

МИНИСТЕРСТВО ОБРАЗОВАНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ
БРЕСТСКИЙ ПОЛИТЕХНИЧЕСКИЙ ИНСТИТУТ
КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ

МЕТОДИЧЕСКИЕ УКАЗАНИЯ
ПО АНГЛИЙСКОМУ ЯЗЫКУ
для студентов заочной формы обучения
технических специальностей

Брест 1999

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Методические указания предназначены для студентов технических специальностей, продолжающих изучение английского языка.

Основная цель методических указаний - развитие практических навыков чтения и перевода специальной технической литературы. Данные указания предусматривают самостоятельную работу студентов.

Контрольные задания составлены в соответствии с тематическим учебным планом, предлагаемым кафедрой иностранных языков БПИ. Каждое контрольное задание предлагается в 5 вариантах. К контрольным заданиям прилагаются образцы выполнения.

Данные методические указания одобрены на заседании кафедры иностранных языков и рекомендованы к изданию.

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ВЫПОЛНЕНИЕ КОНТРОЛЬНЫХ ЗАДАНИЙ И ОФОРМЛЕНИЕ КОНТРОЛЬНЫХ РАБОТ.

- 1) Каждое контрольное задание в данном пособии предлагается в пяти вариантах в соответствии с последними цифрами студенческого шифра: студенты, шифр которых оканчивается на 1 или 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 письменные контрольные работы следует в отдельной тетради. На обложке тетради напишите свою фамилию, номер контрольной работы и название учебника, по которому вы занимались.
- 3) При переводе текста, вам следует переписать текст на левой странице, а перевод на правой странице. Оставляйте широкие поля с обеих сторон.

Левая сторона

Правая сторона

Поля

Английский текст

Русский текст

Поля

- 4) Для выполнения контрольных заданий рекомендуем пользоваться следующей литературой:
Р.Ф. Пронина «Пособие по английскому языку для заочных технических вузов»;
«Англо-русский словарь» под ред. Мюллера.
- 5) Выполненные контрольные работы направляйте для проверки и рецензирования в институт в установленные сроки.
- 6) При получении отрецензированной контрольной работы внимательно прочитайте рецензию, ознакомьтесь с замечаниями рецензента и проанализируйте отмеченные в работе ошибки. Руководствуясь указаниями рецензента, проработайте ещё раз учебный материал. Все предложения, в которых были обнаружены орфографические ошибки или неточности перевода, перепишите начисто в исправленном виде в конце данной контрольной работы.

КОНТРОЛЬНОЕ ЗАДАНИЕ №1

Для того чтобы правильно выполнить задание 1, необходимо усвоить следующие разделы курса.

- 1) Имя существительное. Множественное число. Артикли и предлоги как показатели имени существительного. Выражения падежных отношений в английском языке с помощью предлогов и окончания -s. Существительное в функции определения и его перевод на русский язык.
- 2) Имя прилагательное. Степени сравнения имен прилагательных. Конструкции типа the more ... the less.
- 3) Числительные.
- 4) Местоимения: личные, притяжательные, вопросительные, указательные, неопределенные и отрицательные.
- 5) Форма настоящего (Present), прошедшего (Past) и будущего (Future) времени группы Indefinite действительного залога изъявительного наклонения. Спряжение глаголов to be, to have в Present, Past и Future Indefinite. Повелительное наклонение и его отрицательная форма.
- 6) Простое распространенное предложение: прямой порядок слов повествовательного и побудительного предложений в утвердительной и отрицательной формах; обратный порядок слов вопросительного предложения.оборот there is (are).
- 7) Основные случаи словообразования. Используйте следующие образцы выполнения упражнений.

Образец выполнения 1 (к упр. I)

Грамматическая функция окончания –s

1. The students attend lectures and seminars on history. Студенты посещают лекции и семинары по истории.

Lectures - множественное число от имени существительного **a lecture** лекция.

2. He lectures on building materials. Он читает лекции по строительным материалам.

Lectures - 3-е лицо единственного числа от глагола **to lecture** в Present Indefinite.

3. My brother's son is a student. Сын моего брата - студент.

В слове brother's 's - окончание притяжательного падежа имени существительного в единственном числе.

- My brothers' sons are students. Сыновья моих братьев – студенты.

Слово brothers' - форма притяжательного падежа имени существительного **a brother** во множественном числе.

Образец выполнения 2 (к упр. II)

Особенности перевода на русский язык английских имен существительных, употребляющихся в функции определения, стоящего перед определяемым словом.

1. The scientist works at some problems of low temperature physics. Этот ученый работает над некоторыми проблемами физики низких температур.
2. The girl studies at the State University. Эта девушка учится в государственном университете.

Образец выполнения 3 (к упр. V)

1. Lomonosov founded the first Russian University in Moscow. Ломоносов основал первый русский университет в Москве.

Founded - Past Indefinite Active от стандартного глагола **to found**.

Вариант 1

I. 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:

- 1) показателем 3-го лица единственного числа глагола в Present Indefinite;
- 2) признаком множественного числа имени существительного;
- 3) показателем притяжательного падежа имени существительного (см.образец выполнения 1).

Переведите предложения на русский язык.

- 1) Shakespeare wrote many different kinds of plays.
- 2) William's mother was a farmer's daughter.
- 3) Hyde Park covers 360 acres.

II. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именем существительным.

- 1) The bus stop is not far from here.
- 2) There are only daylight lamps in this room.
- 3) The "Globe" was built in the theatre centre of London.

III. Перепишите следующие предложения, содержащие различные формы сравнения, и переведите их на русский язык.

- 1) Shakespeare was one of greatest poets of the world.
- 2) The house in which Shakespeare was born is still the most famous house in England.
- 3) The longer is the night, the shorter is the day.

IV. Перепишите и письменно переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

- 1) At some of the London Underground stations there are lifts, others have escalators.
- 2) Any student of our group can speak on Shakespeare's plays.
- 3) No theatre was as popular as the "Globe".

