ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ПРОФЕССИОНАЛЬНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ АРХАНГЕЛЬСКОЙ ОБЛАСТИ
«МИРНИНСКИЙ ПРОМЫШЛЕННО-ЭКОНОМИЧЕСКИЙ ТЕХНИКУМ»

МЕТОДИЧЕСКИЕ РЕКОМЕНДАЦИИ ДЛЯ ВЫПОЛНЕНИЯ КОНТРОЛЬНЫХ РАБОТ ПО

ОГСЭ.03 ИНОСТРАННЫЙ ЯЗЫК В ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ

(заочная форма обучения)

для специальности: 13.02.11 Техническая эксплуатация и обслуживание электрического и электромеханического оборудования

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Методические рекомендации для ОГСЭ.03 Иностранный язык в профессиональной деятельности разработаны для выполнения контрольных работ и составлены в соответствии с рабочей программой и учебным планом по специальности 13.02.11 «Техническая эксплуатация и обслуживание электрического и электромеханического оборудования».

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Требования к оформлению и выполнению контрольных работ:

1. Студенты выполняют одно контрольное задание в семестр.
2. Выполнять письменные контрольные задания следует в отдельной тетради, на обложке тетради напишите свою фамилию, инициалы.
3. Контрольные задания должны выполняться чернилами, аккуратно, четким почерком либо выполнены на компьютере (шрифт 14 пт, Times New Roman).
4. Если контрольное задание выполнено без соблюдения указаний или не полностью, оно возвращается без проверки.
5. Студенты, фамилии которых начинаются с букв от «А» по «Д», должны выполнить 1 вариант контрольной работы, от «Е» по «К» - 2 вариант, от «Л» по «Р» - 3 вариант, от «У» по «Ч» - 4, от «Ш» по «Я» - 5. Контрольная работа сдается заблаговременно (за 10-5 дней) перед сдачей зачета по английскому языку.

Для того, чтобы правильно выполнить задания, необходимо усвоить следующие разделы грамматики английского языка:

1. Определенный и неопределенный артикль.
2. 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).
3. Модальные глаголы: а) выражающие возможность: can (could), may и эквивалент глагола can – to be able, б) выражающие долженствование: must, его эквиваленты to have to и to be to; should.
4. Простые неличные формы глагола: Participle I (Present Participle), Participle II (Past Participle).
5. Части речи в английском языке.
6. Инфинитив и Герундий. Формы и употребление.
7. Типы вопросов. Построение вопросительных предложений.
8. Сравнительная степень прилагательных и наречий.

9. Порядок слов в предложении.
10. Количественные и порядковые числительные.

В первом задании контрольной работы студентам необходимо прочитать и перевести текст. Во втором задании для того, чтобы правильно ответить на вопросы, нужно внимательно просмотреть или при необходимости повторно прочитать данный текст. Отвечать на вопросы рекомендуется полным предложением. Третье задание у разных вариантов варьируется. В одном из них требуется написать цифрами числительные, вспомнить и записать сравнительную степень прилагательных и наречий, в другом написать функцию инфинитива в предложении. (Для этого можно воспользоваться изучением теоретического материала из учебника Качалова К.И., Израилевич Е.Е. Практическая грамматика английского языка. М.: Лист Нью, 2009г).

В четвертом задании поставить определённый или неопределённый артикли, руководствуясь сборником упражнений по всем разделам английского языка (Голицынский Ю.Б. Грамматика: Сборник упражнений - Санкт-Петербург: КАРО,2016). В пятом задании требуется изменить предложения во всех временах действительного залога. Для выполнения данного задания нужно закрепить тему: «Времена в английском языке». Применительно к этой теме необходимо выучить таблицу самых наиболее употребляемых неправильных глаголов. Рассказ о себе должен содержать следующую информацию: фамилия, имя, возраст, место проживания, образование, профессия, семейное положение, хобби. (8-10 предложений). При этом надо помнить, что в английском языке прямой порядок слов в предложениях.

Варианты контрольных работ для I семестра

Вариант 1

1. Read and translate the text.

Aristotle (384BC – 322BC) Living in the same time period as Plato and Alexander the Great, Aristotle helped lay the foundations for western civilization through his wide range of intellectual and scientific studies.

Aristotle was one of the great polymaths of his time. He studied under Plato and therefore learnt much about the great philosophic traditions of Socrates. But, Aristotle was more than just a good student; he had an independent mind and was able to question many different things and sought to resolve difficult questions and previously unsolvable problems. He made studies in botany, physics, philosophy, logic, and was well known for being a powerful lecturer and debater. He was also regarded as a kindly man, compassionate to others.

