords and buses. The conductor may include one wire or a combination of wires not insulated from one another. They deliver electric current to the consumers.

As to underground lines they are used in city areas. Accordingly they are used in the cities and towns and in the areas of industrial enterprises.

support – опора, cord – провод, bus – шина, city area - район городской застройки

Задание 7. Ответьте на вопрос: By what means is electric power transmitted?

Вариант № 4

Задание 1. Перепишите следующие предложения, определите в каждом из них видовременную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

1. When much had been done in the study of lasers by our university, it became an important scientific center.
2. Fields of modern generators are equipped with four or more electromagnetic poles to increase the size and strength of the magnetic field.
3. DC generators were operated at fairly low voltages to avoid the sparking.
4. Such universal motors made only in small sizes will be used in household.

Задание 2. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения слов it, that, one.

1. The successes in the carried out experiments with this new optoelectronic device made it possible to obtain a new reliable amplifier.
2. One has to choose the insulating material that will be the most efficient and cheapest one.
3. It is the energy of the falling water that is used to drive turbines.

Задание 3. Перепишите следующие предложения и переведите их на русский язык, помня о разных значениях глаголов to be, to have, to do.

1. The main principles of new product development are to be announced at this conference.
2. We had to change the design of the device.
3. Our laboratory is to carry out some experiments with laser beam.
4. While working with electricity transmission lines the engineers have to be careful.

Задание 4. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива в предложении.

1. These devices made it possible to apply the idea of direct use of solar power.

2. To simplify and make power generation cheaper the engineers will develop new type of energy generated installations.
3. The pumps to be driven by the magneto-heat engine will give electricity to this district.
4. To organize of the production of the necessary alloys is the task of this project.

Задание 5. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

1. The power plants the engineers are going to update are employed last 35 years.
2. The information they gave you helped to avoid the overload of motor.

Задание 6. Прочтите, перепишите текст и письменно переведите.

SUBSTATIONS

A substation is designed to receive energy from a power system, convert it and distribute it to the feeders. A substation serves as distribution center. Substations feed (supply) various consumers provided that their basic load characteristics are similar. Therefore the energy is distributed without transformation of the voltage supplied.

Common substations comprise isolators, switchgear buses, oil circuit breakers, fuses, power and instrument transformers and reactors.

Substations are classified into step up and step down ones. The step up substation includes transformers that increase the voltage. Connected to the busbars of the substation are the power transmission lines of power plants of the system. As to step down substations they reduce the voltage to 10 or 6 kV. At this voltage the power is supplied to the distribution centers and to the transformer substations of power consumers.

A transformer substation serves for transmitting and distributing electric power. It comprises a storage battery, control devices and auxiliary structures. Transformer substations are classified into indoor and outdoor; both types are used for feeding industrial enterprises. Compared to other types of substations, transformer ones have certain advantages. They have flexible construction and provide easy and reliable operation. In case of a fault in the left-hand section the main circuit breaker opens while the normally open section circuit breaker closes and puts the voltage of the section to normal.

feeder – фидер, switchgear - распределительное устройство, fuse - предохранитель
busbar - сборательная шина, breaker – выключатель

Задание 7. Ответьте на вопрос: What are the advantages of a transformer substation?

Вариант № 5

Задание 1. Перепишите следующие предложения, определите в каждом из них видовременную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

1. The research of that d. c. generator was developed by two groups of specialists.
2. This material is unaffected by solar radiation.
3. In some newer machines this reversal will be accomplished using power electronic devices, for example, diode rectifiers.
4. The two halves of a commutator are being insulated from each other.

Задание 2. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения слов it, that, one.

1. It is necessary to obtain accurate data on power losses on this electricity transmission line.
2. The specialists find out that all the harmful affects of it can be easily eliminated.
3. One will have to develop new solar energy converter because the older ones are unsatisfactory.

Задание 3. Перепишите следующие предложения и переведите их на русский язык, помня о разных значениях глаголов to be, to have, to do.

1. This investigation is to be carried this year.
2. The engineers are to study the problems of using solar and wind energy.
3. The speed of electrons is almost the same as that of light.
4. They will have some problems with this new electric equipment.

Задание 4. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива в предложении.

1. No additional components were used since they were not needed to actuate the relay.
2. To transform electric power into mechanical, heat and chemical power various installations were used.
3. Atomic power plant is to be located away from urban areas.
4. The task of the test was to name all the known perfect insulators.

Задание 5. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

1. Solar power the scientists and engineers suggest to use is inexhaustible.
2. We know the length of transmitting power lines varies from area to area.