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

- 1) People visit the school where Shakespeare had his lessons when he was a boy.
- 2) At night people go to the beautiful theatre.
- 3) Tomorrow we shall watch "Hamlet" on TV.

VI. Прочитайте и устно переведите на русский язык с 1-го по 7-й абзацы текста. Перепишите и письменно переведите 1, 2, 3, 6 и 7-й абзацы.

Пояснения к тексту

1. William Shakespeare - Вильям Шекспир
2. to baptize - крестить
3. he is believed to have been born... - полагают, что он родился
4. acting company - актерская группа
5. Ghost - призрак, тень (отца Гамлета)
6. "Hamlet" - "Гамлет"
7. "King Lear" - "Король Лир"; "Othello" - "Отелло"; "Macbeth" - "Макбет"
8. "The Merry Wives of Windsor" - "Виндзорские проказницы"
9. "Much Ado about Nothing" - "Много шума из ничего"
10. may have been lost - возможно, погибли
11. the "Globe" - "Глобус" (название театра)

WILLIAM SHAKESPEARE (1564-1616)

1. William Shakespeare, the greatest and most famous of English writers, and probably the greatest playwright who has ever lived, was born in the town of Stratford-on-Avon.

2. In spite of his fame we know very little about his life. The things that we know about Shakespeare's life begin with the date when he was baptized in the church of Stratford, on April 26, 1564, when he was only a few days old. So he is believed to have been born on April 23.
3. William lived in Stratford until he was about twenty-one, when he went to London. We do not know why he left Stratford-on-Avon.
4. There is a story that Shakespeare's first job in London was holding rich men's horses at the theatre door. But nobody can be sure that this story is true. Later, Shakespeare became an actor and a member of one of the chief acting companies. Soon he began to write plays for this company and in a few years became a well-known author.
5. Shakespeare's experience as an actor (although he usually acted only small parts like Ghost in "Hamlet") helped him greatly in the writing of his plays. His knowledge of the stage and his poetical genius made his plays the most wonderful ones ever written.
6. Shakespeare wrote 37 plays. Among them there are deep tragedies, such as "Hamlet", "King Lear", "Othello", "Macbeth", light comedies, such as "The Merry Wives of Windsor", "All's Well That Ends Well", "Twelfth Night", "Much Ado about Nothing", historical dramas, such as "Henry IV", "Richard III". Most of Shakespeare's plays were not published in his life-time. So some of them may have been lost in the fire when the "Globe" burned down in 1613.
7. Shakespeare spent the last years of his life at Stratford where he died in 1616. He was buried in the church of Stratford. A monument was erected to the memory of the great playwright in the Poet's Corner in Westminster Abbey.
8. Shakespeare was a great humanist. His belief in the high and noble features of man's mind and heart was the foundation of his great humanism.

Вариант 2

I. 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:

- 1) показателем 3-го лица единственного числа глагола в Present Indefinite.
- 2) признаком множественного числа имени существительного;
- 3) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык:

- 1) The first part of the book describes Gulliver's voyage to Lilliput.
- 2) The second part describes Gulliver's voyage to the country of giants.
- 3) The fourth part brings the hero to the land of "noble horses".

II. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именем существительным.

- 1) The students of our group will go to the State History Museum tomorrow.
- 2) My brother is a beginning college student.
- 3) Teams of figure skaters and ice-hockey players undergo intensive training at the Sports Centre.

III. Перепишите следующие предложения, содержащие различные формы сравнения, и переведите их на русский язык.

- 1) J. Swift was one of the greatest English satirical writers.
- 2) The more I thought of that plan, the less I liked it.
- 3) Your translation is better than mine.

IV. Перепишите и письменно переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

- 1) Some 350 people attend a yachting school.
- 2) Do you know any foreign language?
- 3) Any exhibit of this museum is valuable.

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

- 1) The teacher asks the students many questions.
- 2) He told them an interesting story.
- 3) In two years my brother will become an engineer.

VI. Прочитайте и устно переведите на русский язык с 1-го по 6-й абзацы текста. Перепишите и письменно переведите 1, 2, 3 абзацы.

Пояснения к тексту

- 1) Jonathan Swift - Джонатан Свифт
- 2) the Whigs and the Tories - Виги и Тори (Партия вигов и партия тори - политические партии, образовавшиеся ко времени английской буржуазной революции 1688 г.; сейчас - партия либералов и партия консерваторов.)
- 3) proper words in proper places - надлежащие слова в надлежащем месте

JONATHAN SWIFT (1667-1745)

1. Jonathan Swift was born to a poor English family in Dublin. His father died some months before the child's birth, and the child was brought up by his uncle. With the help of his uncle he was sent to school and then to the university. Some time later he went to London and got a job as secretary to an English statesman.
2. There were two political parties in England at that time, the Whigs and the Tories. Jonathan Swift first supported the Whigs, then the Tories, but both disappointed him. He saw that neither of the parties cared for the fate of the country.

3. In 1713, he left London for Ireland, where he became a parson. There he saw that the Irish people lived in poverty and hunger and were oppressed by the English ruling classes. At that time Swift wrote his famous pamphlets in defence of the Irish people.
4. The great work which has been translated into almost every language of the world and has made its author one of the greatest English prose writers is "Gulliver's Travels". Although children all over the world like Swift's "Gulliver's Travels", it was not written as a children's book. "Gulliver's Travels" is not only a good story, but a satire in which Swift attacks wrong and injustice, and mocks at some of the silly ideas of the existing world. "Gulliver's Travels" is a satire on the political and social system of England of those days, on the English bourgeois and aristocratic society. It is one of the finest works of world literature. It consists of four parts.
5. Swift was a brilliant stylist. He had a great talent for writing clear and logical prose. His love for "proper words in proper places", his clear ironical style made him one of the greatest English writers.
6. Swift died in 1745, at the age of 78.