In the field of physics, Aristotle's ideas influenced much of the medieval period, and lasted into the European Renaissance. His ideas were later replaced by the physics of Isaac Newton.

Aristotle believed in the power of reason to illuminate the problems of man. He believed that man had the capacity for enlightenment through self-inquiry and study. He believed that human goodness derived from rational thought. Aristotle was also a playwright and he described how the weakness of man – pride, anger, jealousy, could lead to his downfall.

Aristotle was also the teacher of the future Macedonian King – Alexander the Great. Aristotle taught the future king, political philosophy, history and ethics. Alexander the Great was to ignore much of Aristotle's teachings such as the desirability of oligarchic leadership, but, his education by Aristotle must have left an abiding impression on the young prince.

Aristotle’s work Politics, is an attempt at a practical philosophy to allow justice and freedom. He also saw politics as a method of ensuring man had the capacity to live harmoniously and allow him to pursue noble ideas.

“The political partnership must be regarded, therefore, as being for the sake of noble actions, not for the sake of living together.”

Aristotle had so many interests, that he had a very wide influence over the development of Western Civilization. In addition to the above interests, he pioneered the study of zoology, logic and helped in the development of medicine, optics, and ethics.

Aristotle, was one of the few philosophers who strongly influenced later Christian writers such as Thomas Aquinas.

2. Ответить на вопросы.

1. What was Aristotle?
2. When and where did he live?
3. Who were his teachers?
4. Whose teacher was he?
5. What did he teach Alexander the Great?
6. What was the result of his work Politics?
7. What was he famous for?
8. When did he die?

3. Грамматический тест.

3.1 Напишите цифрами.

It's twenty minutes to twelve, six point five four, eight and two thirds, the second of July two thousand five, nine, fifty-fifth, forty one per cent, it's ten sharp, nine hundred and eleven, it's twenty minutes past twelve.

3.2 а) Напишите сравнительную и превосходную степень: wide, much, sad, kind, delicious, noisy, small.

b) Используйте сравнительную и превосходную степень прилагательных:

Park Avenue in New York has the (large), (expensive) apartment houses. Mary is (good) pupil than Lucy. She felt as (strong) as her brother. The (new) cinema is (big) than the (old) one.

4. Вставьте, где необходимо, артикль:

... History and ... Computer Science were ... my favourite subjects at... school. I don't know ...way to ... station. I usually get up at ...7 o'clock in ... morning.... Warsaw is ... capital of... Poland. In ... Siberia there are many ... long rivers: ... Ob,... Lena etc.

5. Измените предложение во всех временах действительного залога:

I had to visit language courses before going abroad.

6. Переведите эти прилагательные и составьте с ними предложения:

Intense, compelling, enigmatic, loved, brave, helpful, focused, chatty, authentic, succinct.

7. Рассказать о себе.

Вариант 2

1. Read and translate the text.

WAVE MOTION

One of the most important phenomena in nature is the transmission of energy from one point to another by wave motion. When you drop a stone into a pool of still water, the surface of the water is soon covered with circular waves. The water does not really move from the central point but it rises and falls again. Motions of this kind are wave motion.

We can see water waves almost every day. We make use of light waves to see the water waves and we hear sounds by means of sound waves. All wave motions possess three characteristics:

1. amplitude, which is the height or strength of the wave;

2. frequency, the number of waves' per second;

3. wavelength, the distance from the crest of one wave to the crest of the next.

Sound waves are produced by vibrations. Sound waves travel through the air at a speed of about 1,100 ft. per second.

The microphone, the loudspeaker and headphones are devices used in transmitting sound.

To find the velocity (or the speed) of the wave motion we multiply the frequency by the wavelength:

v = f*l,

where ***f*** stands for frequency [ˈfriː.kwən.si]

l stands for wavelength [ˈweɪv.leŋθ]

v stands for velocity [vəˈlɒs.ɪ.ti]

This important equation is true for electric waves as well as for sound waves.

Radio waves are electric waves-of very high frequency; they travel through space with the speed of light. They differ from other wave forms, such as light waves, heat waves or X-rays, only in frequency (number of vibrations per second).

Waves being sent out in all directions from a transmitting antenna.

2. Ответьте на следующие вопросы:

1. What is one of the most important phenomena in nature?
2. When can you see water waves?
3. What waves are there in nature?
4. How can you hear sounds?
5. What are the main characteristics of waves?
6. What is amplitude?
7. What is frequency?
8. What is wavelength?
9. What formula do we use to find the velocity?
10. What do the letters f, l, and v stand for?
11. What is the velocity of light?