Задание 6. Прочтите, перепишите текст и письменно переведите.

INDUSTRY LOOKS FOR SOLAR ENERGY

The sun is 330,000 times larger than the earth. Its heat is known to reach 30,000,000 degrees. Ancient men worshiped their Sun God; modern man wants to make the sun work, because on a summer day the sun can give the earth about 5,00 horse power (hp) per acre.

Scientists have calculated the sun produces in three days more heat than all earth fuels could ever produce. And while earth fuels (coal, uranium, etc.) are limited it takes the sun one bln years to lose 1% of its energy. Solar energy was used by man many years ago. Greek inventor Archimedes is said to have repulsed an enemy fleet with fire rays from solar reflectors: centuries later the sun powered the printing press to be used at a Paris exposition. Still later Frenchman Monchot made a solar boiler.

Some places in Arizona, U.S., have 91% sunshine days. Because they have so much sun and so little water solar energy could be used there for irrigation and could turn the desert into gardens, if the scientists had the money necessary for such a work. In Florida, however, the sun supplies hot water to some houses. There are solar cookers and boilers in India, Burma. There such cookers are stated to be produced and sold. The American Telephone Company is reported to have developed a solar battery that converts the sunrays directly into electrical current. Such batteries are known to be placed on the top of the telephone poles and supply enough current to carry the voice.

Задание 7. Ответьте на вопрос: What applications of solar energy do you find out from this text?

4. КОНТРОЛЬНАЯ РАБОТА №4

4.1. Указания к выполнению контрольной работы № 4

Для выполнения контрольной работы №4 студенту необходимо изучить следующие грамматические разделы курса английского языка:

1. Сложные формы инфинитива. Объектный и субъектный инфинитивный оборот. Способы перевода.
2. Независимый причастный оборот.

3. Условные предложения.

Требования к выполнению и оформлению контрольной работы №4 остаются такие же, как и к контрольной работе №2, 3.

4.2. Контрольные задания

Вариант № 1

Задание 1. Перепишите и письменно переведите на русский язык следующие предложения. Помните, что объектный и субъектный инфинитивные обороты соответствуют придаточным предложениям.

1. The procedure to be applied in our experiment is discussed in detail below.
2. The neutrons and protons of an atom are known to be linked together to form a compact nucleus.
3. However, for a large system the amount of information to be handled is still excessive.

Задание 2. Перепишите и письменно переведите на русский язык следующие предложения. Обратите внимание на перевод зависимого и независимого (самостоятельного) причастных оборотов.

1. The engineers using semiconductors have achieved good results.
2. All the experiments having been carried out, the scientists had to check the results.
3. The additional material having been accumulated, we could accomplish our research.

Задание 3. Перепишите и письменно переведите на русский язык следующие сложные предложения. Обратите внимание на перевод условных предложений.

1. If a solid body or a liquid is heated, it will usually expand.
2. It would have been impossible to launch space satellites and space rockets provided we had not had the necessary polymeric materials and synthetic.
3. But for electricity little could be done in a modern research laboratory.

Задание 4. Перепишите текст и письменно переведите.

THE MAIN COMPONENTS OF ELECTRIC CIRCUIT

The main components of any circuit are devices that produce and utilize electric energy. They are: 1. power sources, 2. utilizing loads, 3. connecting conductors.

The most common power sources are electric generators and primary cells. Electric generators convert chemical energy into electric energy.

Loads include electric heaters, electric motors, incandescent lamps, etc. Motors convert electric energy into mechanical, incandescent lamps and heaters convert electric energy into light and heat. Utilizing devices or loads convert electric energy into thermal, mechanical or chemical energy.

Electric power is delivered from power sources to loads by electric wires. According to their material, wires can be aluminium, copper, steel, etc.

In addition to these three main components, electric circuits use different types of switches, protection devices (relay and fuses), and meter (ammeters, voltmeters, wattmeters, etc.).

utilize – использовать, расходовать; primary cell – первичный источник тока, relay – реле, переключатель; fuse – плавкий предохранитель, пробка

Задание 5. Ответьте на вопрос: What are the main components of any circuit?

Вариант № 2

Задание 1. Перепишите и письменно переведите на русский язык следующие предложения. Помните, что объектный и субъектный инфинитивные обороты соответствуют придаточным предложениям.

1. A great number of inventions is known to have been suppressed by monopolistic industrial associations in capitalist countries.
2. The experiment, which is believed to have proved most successful, will be discussed at the conference.
3. The plan is likely to be approved provides for the immediate construction of a new power station.