Вариант 3

I. 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:

- 1) показателем 3-го лица единственного числа глагола в Present Indefinite.
- 2) признаком множественного числа имени существительного;
- 3) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

- 1) January 12 is Jack London's birthday.
- 2) Jack London is optimistic in his stories.
- 3) The author mentions this phenomenon in his article.

II. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именем существительным.

- 1) Not long ago our family moved into a large three-room flat.
- 2) My little sister likes to read bird and animal stories.
- 3) An internal combustion engine is used in this lorry.

III. Перепишите следующие предложения, содержащие различные формы сравнения, и переведите их на русский язык.

- 1) Jack London one of the greatest American writers.
- 2) The more I studied the English language, the more I liked it.
- 3) My friend is one of the best students of our group.

IV. Перепишите и письменно переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

- 1) No student of that group studies Spanish.
- 2) Some five hundred people were present at the meeting.
- 3) Have you any books on chemistry?

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

- 1) The dean will come here later.
- 2) The student made no mistakes in his translation.
- 3) The postmen bring letters two times a day.

VI. Прочитайте и устно переведите на русский язык с 1-го по 6-й абзацы текста. Перепишите и письменно переведите абзацы 1-4.

Пояснения к тексту:

- 1) California - Калифорния (штат в США)
- 2) "Martin Eden" - "Мартин Иден"

JACK LONDON (1876-1916)

1. London was born in San Francisco in a very poor family. He began working at the age of eight selling newspapers and doing other odd jobs. Though he was only a boy, he very often did a man's work. Later he used to say that he had had no childhood. But soon he discovered the world of books. At ten he was taking books of adventure, travel and discoveries from a public library.
2. By the time he was twenty-two, he had seen more of life than most people do in fifty years. He had worked at factories; he had travelled across the ocean as a sailor; he had tramped from San Francisco to New York with an army of unemployed.
3. In 1896, gold was discovered in Alaska; and together with thousands of other men, Jack London rushed to the new territory. He brought no gold back with him, but he found something better than the yellow metal.

The wonderful stories which he wrote after he returned were based on the life he had lived and on what he had seen and heard in the North.

4. By studying and working nineteen hours a day he managed to enter the University of California, but he did not even finish the first course, for he had to support his mother and father by working in a laundry.
5. During the sixteen years of his literary career, Jack London published about fifty books: short stories, novels, essays. His adventure and animal stories brought him great popularity. London was a sailor for many years, and a great number of his stories are about his own life. One of his best works is "Martin Eden", a semi-biographical novel.
6. In many of Jack London's novels and stories his heroes lead rough and hard lives, fighting against the hardships of nature. These are his best works.

Вариант 4

I. 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:

- 1) показателем 3-го лица единственного числа глагола в Present Indefinite.
- 2) признаком множественного числа имени существительного;
- 3) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

- 1) November 30 is Mark Twain's birthday.
- 2) There are many pages of biting satire in Mark Twain's works.
- 3) Mark Twain belongs to those writers of the past whose works never age.

II. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именем существительным.

- 1) The railway bridge reconstruction started last month.
- 2) They produce high quality cement at that plant.
- 3) Nobody knows when the wheel invention took place.

III. Перепишите следующие предложения, содержащие различные формы сравнения, и переведите их на русский язык.

- 1) Mark Twain's days on the Mississippi were the happiest period of his life.
- 2) The more experiments we carry out, the more data we obtain.
- 3) He begins to work much earlier than I do.

IV. Перепишите и письменно переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

- 1) Any child knows Tom Sawyer.
- 2) Nobody knew anything about this experiment.
- 3) Something important took place there.

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

- 1) Many students attend this professor's lectures.
- 2) They will show us a new film tomorrow.
- 3) The teacher asked him many questions at the examination.

VI. Прочитайте и устно переведите на русский язык с 1-го по 6-й абзацы текста. Перепишите и письменно переведите 1, 3 и 4-й абзацы.

Пояснения к тексту

- 1) Samuel Langhorne Clemens - Самюел Ленгхорн Клеменс
- 2) he used to shout - он имел обыкновение кричать
- 3) pilot - лоцман

MARK TWAIN (1885-1910)

1. His real name was Samuel Langhorne Clemens. He spent his boyhood in the small town of Hannibal, on the Mississippi River. The waters of the great river were his playground. When fishing and swimming with his friends, he used to shout to the boats passing by. And sometimes he climbed aboard and stayed with the bargemen, listening to the adventure stories that they told. He was a bright lively boy. He could easily swim across the Mississippi and was the leader in all the boys' games.
2. In 1847 his father died and it was necessary for the twelve-year-old Samuel to leave school and go to work. For about ten years he worked as a printer in many different towns and cities of America. Then he decided to be a pilot on the Mississippi. Many boats moved up and down the river, carrying all kinds of people. This

work gave Samuel Clemens the opportunity to get to know very much about life. He worked as a pilot for more than four years.

3. Sam did not have a proper education, but he knew well the folklore and tales of the Negroes who lived along the Mississippi River where he grew up.
4. His first short story was published in 1867 under the name of "Mark Twain". Soon after his first short stories began to appear, Mark Twain was acknowledged as the best short story writer in America.
5. In 1876, he published "The Adventures of Tom Sawyer" in which he described the life of a boy in a Mississippi town at the time of his own boyhood. In 1884, "The Adventures of Huckleberry Finn" was published. Since then these books are among the most favourite books of children all over the world.
6. Mark Twain is acknowledged as American's greatest humourist, and his works are really full of humour, from gay jokes to satire.

Вариант 5

I. 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:

- 1) показателем 3-го лица единственного числа глагола в Present Indefinite.
- 2) признаком множественного числа имени существительного;
- 3) показателем притяжательного падежа имени существительного.

Переведите предложения на русский язык.

- 1) Walter Scott occupies a prominent place in the English literature.
- 2) Walter Scott spent much of his boyhood on his grandfather's farm.
- 3) He often travelled about Scotland in search of ballads, songs, traditions.