3. Переведите предложения, определив функцию инфинитива.

Above certain critical temperature changes begin to take place in the molecular structure of a metal.

1. To prepare metals for practical use requires much knowledge and experience.
2. The aim of any research is to enlarge the possibilities which are offered by modern science.
3. In order to prevent corrosion metals to be used in industry must be covered with special paint.
4. It is difficult to define what an amorphous material is. It may be composed of crystals which are too small to be detected.
5. This metal is too brittle to be hammered.

II. Переведите предложения, с предлогом FOR

1. The unusual phenomenon occupied the scientist’s thoughts for some weeks.
2. For a few years Albert Einstein lived in Prague.
3. Einstein’s work was a great surprise for scientists all over the world.
4. In 1921 Einstein got his Nobel Prize not for the theory of relativity but for a logic explanation of photoelectric effect.

5. Einstein always answered all students' questions, for there were no foolish or simple questions for him.

4. Задайте все возможные вопросы к этим предложениям.

1. This story is very interesting.
2. We spent a very nice day in the country on Sunday.

5. Определите, какой частью речи является слово с окончанием –ing и переведите эти предложения.

1. Oxygen is obtained by heating mercuric oxide.
2. The breathing of animals depends upon oxygen.
3. Breathing apparatus is used by divers.
4. He was breathing feebly.
5. Firemen entering burning buildings have masks on their faces.
6. Burning apparatus fed with oxygen can give a temperature of about 3,000 °C.

6. Выучите таблицу неправильных глаголов.

Вариант 3

1. Read and translate the text.

SOURCES OF POWER

The industrial progress of mankind is based on power: power for industrial plants, machines, heating and lighting systems, transport, communication. In fact, one can hardly find a sphere where power is not required.

At present most of the power required is obtained mainly from two sources. One is from the burning of fossil fuels, i. e. coal, natural gas and oil. The second way of producing electricity is by means of generators that get their power from steam or water turbines. Electricity so produced then flows through transmission lines to houses, industrial plants, enterprises, etc.

It should be noted, however, that the generation of electricity by these conventional processes is highly uneconomic. Actually, only about 40 per cent of heat in the fuel is converted into electricity. Besides, the world resources of fossil fuels are not ever-lasting. On the other hand, the power produced by hydroelectric plants, even if increased many times, will be able to provide for only a small fraction of the power required in the near future. Therefore, much effort and thought is being given to other means of generating electricity.

One is the energy of hot water. Not long ago we began utilizing hot underground water for heating and hot water supply, and in some cases, for the generation of electricity.

Another promising field for the production of electric power is the use of ocean tides. Our engineers are engaged in designing tidal power stations of various capacities. The first station utilizing this principle began operating in Russia on the Barents Sea in 1968.

The energy of the sun which is being used in various ways represents a practically unlimited source.

Using atomic fuel for the production of electricity is highly promising. It is a well-known fact, that one pound of uranium contains as much energy as three

million pounds of coal, so cheap power can be provided wherever it is required. However, the efficiency reached in generating power from atomic fuel is not high, namely 40 per cent.

No wonder, therefore, that scientists all over the world are doing their best to find more efficient ways of generating electricity directly from the fuel. They already succeeded in developing some processes which are much more efficient, as high as 80 per cent, and in creating a number of devices capable of giving a higher efficiency. Scientists are hard at work trying to solve these and many other problems.

2. Ответьте на следующие вопросы:

1. What is the industrial progress of mankind based on?
2. Which is the first widely applied method of producing electricity at present?
3. Which is the second way of generating power?
4. What (how high) is the efficiency of these two methods?
5. What do we use the energy of hot water for?
6. When and where did the first power station using ocean tides begin operating in Russia?
7. What can you say about the energy of the sun?
8. What fuel is the most promising for the production of electricity?
9. Is the efficiency of generating power from atomic fuel high or not?
10. What problem do scientists pay great attention to?

3. Переведите предложения, определив функцию причастия I.

1. A molecule is a compound consisting of two or more atoms.
2. Combining hydrogen with oxygen in the proportion of two atoms of hydrogen and one atom of oxygen we produce water.
3. When speaking about oxygen it is necessary to say that it is a colourless, odourless gas having density at standard pressure and temperature of about one seven-hundredth that of water. It is soluble in water becoming liquid at about 180 °C.
4. While burning different substances combine with oxygen.