Задание 2. Перепишите и письменно переведите на русский язык следующие предложения. Обратите внимание на перевод зависимого и независимого (самостоятельного) причастных оборотов.

1. After passing the Panama Canal the captain found that he had not enough coal left to enable to reach the port of discharge.
2. They informed us of the vessel having left the port.
3. The loss resulted from the vessel being prevented from loading a full cargo.

Задание 3. Перепишите и письменно переведите на русский язык следующие сложные предложения. Обратите внимание на перевод условных предложений.

1. If the rectifier fails to work properly they will have to replace it by new one.

2. If the data were checked the experiments with radar set would have been more successful.
3. It would be interesting to investigate such a phenomenon from the radioelectronics point of view.

Задание 4. Перепишите текст и письменно переведите.

TRANSMISSION LINES

A power system is an interconnection of electric power stations by high voltage power transmission lines. Nowadays the electricity is transmitted over long distances and the length of transmitted power lines varies from area to area.

A wire system is termed a power line in case it has no parallel branches and a power network in case it has parallel branches.

According to their functions, power lines and networks are subdivided into transmission and distribution lines.

Transmission lines serve to deliver power from a station to distribution centers. Distribution lines deliver power from distribution centers to the loads.

Lines are also classed into: 1) overhead; 2) indoor; 3) cable (underground).

Overhead lines comprise line conductors, insulations, and supports. The conductors are attached to the insulators, and these are attached to the supports. The greater the offered resistance, the higher are the heating losses in the conducting wires. The losses can be reduced simply by using a step down transformer.

Indoor lines include conductors, cord, and buses. A conductor may comprise one wire or a combination of bare wires not insulated from one another. They deliver electric current to the consumer.

As to underground lines, they are suitable for urban areas. Accordingly, they are used in cities and in the areas of industrial enterprises.

transmission line – линия передачи, to subdivide – подразделять,

distribution – распределение, раздача, распространение; overhead – надземный insulator - изолятор

Задание 5. Ответьте на вопрос: What are the overhead lines?

Вариант № 3

Задание 1. Перепишите и письменно переведите на русский язык следующие предложения. Помните, что объектный и субъектный инфинитивные обороты соответствуют придаточным предложениям .

1. Calibration is the graduation of an instrument to enable measurements in definite units to be made with it.
2. In order to reduce power loss in the line, it is necessary to reduce the current through conductors.
3. Carbon steel has been known to be the principal product of the steel industry.

Задание 2. Перепишите и письменно переведите на русский язык следующие предложения. Обратите внимание на перевод зависимого и независимого (самостоятельного) причастных оборотов.

1. Hydroelectric power is electric energy obtained from water power, the latter being used to drive a dynamo.
2. Silver being very expensive, we only rarely use it as a conductor.
3. Many difficulties having been overcome, the problem of lighting our streets, plants and homes was solved.

Задание 3. Перепишите и письменно переведите на русский язык следующие сложные предложения. Обратите внимание на перевод условных предложений.

1. If you were asked: "How can electric charges be made to flow and what factors influence their flow" what would you answer?
2. If the molecules of water had been divided into smaller parts it would not have been water any longer but some other substance.
3. If the wire were of a smaller diameter its resistance would be increased.

Задание 4. Перепишите текст и письменно переведите.

ELECTRIC LINES AND THEIR EFFICIENCY

Wires are used to deliver electric power and interconnect different components of electrical installations. Conductors used for electric wiring are commonly produced of copper and aluminium. Aluminium is widely used nowadays due to its low cost. Copper is also widely used in electrical engineering but its cost is much higher.

Cross-sections of copper conductors used nowadays are from 0.5 up to 800 sq mm. Aluminium conductors have the same cross sections but the minimum one is 2 – 5 sq mm.

Wires connecting the components of various installations may be insulated. They may also be used without insulation. Since in short lengths of wire power loss is exceedingly low one can ignore it. In long wires (longer than 10 m), power loss cannot be ignored since it is rather high. If this value is exceeded the line becomes inefficient.

One should know that the efficiency of a line is not constant – it may change. The value of the line efficiency depends on the load: the greater the load the lower is the line efficiency. At voltage losses of 2 to 5 per cent the efficiency of a line is 98-95 per cent. Protecting devices, fuses and relays, are used to protect the circuit against overcurrents and short-circuits.

conductor – проводник, electric wiring – электропроводка
cross-section – поперечное сечение, exceedingly – очень, чрезвычайно

Задание 5. Ответьте на вопрос: What do you know about the efficiency of an electric line?