II. Перепишите следующие предложения и переведите их, обращая внимание на особенности перевода на русский язык определений, выраженных именем существительным.

- 1) The Scott Monument in Edinburgh is a graceful Gothic spire 200 feet high.
- 2) W.Scott is one of the greatest masters of world literature.
- 3) The National Portrait Gallery in Edinburgh has some fine portraits of W.Scott.

III. Перепишите следующие предложения, содержащие различные формы сравнения, и переведите их на русский язык.

- 1) The road became worse as we went along.
- 2) The more you read, the better.
- 3) It is the least you could do for her.

IV. Перепишите и письменно переведите предложения на русский язык, обращая внимание на перевод неопределенных и отрицательных местоимений.

- 1) Do you have any English books at home?
- 2) Nobody was interested in the problem then.
- 3) He has some experience in this field.

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

- 1) Walter Scott studied law at the University.
- 2) Seventeen of W.Scott's 29 novels are historical and 12 are not.
- 3) She will go to Scotland next summer.

VI. Прочитайте и устно переведите на русский язык с 1-го по 6-й абзацы текста. Перепишите и письменно переведите 1, 2, 4 и 6-й абзацы.

Пояснения к тексту:

- 1) Walter Scott - Вальтер Скотт
- 2) Edinburgh - г. Эдинбург
- 3) "Waverley" - "Ваверлей"
- 4) "Guy Mannering" - "Гай Маннеринг"; "Rob Roy" - "Роб Рой"; "Ivanhoe" - "Айвенго"

WALTER SCOTT (1771-1832)

1. Walter Scott is a creator of the historical novel in English literature.
2. He was born in Edinburgh, Scotland. He loved his native land deeply and was greatly interested in its past. In his youth he made a good collection of old Scottish ballads.
3. Walter Scott first became known as a poet. But in 1814 his first novel "Waverley" appeared. During the next few years Scott published many novels among which are "Guy Mannering", "Rob Roy", "Ivanhoe", and he became one of the most famous novelists of his days. Scott worked with unusual speed. "Guy Mannering", for example, was written in six weeks.

4. For most of his life which he spent on the farm at Abbotsford he used to get up at five, light his own fire in cold weather, dress and go out to see his horses. At six he sat down at his writing-table and wrote till nine or ten, when he had breakfast. Then he went on writing for two hours more, and afterwards went out riding or fishing, spending the rest of the day with his family or visiting friends.
5. In his novels Scott describes the historical past of his country. Sometimes he idealizes the old times, and his historical facts are not always exact, but his great love for Scotland helped him to understand the history of his people. His description of the life, customs and habits of his people are very realistic, as he studied them deeply. Through his stories he made Scotland known and loved by the world.
6. Scott showed that the past is not cut off completely from the present but influences it. This is why his novels are read nowadays with no less interest.

КОНТРОЛЬНОЕ ЗАДАНИЕ №2

Для того, чтобы правильно выполнить задание №2 необходимо усвоить следующие разделы курса английского языка по рекомендованному учебнику:

- 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).
Особенности перевода пассивных конструкций на русский язык.
- 2) Модальные глаголы:
 - а) модальные глаголы, выражающие возможность: **can (could), may** и эквивалент глагола **can – to be able**;
 - б) модальные глаголы, выражающие должествование: **must**, его эквиваленты **to have to** и **to be to; should**.
- 3) Простые неличные формы глагола: Participle I (Present Participle), Participle II (Past Participle) в функциях определения и обстоятельства. Gerund – герундий, простейшие формы.
- 4) Определительные и дополнительные придаточные предложения (союзные); придаточные обстоятельственные предложения времени и условия.
- 5) Интернациональные слова.

Образец выполнения 1 (к упр.1)

1. Lobachevsky's geometry **revolutionized** mathematics and the philosophy of science. Геометрия Лобачевского произвела коренное изменение в математике и философии.

Revolutionized – Past indefinite Active от глагола **to revolutionize**.

2. The new laboratory equipment **was sent for** yesterday. Вчера послали за новым оборудованием лаборатории.

Was sent for – Past Indefinite Passive от глагола **to send**.

Образец выполнения 2 (к упр. 2)

1. The changes **affecting** the composition of materials are called chemical changes. Изменения, влияющие на состав материалов, называются химическими изменениями.

Affecting – Participle 1, определение.

2. **When heated** to the boiling point water evaporates. Когда воду нагревают до точки кипения, она испаряется. (или: при нагревании до точки кипения вода испаряется.)

(When) heated – Participle 2, обстоятельство.

3. Heat **is radiated** by the Sun to the Earth. Тепло излучается Солнцем на Землю.

(is) radiated – Participle 2, составная Indefinite Passive от глагола **to radiate** Часть видовременной формы Present.

Вариант 1

1. Перепишите следующие предложения, подчеркните в каждом из них глагол–сказуемое и определите его видовременную форму и залог. В разделе (б) обратите внимание на перевод пассивных конструкций.

- a)
1. If the technological development keeps up, man will atrophy all his limbs but the push-button finger.
 2. When we got talking I found out that I had been at school with his son ten years before.

- b)
1. Dear Sir, Re: Order R1432
The above order has been completed and sent to Liverpool Docks where it is awaiting loading onto SS "MANITOBA" which sails for Dawson, Canada, on the 16 and arrives on 30 July. We have taken special care to see that the goods have been packed as per your instructions, the six crates being marked with your name and numbered 1-6. Each crate measures 6ft x 4ft x 3ft and weighs 5 cwt.
We cannot change the terms of payment which were agreed upon during the negotiations.

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

- 1) The article of the agreement objected to during the negotiations must be recognized.
- 2) Art has an enemy called ignorance.
- 3) When asked why she had missed the train, she said something about her watch being slow,
- 4) Remembering that time was like going back to his childhood and re-living those happy days.

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

- 1) There are three things I can never remember – names, faces and I have forgotten the other.
- 2) He told me that he hadn't been able to ring me up in time.
- 3) Whenever man's friends begin to compliment him about looking young, he may be sure that he is growing old.
- 4) He was to come at six but he didn't come; he said he had to repair his car.