5. The assistant was preparing the solution very carefully.

4. Переведите предложения с предлогом FOR

1. It’s bad for you to smoke so much.

2. There is nothing for me to say.

3. The rain can last long enough for us to miss the train.

4. The day was much too cold and rainy for anyone to have a good time.

5. Einstein always answered all students’ questions, for there were no foolish or simple questions for him.

III. Задайте все возможные вопросы к этим предложениям.

1. He often speaks English in class.

2. They always are at school in time.

5. Переведите предложения на русский язык; определите, чем являются слова, оканчивающиеся на -ing (причастием, герундием или отглагольным существительным)

1. The Earth and the Moon travel together making a complete trip around the Sun once a year.

2. Besides using optical telescopes scientists are extensively employing radio telescopes, which are huge antennae, constantly listening to the radio signals corning from our distant neighbours in the universe.

3. Astronomers determine the mass of the Sun by calculating its effects on the Earth.

4. Knowing how to detect radio signals emitted by the Sun and other heavenly bodies people can greatly enlarge their possibilities of observing the universe.

5. The night sky radiation prevents the astronomer from seeing the most distant objects.

Вариант 4

1. Прочтите текст, переведите его и задайте к тексту 7 вопросов разных типов.

POWER ENGINEERING FACULTY

The faculty trains specialists and awards the diplomas in power engineering. Its graduates can design and operate systems for generating transmitting and distributing electric power such as: electrical generators, inductors, capacitors, transformers and etc. Several important developments have appeared in this field. One of this is the ability to transmit power at extremely high voltages in both direct current and alternating current modes, reducing power losses. Another is real-time control of power generation, transmission and load distribution using computers. The students are also trained how to install and maintain the equipment.

Research is done in well-equipped laboratories and power engineering institutions. The teaching building houses computer rooms to assist learning and study.

Training comprises lectures, tutorials, seminars, practical classes in laboratories, private study and individual research project resulting in a thesis. Students can study full-time or do a correspondence course. The Power Engineering Faculty offers a set of syllabuses licensed by the Ministry of Education of the Russian Federation Radio engineering faculty is the widest field of engineering, concerned with systems and devices that use electric power and signals. The most important subjects in this field are: electric power and machinery, electronic circuits, control systems, computer design, superconductors, solid-state electronics, robotics, laser, radar, consumer electronics and fiber optics.

2. Переведите эти предложения.

1. For food of a rotor of the generator of alternating current use direct current.

2. At the raising transformer k=<l.

3. Increasing by means of the transformer tension by 4 times, by 4 times we lower current.

4. In an oscillatory contour there is a transformation of energy of electric field in energy of a magnetic field.

5. To reduce the frequency of alternating current, resistance of the chain containing the coil of inductance decreases.

3. Подберите заголовок к описанию.

Titles: SEMICONDUCTOR, ELECTRIC FURNACE, CONDUCTOR, RESISTOR,

1. a material that allows the current to flow without much resistance, such as copper wire.

2. component of an electric circuit.

3. is a material whose conductivity ranges between that of conductors and non-conductors of insulators.

4. electrically heated device used industrially for melting metals or firing ceramics.

4. Переведите слова-термины.

1. Economics and management in power engineering.
2. Thermoelectric power plants.
3. Electric power plants.
4. Electric power systems and networks.
5. Power supply.
6. High voltage electrical and power engineering.
7. Relay protection and automation of electric power plants.
8. Safety engineering.
9. direct current.
10. alternating current.

Вариант 5

1. Научитесь читать текст, переведите его и задайте к тексту 7 вопросов разных типов.

ELECTRIC INSULATION

Insulation, any material that is a poor conductor of heat or electricity, and that is used to suppress the flow of heat or electricity.

The perfect insulator for electrical applications would be a material that is absolutely nonconducting; such a material does not exist. The materials used as insulators, although they do conduct some electricity, have a resistance to the flow of electric current as much as 2.5 × 1024 greater than that of good electrical conductors such as silver and copper. Materials that are good conductors have a large number of free electrons (electrons not tightly bound to atoms) available to carry the current; good insulators have few such electrons. Some materials such as silicon and germanium, which have a limited number of free electrons, are semiconductors and form the basic material of transistors.

In ordinary electric wiring, plastics are commonly used as insulating sheathing for the wire itself. Very fine wire, such as that used for the winding of coils and transformers, may be insulated with a thin coat of enamel. The internal insulation of electric equipment may be made of mica or glass fibers with a plastic binder. Electronic equipment and transformers may also use a special electrical grade of paper. High-voltage power lines are insulated with units made of porcelain or other ceramic, or of glass.