Вариант № 4

Задание 1. Перепишите и письменно переведите на русский язык следующие предложения. Помните, что объектный и субъектный инфинитивные обороты соответствуют придаточным предложениям.

1. The metals to be strengthened are subjected to special operations.
2. The water to be transformed into steam must be heated.
3. Volta is known to have invented the first electrical battery.

Задание 2. Перепишите и письменно переведите на русский язык следующие предложения. Обратите внимание на перевод зависимого и независимого (самостоятельного) причастных оборотов.

1. The modern equipment being installed, we could increase the rate of production.
2. The steam generation is designed so that the steam generating process should be entirely automatic.
3. Before sailing the captain was instructed to take some bunker coal in Odessa.

Задание 3. Перепишите и письменно переведите на русский язык следующие сложные предложения. Обратите внимание на перевод условных предложений.

1. If all the forces acting upon the body balance each other there will be no resultant force.
2. The efficiency of the apparatus would not be increased unless all the requirements were met.
3. If three machines or more were ordered, the price would be reduced by 5 per cent.

Задание 4. Перепишите текст и письменно переведите.

ELECTRIC MOTORS

Motors are used for converting different forms of energy into mechanical energy.

The main part of a motor is a coil or armature. The armature is placed between the poles of a powerful magnet. When a motor is put into operation current starts flowing through the coil (armature) and the armature starts rotating.

Electric motors are necessary for all branches of industry, transport and agriculture. They are used in industrial plants, and operate under different conditions, both favorable and unfavourable for their service life. Because of their different applications, motors are manufactured in many different designs.

Each motor has a nameplate attached to its frame. The nameplate bears machine ratings. To these belong: output power in kilowatts, voltage, the rated current, the starting current, the power factor, the efficiency, the rated torque.

These machine ratings are important for the use of motors during their service life which is normally equal to about 10 years, provided the operating conditions are favourable. Under abnormal and unfavourable conditions it is much shorter. Thus normal and favourable ambient conditions are very important for the length of a motor's service life.

According to their types of energy required for their operation, electric motors are divided into d.c. and a.c. motors.

convert (into) – преобразовывать, превращать; rotate – вращать

application – применение, использование; torque – вращающий момент

Задание 5. Ответьте на вопрос: What is d.c.?

Вариант № 5

Задание 1. Перепишите и письменно переведите на русский язык следующие предложения. Помните, что объектный и субъектный инфинитивные обороты соответствуют придаточным предложениям.

1. Alternative current can be increased or decreased to meet industrial requirements.
2. The flexible line to operate at the plant will be installed in some months.
3. The cabin of the rocket is known to house automatic and radio-controlled instruments.

Задание 2. Перепишите и письменно переведите на русский язык следующие предложения. Обратите внимание на перевод зависимого и независимого (самостоятельного) причастных оборотов.

1. Payment will be made in Moscow against a telegram signed by the captain of the vessel stating the quantity loaded.
2. The goods were ready for shipment having been inspected and tested by the buyer's inspectors.
3. When asking the seller to send him a quotation, the buyer gives a detailed description of the goods required by him.

Задание 3. Перепишите и письменно переведите на русский язык следующие сложные предложения. Обратите внимание на перевод условных предложений.

1. If the signal is detected it will be cleared from any atmospheric noise.
2. They would have had more accurate data if the experiments with this transmitting antenna had not been carried out under poor conditions.
3. It would be impossible today's radioelectronics without these discoveries.

Задание 4. Перепишите текст и письменно переведите.

FUSES

Fuses are widely used nowadays as protection devices. They are utilized in various circuits, electrical equipment and installations. Fuses serve to protect them against overcurrents and short-circuits.

There are different types of fuses in use nowadays. Of them, quartz-sand fuses serve for voltage up to 500 volts; fuses of this kind are produced with current ratings of 15 to 60 amp and of 100 to 350 amp.

Fuses are commonly used in low-voltage industrial installations rated up to 1,000V. Fuse protection is based on a very simple principle: in case of a short-circuit or overcurrent, when the maximum value of current has been exceeded, the fusible link of a fuse is heated to its melting point. This opens the circuit and disconnects the circuit from the power source. In case of a fault, one should replace the faulty fusible element by a new one.

Fuses are used both in direct current (d.c.) and alternative current (a.c.) circuits.
 widely – широко, повсюду; in case – в случае; melting point – точка плавления
 faulty – ошибочный, неправильный, поврежденный

Задание 5. Ответьте на вопрос: What is the main function of fuses?

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Заказ №	от	Тираж	экз.
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