4. Прочтите и устно переведите 1 - 4 абзацы текста. Перепишите и письменно переведите 1 - 3 абзацы.

The Engineering Profession

1. Engineering is one of the most ancient occupations in the history of mankind. Without the skills included in the broad field of engineering, our present-day civilization could never have evolved. The first tool-makers who chipped arrows and spears from rock were the forerunners of modern engineers. The craftsmen who discovered metals in the earth and found ways to refine and use them were the ancestors of mining and metallurgical engineers. And the skilled technicians who devised irrigation systems and erected the marvelous buildings of the ancient world were the civil engineers of their time.
2. Engineering is often defined as making practical application of theoretical sciences such as physics and mathematics. Many of the early branches of engineering were based not on science but on empirical information that depended on observation and experience. The great engineering works of ancient times were constructed and operated largely by means of slave labor. During the Middle Ages people began to seek devices and methods of work that were more efficient and humane. Wind, water, and animals were used to provide energy for some of these new devices. This led to the Industrial Revolution, which began in the eighteenth century. First steam engines and then other kinds of machines took over more and more of the work that had been done by human beings or by animals.
3. Since the nineteenth century both scientific research and practical application of its results have escalated. The engineer now has the mathematical ability to calculate the mechanical advantages that result from the complex interaction of many different mechanisms. He also has new and stronger materials to work with and enormous new sources of power. The Industrial Revolution began by putting water and steam to work;

since then machines using electricity, gasoline, and other energy sources have become so wide spread that they now do a very large proportion of the work of the world.

4. Because of the large number of engineering fields to-day there are often many different kinds of engineers working on large projects. Engineers design and make machines, equipment and the like. Such work requires creative ability and a working knowledge of scientific principles. The engineer must also have an understanding of the various processes and materials available to him and may work in any of the following areas: the organization of manufacture, research and development, design, construction, sales and education. Each engineer is a member of a team often headed by a systems engineer who is able to combine the contributions made by all the different disciplines.

5. Прочитайте абзац 4, выберите утверждение, соответствующее содержанию абзаца.

To be successful in his work the engineer now must ...

- have a good grounding in scientific principles and a deep understanding of the various processes and materials available.
- be able to work as a systems engineer.
- exercise a flexible approach to solving technical and non-technical problems.

Вариант 2

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 (b) обратите внимание на перевод пассивных конструкций.

- a)
- 1) When I went back to the town that I had left eight years before I could hardly recognize the place, everything was so different.
 - 2) Very few people understood Einstein`s theory; though, of course, everybody had heard of him and a fair number of people knew the word “relativity” but hardly anybody could tell you what he had actually said.
- b)
- 1) Seminole Lodge, constructed of fine Northern spruce, was built from Edison`s own plans by a builder in Maine. Made up into sections and sent down by sea, the two dwellings were assembled and erected at Fort Mayers by local workmen. This makes them the first prefab ever built in this country.
 - 2) A body at rest remains at rest unless it is acted upon by an external force.

2. Перепишите следующие предложения, подчеркните причастие 1, 2, и установите функции каждого из них, т.е. укажите, является ли оно определением, обстоятельством или частью глагола – сказуемого. Переведите на русский язык.

- 1) Among the things most often opened by mistake is the mouth.
- 2) Growing tomatoes need a lot of sunshine and must be watered regularly.
- 3) He stood watching the people coming down the street shouting and waving their hands.
- 4) Money spent on brain is never spent in vain.

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

- 1) Weakness of character is the only defect which cannot be amended.
- 2) One must live within his income even if he has to borrow money to do so.
- 3) As we had agreed before, we were to meet at two o`clock to settle all the issues, but Mr. Grey phoned me and said that he was unable to come.
- 4) He may have misunderstood you, that`s why you should ring him up and try to explain everything.

4. Переведите устно абзацы 1 - 4, перепишите и переведите письменно абзацы 1-3.

Hero of Alexandria.

1. About sixty years after the death of Archimedes, Hero of Alexandria was born. Nobody knows the date of his birth, but according to the best authorities, he lived about 150 B.C. In addition to being a great mathematician, he invented the siphon, the gear - wheel, the pump, the water clock and the steam engine.
2. His book on mechanics translated into Arabic, was carefully studied by mechanics and describes five simple ways by which an unusually heavy weight may be lifted and moved with minimum effort. These five principles form the basis of all the machinery in the world today and, though described in detail by Hero their practical application to machinery did not come about for more than a thousand years. They are: the lever, the wheel and axle, the pulley, the wedge, the screw.
3. While it is true that the invention of the screw is attributed to Archimedes and the wedge and the lever were known long before Hero`s time, he was the man, who showed for the first time that all machinery is based on these five principles, and how to apply these principles to machinery - such as it was in those early times. Neither he nor anyone else of his time realized the importance of these inventions. Hero`s book on pneumatics, which was translated into Italian in 1549 and later into English, described more than seventy totally useless inventions, most of which embody important basic principles.
4. Their main function was to entertain. The siphon, that is essential to modern plumbing and sanitation, hero saw as a sort of toy. Nineteen centuries later Robert Fulton would employ the power of steam for locomotion, but Hero used it to make a hissing sound of a rattlesnake. He invented the pump, so vital to our civili-

zation, but he used it only as a toy. Hero applied it for the automatic pumping of an organ where the air supplied by a wheel turning in the wind. The importance of pumps in industry was not realized until the middle of the sixteenth century, sixteen hundred years after the death of the inventor. Among his other inventions we find a slot machine placed in the temple for different purposes and some other inventions of this kind. It is doubtful whether any other inventors in history applied so many world-shaking ideas to what would appear to us as entertainments. But all this was in keeping with Greek reverence for philosophy and scientific theory and indifference to practical application.

5. Прочтите абзац 4, выберите утверждение, соответствующее содержанию абзаца.