The specific choice of an insulation material is usually determined by its application. Polyethylene and polystyrene are used in high-frequency applications, and mylar is used for electrical capacitors. Insulators must also be selected according to the maximum temperature they will encounter. Teflon is used in the high-temperature range of 175° to 230° C (350° to 450° F). Adverse mechanical or chemical conditions may call for other materials. Nylon has excellent abrasion resistance, and neoprene, silicone

rubber, epoxy polyesters, and polyurethanes can provide protection against chemicals and moisture.

2. Выберите правильный вариант ответа и переведите.

1. What actions of electric current are observed at a current transmission through the metal conductor?

• Heating and magnetic action, isn't present chemical action. • Heating, chemical and magnetic actions. • Chemical and magnetic actions, heatings aren't present. • Heating and chemical action, isn't present magnetic action.• Only magnetic action.)

2. Two conductors of identical length are made of one material. What of the ratios given below for electric resistance of the first R1 and the second R2 of conductors fairly if the area of cross section of the first conductor is 4 times more than the second?

(R2 = 4R1, R1 = R2, R1 = 4R2, The task has no unambiguous decision. Among the provided answers there is no true.)

3. To that the general resistance of an electric chain, if resistance of each resistor of equally 4 Ohms is equal?

(10 Ohms, 16 Ohms, 12 Ohms, 8 Ohms, 4 Ohms, 1 Ohm)

3. Подберите заголовок к описанию.

Titles: CIRCUMFERENCE, DIAMETER, ARC, RADIUS

A portion of a circumference.

A bounding line of a circle.

A straight line drawn from the center to the circumference.

Equal to twice the radius.

4. Переведите слова-термины.

1) internal combustion engine

2) consuming much power

3) reliable

4) load distribution

5) capacitor

6) teaching manual

7) maintenance

8) alternating current

9) integrated circuits

10) power supply

Варианты контрольных работ для II семестра:

Вариант 1

MAKING ELECTRICITY

Mr. Robertson smoked a cigarette. He knocked some ash off his cigarette on to the table, and then he took his fountain-pen out of his pocket. He rubbed his fountain-pen on the sleeve of his coat.

"Now watch," he said.

He put the fountain-pen quite close to the ash, some of the cigarette ash jumped up in the air and stuck to the fountain-pen.

"That's funny," said John. "How did you do that?"

"It isn't a trick," said Mr. Robertson, "anybody can do it! Something happens to the pen when you rub it on your sleeve. The pen becomes electrified."

"What does 'electrified' mean?" asked John.

"You can make electricity by rubbing two things together. You can also make electricity by putting substances like zinc and copper in some chemicals. And you can make electricity by putting a magnet to a wire. There are different ways of making electricity."

"Is electricity the same as magnetism?" asked John.

"No," said his father. "Why do you ask?"

"Well," said John, "the electricity picked up cigarette ash, and a magnet picks up things."

"Yes," said his father. "But a magnet doesn't pick up cigarette ash. It picks up iron and steel. My fountain-pen kept its electricity only for a little while. Electricity can move about. It moves very fast over a wire or metal plates. It even moves very fast through our bodies. Lightning is electricity too, and, if it strikes anybody, it can kill him."

"What makes lightning?" asked John.

"It comes from the clouds. If a cloud comes near the earth, the electricity will jump over the space between. It will jump from the cloud to the earth. That makes a flash of lightning," said Mr. Robertson.

"And what is thunder?" asked John.

"Thunder comes because the electricity tears its way through the air — and makes the air vibrate."

"Do those vibrations make any noise?"

"Yes, those vibrations make the noise of thunder," said Mr. Robertson.

2. Ответьте на следующие вопросы:

1. Where did Mr. Robertson knock the ash off?
2. What did he do with his fountain-pen?
3. What stuck to the fountain-pen?
4. Why did the cigarette ash stick to the fountain-pen?
5. How can we make electricity?
6. What is the difference between electricity and magnetism?
7. Does electricity move very fast?
8. What makes lightning?
9. What is thunder?
10. What makes the air vibrate?

3. Переведите предложения, определив функцию инфинитива.

1. Above certain critical temperature changes begin to take place in the molecular structure of a metal.

2. To prepare metals for practical use requires much knowledge and experience.

3. The aim of any research is to enlarge the possibilities which are offered by modern science.

4. In order to prevent corrosion metals to be used in industry must be covered with special paint.

5. It is difficult to define what an amorphous material is. It may be composed of crystals which are too small to be detected

4. Переведите предложения с предлогом FOR

1. The unusual phenomenon occupied the scientist's thoughts for some weeks.

2. For a few years Albert Einstein lived in Prague.

3. Einstein's work was a great surprise for scientists all over the world.

4. In 1921 Einstein got his Nobel Prize not for the theory of relativity but for a logic explanation of photoelectric effect.

5. Einstein always answered all students' questions, for there were no foolish or simple questions for him.

5. Задайте все возможные вопросы к этим предложениям.

1. You eat very tasty cakes at school twice a week.

2. Our boys are playing football in the yard next Sunday.

6. Определите, какой частью речи является слово с окончанием –ing и переведите эти предложения.

1. The reading of a good book gives me a lot of pleasure.

2. Growing tomatoes need a lot of sunshine.

3. Being frightened by the dog , the cat climbed a high fence.

4. They are going to enter the University after leaving school.

5. He went out to meet the returning women.

Вариант 2

1. Read and translate the text.

PEACEFUL ATOMS

Achievements in studying atom structure have opened up new, practically unlimited possibilities to humanity for further mastering nature's forces. The discovery of atomic energy provides as profound effect for the benefit of civilization as the discovery of fire and electricity.

After having recovered from the shock of unimaginable horror of the explosion of the atomic bomb over Hiroshima people asked scientists how soon they would be able to apply the immense power of fissioned nucleus to peaceful purposes. Many problems had to be solved: the main one was that of "braking" the released neutrons efficiently so that the chain reaction could be controlled.

The "classical" solution to this problem is conducting the heat generated by the fission process out of the reactor, making it boil water and forcing the resulting steam to drive turbines which, in their turn, drive electric generators. It is a way which works well although it is still rather expensive.

It is to be noted that the first power station fed by atomic fuels which was also the world's first atomic power station started working in Obninsk, near Moscow, in 1954. Its capacity was 5,000 kilowatts. Thirty years later in the Soviet Union there were already 13 atomic power stations with the total capacity of over 21 million kilowatts.

At the same time with large atomic stations smaller mobile electricity producing units have been created based on the discovery of radioactive sources — isotopes. Mobile nuclear installations may be carried by rail and then by transporters to the out-of-the-way regions even in areas having no roads. Such a station according to estimates can operate without being recharged for two years.

Today scientists are looking for new more efficient nuclear processes of producing energy. But it was only lately that the physicists understood that the process of producing tremendous energy by stars, including our Sun, was the very process they were looking for. Now we know that this thermonuclear process is called fusion and it

takes place at fantastically high temperatures. It can be done only by imitating on the Earth the process that makes the Sun shine.

There are many difficult problems to overcome before thermonuclear power stations based on this process can become a reality, but the problem of fuel supply is the least of them: the oceans of the Earth are practically an inexhaustible source ofdeuterium which plays the decisive part in the fusion process and its extraction from sea water is neither complicated nor expensive.

In short, peaceful uses of atomic energy are vast — but we must stop using it on weapons of mass annihilation.

2. Ответьте на следующие вопросы:

1. What possibilities have the achievements in the study of atom structure opened up?

2. What question did people ask scientists after the explosion of the first atomic bomb?

3. What was the main problem in applying the immense power of fissioned nucleus to peaceful purposes?

4. When and where did the first atomic power station start working?

5. What was its capacity?

6. Why are mobile nuclear installations convenient?

7. How long can they operate without being recharged?

8. What thermonuclear process takes place at fantastically high tem-peratures?

9. What element plays the decisive part in fusion process?

10. What can this element be extracted from?

3. Переведите предложения, определив функцию инфинитива.

1. Above certain critical temperature changes begin to take place in the molecular structure of a metal.

2. To prepare metals for practical use requires much knowledge and experience.

3. The aim of any research is to enlarge the possibilities which are offered by modern science.

4. In order to prevent corrosion metals to be used in industry must be covered with special paint.

5. It is difficult to define what an amorphous material is. It may be composed of crystals which are too small to be detected.

6. This metal is too brittle to be hammered.

4. Переведите предложения с предлогом FOR

1. The unusual phenomenon occupied the scientist's thoughts for some weeks.

2. For a few years Albert Einstein lived in Prague.

3. Einstein's work was a great surprise for scientists all over the world.

4. In 1921 Einstein got his Nobel Prize not for the theory of relativity but for a logic explanation of photoelectric effect.

5. Einstein always answered all students' questions, for there were no foolish or simple questions for him.

5. Задайте все возможные вопросы к этим предложениям.