Neither Hero nor his contemporaries realized the importance of his inventions

- because all the inventions could be used only as toys.
- because all the inventions could not find any practical application at that time.
- Because of the prevailing reverence of the Greeks for philosophy and scientific theory and their complete indifference to practical applications.

Вариант 3

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

- a)
- 1) No man needs a vacation so much as the man who has just had one.
 - 2) A man is not old as long as he is seeking something.
- b)
- 1) The world's shortest letters were exchanged between Victor Hugo and his publisher. The author was on holiday and wanted to know how his latest book was selling.
 - 2) He wrote "?" – the reply was "!"
 - 3) Houses are built to live in and not to look on.

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

- 1) Explained again, the rule became quite clear to all present.
- 2) While working on his report the chief engineer had to read a lot of books on the subject.
- 3) The clause proposed by the buyers was objected to by the sellers.
- 4) The prices for metal on the London Metal Exchange were influenced by the growing demand.

3. Перепишите следующие предложения, подчеркните в каждом из них модальный глагол или его эквиваленты. Переведите предложения на русский язык.

- 1) We can't all be heroes because someone has to sit on the curb and clap as they go by.
- 2) This house can't have been built in the 19th century; it looks quite modern.
- 3) He may have written the letter, but the signature is certainly not his.
- 4) The guests intending to leave the hotel should notify the management before noon on the day of their departure.

4. Прочитайте и устно переведите абзацы 1-4. Перепишите и письменно переведите 1-3-й абзацы.

The Telephone

1. Alexander Graham Bell never planned to be an inventor. He wanted to be a musician or a teacher of deaf people. The subjects that he studied in school included music art, literature, Latin and Greek. They did not include German, which most scientific and technical writers used in their books. Alexander's mother was a painter and a musician. His father was a well-known teacher. He developed a system that he called "Visible Speech", which he used to teach deaf people to speak. When Alexander was a young boy he and his two brothers helped their father give demonstrations of the system for doctors and teachers.
2. In 1863, when Alexander was only sixteen, he became a teacher in a boy's school in Scotland. He liked teaching there, he read all the books about sound that he could find, and started to work on some of his own experiments. Reading scientific books wasn't easy for him, but he worked very hard, and he learned a lot about the laws of sound. He became interested in telegraph, and he tried to find a way to send musical sounds through electric wires. These experiments were not very successful. Then Alexander was offered a job at the School for the Deaf in Boston, Massachusetts. He was so successful that he was able to open his own school when he was only twenty-five.
3. About this time Alexander became interested in finding way to send the human voice through an electric wire. He found an assistant, Tom Watson, who worked in an electrical shop and knew a lot about building electric machines that people could use to talk to one another over long distances. After 2 years, the two young men were becoming discouraged. Then, one day, when they were working on a new transmitter, Alexander spilled some acid on himself. Tom Watson, who was alone in another room, heard a voice. The voice was coming through a wire to a receiver on the table! The voice was Alexander Graham Bell's! It was saying "Come here, Mr. Watson! I want you!" The spilled acid was forgotten when Tom and Alexander realized that their talking machine worked.

4. The first permanent telephone line was built in Germany in 1877. And in 1878, the first telephone exchange was established in New Jersey. By 1915 a coast-to-coast telephone line was opened in the United States – 5440 kilometers from New York to San Francisco. Alexander Graham Bell was invited to open the new line, and he asked his old friend, Tom Watson, to help. On the important day, January 25, 1915 Mr. Watson was in San Francisco and Mr. Bell was in New York City. Everyone expected to hear a serious, scientific speech. The words that Mr. Bell chose to say were: "Come here, Mr. Watson! I want you!"

I. Прочтите абзац 4, выберите выражение, соответствующее содержанию абзаца.

In 1915 Bell was invited to open

- the first telephone exchange in New York.
- the new coast- to- coast line in the United States.
- the first telephone exchange in New York.

Вариант 4

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

- a)
- 1) When Bill came home from the college after he had passed his exams, he felt very happy.
 - 2) One day I happened to get talking to a woman on a train and she turned out to be a cousin of my friend's.
- b)
- 1) Ironically, in 1875 Egypt's controlling shares in the Suez Canal were bought by England, who for years before the canal was built, had done everything possible to thwart the project; the English had been fearful then that the waterway would give the French, who built it, vast power in the Mideast, an area which England had already staked out as her own colonial preserve.
 - 2) The sellers stated in their offer that orders were executed within six months.

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

- 1) They went home quickly, protecting themselves from the rain by walking under the trees.
- 2) The door bolted on the inside could not be opened.
- 3) The broken arm was examined by the doctor.
- 4) The tree struck by lightning was all black and lifeless.

3. Перепишите следующие предложения, подчеркните в каждом из них модальный глагол или его эквиваленты. Переведите предложения на русский язык.

- 1) If we buy this house and then have to move somewhere else, how easy will it be to sell it again?
- 2) One can endure sorrow alone, but it takes two to be glad.
- 3) You should be always nice to people on your way up because you'll meet them on your way down.
- 4) You may get into trouble if you try to cover up your mistake.

4. Прочитайте и устно переведите абзацы 1-4 текста. Перепишите и письменно переведите 1-3-й абзацы.

The Triumph of Human Spirit

1. The Brooklyn Bridge was built in the year 1883. It is still one of the most popular places of interest in New York. The plan for the Brooklyn Bridge was made by a man named John Roebling. This was in the year 1867. Roebling was a German. He had come to the United States to live when he was twenty-five years old. In 1867 Roebling was already quite famous. Years before he had invented the steel cable. Using this steel cable he built several bridges, one at Niagara Falls and a second across the Monogahela River at Pittsburgh. He was sure he could build this new bridge. It was decided to give Roebling a chance. A company was organized. Roebling was head engineer. He began to work making the plans for the bridge. He sent his son Washington to Europe to study some new bridges there. Some experiments had been made with working in a large box under water.
2. And then the accident happened. Roebling was working near the river. A boat struck the dock on which he was standing. Two weeks later he died. Before he died he asked that his son Washington would continue his work. W. Roebling began to work with the same interest and energy as his father. The bridge was begun. There were many problems. According to the plans, there were to be two large towers. One of these towers was to be on the Brooklyn side of the river and the other was to be on the Manhattan side. From the towers hung a system of steel cables. These steel cables were to hold the bridge. Today engineers know how to do these things. They have had much experience. They have special machines. But at that time no one knew exactly how to do this work. The Brooklyn Bridge was the first bridge of its kind in the world. They used the new box that Washington Roebling had studied in Europe. The box was made of wood and was about the size of a house. Air was forced into the box and the water was forced out of it. It was very dangerous.