1. Julia took a bundle of her latest photographs yesterday.

2. They will help you in the kitchen tomorrow.

6. Определите, какой частью речи является слово с окончанием –ing и переведите эти предложения.

1. The building of this house will cost much money.

2. I remember reading a very clever article on market economy.

3. My greatest pleasure is traveling.

4. He was writing a letter when I entered the room.

5. While translating the text, I looked up many words in the dictionary.

Вариант 3

1. Read and translate the text.

A DIESEL ENGINE

A Diesel engine is a machine which produces power by burning oil in air which has been quickly compressed to a high pressure by a piston moving in a closed cylinder. In Fig. 14a the piston is shown at its lowest position, about to start upwards on its compression stroke. As it moves upwards it compresses the air above it into a smaller and smaller volume. If the final volume of the air is one twenty-fifth of its original volume, the engine is said to have a compression ratio of 25.

In Fig. 146 the piston is shown at its highest position. Here the air in the cylinder is highly compressed and is also very hot. (Have you not noticed how your bicycle-pump gets hot when you pump up your tyres?) At this stage of the cycle of operation oil is injected into the hot air. The oil ignites instantaneously. The heat of its combustion raises the temperature of the air still higher and so the pressure of the enclosed air is very much increased also. »

The piston is therefore forced down again violently. This second stroke of the piston is called the working-stroke.

The fourth stroke of the piston is downwards again. The exhaust valve is closed and an inlet valve is opened to allow fresh air to refill the cylinder. After four strokes, two up and two down, the cylinder is again in the condition we began with. We say that it has completed its four-stroke cycle.

A Diesel engine usually has four cylinders which fire in turn. The four pistons are connected to a rotating crankshaft so that the working-stroke of one piston is always available to drive the three simultaneously non-working-strokes of the other pistons. The remaining energy of the working-stroke is available for the external work the Diesel engine has to do.

After reaching the bottom of its working-stroke the piston begins to rise again. Its purpose now is to sweep the products of combustion from the cylinder. So a valve is

opened to let the spent gases, escape to the exhaust pipe as the piston rises to the top of its third stroke.

2. Ответьте на следующие вопросы:

1. How does a Diesel engine produce power?

2. How does the piston in compress the air?

3. When is the engine said to have a compression ratio of 25?

4. What happens to the air in the cylinder when the piston is at its highest position?

5. How does the oil ignite?

6. When is the piston forced down again?

7. What is the second stroke of the piston called?

8. When does the piston begin to rise again?

9. How does fresh air refill the cylinder?

10. How are the four pistons connected to the rotating crankshaft?

3. Переведите предложения, определив функцию причастия I.

1. The solution is boiling.

2. The boiling solution has neither colour nor odour.

3. Watching the tea-kettle James Watt saw a thick cloud of steam rising from it.

4. Taking off the cover he saw nothing but boiling water.

5. Being poor he had to work hard.

4. Переведите предложения с предлогом FOR

1. It isn’t for me to say so.

2. The unusual phenomenon occupied the scientist’s thoughts for some weeks.

3. I stood aside for us to pass it.

4. I have arranged for you to have a private room.

5. Einstein always answered all students’ questions, for there were no foolish or simple questions for him.

5. Задайте все возможные вопросы к этим предложениям.

1. Nick spoke to Tom in the park yesterday.

2. The flower in the vase is very beautiful.

6. Переведите предложения на русский язык; б) определите, чем являются слова, оканчивающиеся на -ing (причастием, герундием или отглагольным существительным)

1. Solar batteries converting the energy of the Sun directly into electric current are sources of electric energy for radio and television equipment on spaceships and man-made satellites.

2. Using atomic fuel for the production of electricity is one of the most perspective sources.

3. Splitting atoms scientists have learned to release much energy.

4. Splitting uranium may release neutrons to split more atoms to form a chain reaction.

5. At the beginning of the century scientists succeeded in breaking the nucleus of the atom by attacking it with very small particles flying with high speed.

Вариант 4

1. Научитесь читать текст, переведите его и задайте к тексту 7 вопросов разных типов.

An electric current is flow of electricity. There are two kinds of electricity: positive and negative. Glass rubbed with is positively charged, ebonite rubbed with fur is negatively charged. Like charge repel, unlike charges attract. The leaf electroscope is used to detect, distinguish and measure charges. The ultimate particle of negative electricity is called the electron; that of positive electricity is called the proton. It has been known for centuries that certain black, heavy stones have the property of attracting iron, this property being called magnetism. A body that exhibits magnetism is called a magnet. The two types of a magnet that show the strongest magnetism are called the North Pole and the South Pole. Magnets not only affect ordinary iron, but they affect one another. When a pole of one magnet is brought toward a pole of the second magnet, they will repel if both are north poles or both are south poles, they will attract if one is a north pole and the other a south pole.

The region in which magnetic forces act is called a magnetic field. When placed in a strong magnetic field, iron becomes magnetized. Electricity and magnetism are closely connected. Almost all metals are good conductors of electricity, with copper being one of the best conductors of all. Glass, paper, rubber are the most common non-conductors or insulators.

2. Выберите правильный вариант и переведите это предложение.

1. For food of the majority of radio schemes it is required...(A ... direct current. B... alternating current.)

2. In electric motors there is a transformation... (A. ... energy of electric field in energy of a magnetic field. B... electric energy in the mechanical. C... electric energy in the internal. G... mechanical energy in the electric. D... internal energy of plasma in the electric.)

3. Increasing by means of the transformer tension by 4 times …. (A. … we increase current. B. … we lower current.)

4. In an oscillatory contour there is a transformation... (A. ... electric energy in the internal. B... mechanical energy in the electric. C... energy of electric field in energy of a magnetic field. G... internal energy of plasma in the electric. D... electric energy in the mechanical.)

5. To reduce the frequency of alternating current, resistance of the chain containing the coil of inductance...

(A. ... increases. B... decreases. C... won't change.)

3. Подберите заголовок к описанию.

Titles: AMPERE, VOLT, OHM, SUBSTUNCE

1.The practical unit of electromotive force.

2.The practical unit of resistance.

3. The practical unit of current.

4.Porcelain, ebonite, rubber, glass.

4. Переведите слова-термины.

1.automation and computer engineering, 2. radio engineering, 3. physical engineering, 4. applied mathematics and informatics / information science / computer science, 5. electro-mechanics, 6. Aircraft, 7. power engineering, 8. Humanities, engineer's degree, 9. Candidate of Science (Cand.Sc.)

Вариант 5

1. Научитесь читать текст, переведите его и задайте к тексту 7 вопросов разных типов.

Resistor

Resistor, component of an electric circuit that resists the flow of direct or alternating electric current. Resistors can limit or divide the current, reduce the voltage, protect an electric circuit, or provide large amounts of heat or light.

An electric current is the movement of charged particles called electrons from one region to another. The amount of resistance to the flow of current that a resistor causes depends on the material it is made of as well as its size and shape. Resistors are usually placed in electric circuits, which are devices formed when current moves through an electrical conductor (a material that allows the current to flow without much resistance, such as copper wire) and when the conductor makes a complete loop.

When a voltage, or electric potential, is applied to opposite ends of a circuit, it causes current to flow through the circuit. As the current flows, it encounters a certain amount of resistance from the conductor and any resistors in the circuit. Each material has a characteristic resistance. For example, wood is a bad conductor because it offers high resistance to the current; copper is a better conductor because it offers less resistance. In any electric circuit, the current in the entire circuit is equal to the voltage across that circuit divided by the resistance of the circuit. Resistors are often made to have a specific value of resistance so that the characteristics of the circuit can be accurately calculated.

Resistors can help divide voltages, and when combined with other elements can help convert voltages for a specific electrical design. Resistors can also be used to provide intense light or heat. For example, the heating element in a household cooking range is a resistor, as is the tungsten filament in a common incandescent lamp. Resistors with adjustable resistance are called rheostats or potentiometers. These types of resistors are used in appliances when the current needs to be adjusted or when the resistance needs to be varied, as with lights that dim or adjustable generators.

2. Переведите эти предложения.

1. What letter designates resistance of the conductor and this size is measured in what units? R; ohm (Ohm).

2. It is possible to measure a potential difference in an electric chain by Voltmeter and this device turns on in an electric chain in parallel.

3. It is possible to measure the current of a site of an electric chain by Ampermeter and this device turns on in an electric chain consistently.

4. At increase in temperature of the metal conductor its resistance to electric current increases.

3. Подберите заголовок к описанию.

Titles: BATTERY, ELECTRIC CIRCUIT, WIRE, METER

1. An instrument which measures electrical values.
2. A source of electrical energy.
3. A path through which an electric current flows.
4. A fibre made of metal.

4. Переведите слова-термины.

1) Alloy
2) carbon
3) substance
4) toughness
5) hardness
6) ductility
7) malleability
8) tension
9) safety engineering
10) accident

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