No one understood the problems of this kind of work. Men became sick. There were many accidents. Roebling himself worked with the men in the box. He tried to encourage the men.

3. One day a worker went down into the box. He felt perfectly well. Within half an hour he began to feel strong pains. Five minutes later he was dead. The same thing happened to other men. One day Roebling himself had a similar attack. He could not talk. He could not hear. He became paralyzed. After a week or two he felt better. He went back again to work in the box. He had a second attack, more serious than the first. He could not work again. In fact he was unable to work again during the rest of his life. He remained a cripple. Yet the work had to be continued. And Washington Roebling continued to direct the construction of the bridge. His home was near the bridge. He used a telescope. He watched the work every day. His wife helped him. Each day she went to the bridge. She carried her husband's orders to the men. She worked with the men. At night she returned to her husband. She told him about the work of the day. In this way, year after year the work continued.
4. In 1876 the first cable was placed from one tower to the other. In 1883 about fifteen years after it was first begun, the bridge was officially opened. Many important people, including the President of the US, took part in the ceremony. Washington Roebling watched the ceremony through his telescope. The bridge was one of the wonders of the nineteenth century. It is still today. There is more traffic on it today than ever before. The bridge remains very strong. It also remains a monument to the two men who built it, John Roebling and his son Washington.

5. Прочтите абзац 4, выберите утверждение, соответствующее содержанию абзаца.

Washington Roebling

- did not live to see the ceremony of the opening of the bridge.
- was present at the ceremony together with many important people.
- could see the ceremony by watching it through his telescope.

Вариант 5

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) There is nothing more tragic in life than the utter impossibility of changing what you have done.
 - 2) When he reached his destination he sent a telegram home to say that he had arrived safely.
- b)
- 1) "If I have seen farther, it is by standing on the shoulders of giants", the great mathematicians and physicist Sir Isaac Newton observed four centuries ago. He had an original and fertile mind but he built on foundations laid by others. Innovators always stand on the shoulders of others. That's the way progress is made. Our company is no exception, we've built on great work coming out of universities and from other companies.
 - 2) There are many examples of school dropouts who go on to become truly extraordinary businessmen. Take, for example, Mr. Sanders of Kentucky Fried Chickens. He has been quoted as saying, "When I got to the point in school where they said that Y equals the unknown quantity X, I decided I had learned as much as I could, and decided I needed to quit school and go to work!"

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

- 1) The actions, magnified in retelling, made the man a celebrity all over Europe.
- 2) Galileo may have gone blind as a result of looking at the sun through an unfiltered telescope.
- 3) You must be tired after walking so far.
- 4) We are looking forward to hearing from you.

3. Перепишите следующие предложения, подчеркните в каждом из них модальный глагол или его эквиваленты. Переведите предложения на русский язык.

- 1) Good health comes from moderation. You shouldn't drink so much coffee.
- 2) The doctor's bill ought to have been paid yesterday.
- 3) He was to have started work last week but he fell ill and was taken to hospital; that's why, the job was taken over by another man, and now he will have to look for another job.
- 4) My watch is fast, it cannot be relied on.

4. Прочтите текст и переведите устно абзацы 1-4, перепишите и переведите письменно абзацы 1-3.

JAMES WATT

1. James Watt was born in Greenock, Scotland, and was taught at home, later he went to Greenock Grammar School. His technical expertise seems to have been obtained from working in his father's workshop and from early in life he showed academic promise. His early formal training was as instrument maker in London and Glasgow. Watt combined the expertise of a scientist with that of a practical engineer, for later he was not only to improve the heat engine but also to devise new mechanisms.
2. Watt was interested in making experimental models of steam engines and this marks a historical milestone in engineering development, for they were the first experimental apparatus purposely constructed for engineering research. Watt's early interest in steam arose from his experience in repairing a model steam engine in 1764, and in 1765 he invented the separate steam condenser. In 1769 he took out a patent on the condenser in which steam came into direct contact with cold water; that was a milestone by which steam engineering reached its practical and usable form.
3. In 1784 he took out a patent for a reaction turbine at a time when continental engineers were only considering similar approaches. An improved centrifugal governor was to follow in 1788 and a design for a pressure gauge in 1790. The engine pressure indicator is also attributed to him. In the development of steam engine James Watt represents the perfecting of a sequence of stages beginning with the Newcomen engine and end-

ing with the parallel motion and sun/planet gearing. The latter is said to have been invented by W. Murdock but patented by Watt.

4. In the scientific field Watt's finest memorial, apart from steam engines, is his establishment of the unit of power – the rate of doing work. He coined the term horse power (hp); one horse being defined as equivalent to 33,000 ft lb/min. Watt was interested in the strength of materials and designed a screw press for chemically copying printed texts. Watt received many honors in recognition of his important works. He was a Fellow of the Royal Society of London and Edinburgh, and was a member of the Academy of Sciences in France. James Watt died in 1819 in Heathfield, after a life of incomparable technical value, a statue to Watt was placed in Westminster Abbey.

5. Прочтите абзац 4 и выберите утверждение, соответствующее содержанию абзаца.

In the scientific field Watt's best achievement was

- his work on the strength of materials.
- the screw press designed for copying printed texts.
- his establishment of the unit of power for measuring the work performed.

КОНТРОЛЬНОЕ ЗАДАНИЕ №3

Чтобы правильно выполнить задание № 3, необходимо усвоить следующие разделы курса английского языка по рекомендованному учебнику:

- 1) Грамматические функции и значение слов that, one, it.
- 2) Пассивный залог (The Passive Voice) видовременных форм Indefinite, Continuous, Perfect.
- 3) Функции глаголов to be, to have, to do.
- 4) Простые неличные формы глагола. Инфинитив в функции:
 - а) подлежащего
 - б) составной части сказуемого
 - в) определения
 - г) обстоятельства цели.
- 5) Бессоюзное подчинение в определительных и дополнительных придаточных предложениях.

Используйте образцы выполнения упражнений.

Образец выполнения 1 (к упр.1)

The main question has already been discussed. Главный вопрос уже обсудили.

Present Perfect Passive

His scientific work is much spoken about О его научной работе много говорят.

Present Indefinite Passive

Образец выполнения 2 (к упр.2)

- | | |
|--|---|
| 1. It is necessary to use the latest means of control in industry | Необходимо использовать в промышленности новейшие средства контроля. |
| 2. One should agree that that experiment was of great importance for our research. | Следует согласиться, что тот эксперимент имел большое значение для нашего исследования. |
| 3. It is the hydrogen that will be the main source of energy in the car of the future. | Именно водород будет основным источником энергии в автомобиле будущего. |

Образец выполнения 3 (к упр.4)

- | | |
|---|---|
| 1. What is the name of the book you are reading? | Как называется книга, которую ты читаешь? |
| 2. The region we must explore possesses great natural wealth. | Район, который мы должны исследовать обладает огромными природными богатствами. |

Вариант 1.

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

- 1) When much material had been looked through and some problems had been solved, the article was published.
- 2) Electric cars will be widely used in future.
- 3) Today plastics are being applied for car bodies.
- 4) This lecturer is listened to with great interest.

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

- 1) It is proved that light needs time to travel any distance.
- 2) One must take part in scientific work.
- 3) Specialists consider that in future city transport will reject gasoline.

III. Перепишите предложения и переведите их на русский язык, обращая внимание на разные значения глаголов *to be, to have, to do*.

- 1) You have to come to the language laboratory of the Institute to work at your pronunciation.
- 2) This material does not possess elastic properties.
- 3) Scientists had to create new materials for industry.
- 4) The exam was to start in the morning.

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

- 1) We know electricity produces heat.
- 2) The material the apparatus is made of is a good non-conductor of heat.

V. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива.

- 1) It is necessary for an engineer to know a foreign language.
- 2) The laboratory assistant was the last to leave the laboratory.
- 3) Our idea was to design a new device for automatic control.
- 4) To increase the productivity of labour one must use the methods we have just described.

VI. Прочтите и устно переведите с 1 по 7 абзацы текста. Перепишите и письменно переведите 3,4 и 6-ой абзацы.

Crystals

1. Till recently, crystallography was regarded as "the most dreamy, the most difficult, and the most useless of sciences". Today crystallography is one of the most important branches of natural science, rich in practical achievements, having deep philosophical content. It is closely related to mathematics.
2. Not long ago only X-rays were used for structural analysis. The latest development in the field of crystal structure analysis is the method of neutron diffraction which is coming into wide use.
3. Crystals offer a simple way for transforming one kind of energy into another, for instance, by using the action of light to obtain an electric effect, or to achieve optical effects by mechanical action. It is possible to illuminate a crystal with red light and make it emit green rays. In fact, in modern technology all the instruments that can emit energy are built around crystals.
4. Of special interest is research into the strength of crystals. All metals and alloys constitute a collection of variously placed tiny crystals. The more perfect the crystals, the higher the strength of the metal. This means that by special methods it is possible to obtain crystals of required strength.
5. Already now we know how to grow very thin crystals, which have a diameter of a few microns only and possess extraordinary high tensile strength (1200-1300 kilograms per square millimetre).

6. Now it is necessary to grow artificially not only the crystals that do not exist in nature, but those that do exist but are scarce. Rock crystal, for instance, which has a vast range of technical and optical applications is grown at factories in a quantity far larger than that obtained by mining.
7. Having received a few dozens of crystals from nature, technology is now producing something like a thousand different varieties. The future of crystals and their application in industry is full of great promise.

Вариант 2

I. Перепишите следующие предложения, определите в каждом из них видо-временную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

- 1) When much had been done in the study of ecology by our institute it became an important scientific centre.
- 2) Such crystals are grown in special laboratories.
- 3) The research of planets will be developed with the help of cosmic apparatus.
- 4) This material is unaffected by solar radiation.

II. 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 the conclusion that the electromagnetic field is influenced by the gravitation field.
- 3) This metro station was opened last year, and that one will be put into operation in two years.

III. Перепишите предложения и переведите их на русский язык, обращая внимание на разные значения глаголов *to be, to have, to do*.

- 1) Man had to learn to obtain electric power directly from the Sun.
- 2) At present most of the industrial enterprises have their own electric power stations.
- 3) Specialists do not use solar cells in industry as they are too expensive.
- 4) The engineers are to study the problem of using cosmic rays.

IV. Перепишите предложения и переведите их на русский язык, обращая внимание на бессоюзное подчинение.

- 1) The methods we have just described are very effective.
- 2) The instruments our plant produces help to automate production processes.

V. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на функцию инфинитива.

- 1) The teacher told her students to learn the poem by heart.
- 2) Steam engines were the first to be tried in aeroplanes but they were too heavy to be of any real use.
- 3) To translate a sentence is to discover its meaning.
- 4) In order to break this glass a great amount of force must be applied.

VI. Прочтите и устно переведите с 1-го по 5-ый абзацы текста. Перепишите и письменно переведите 2, 3 и 5-ый абзацы.

PLASTICS

1. The term plastics is derived from the Greek "plasticos", meaning "capable of being moulded" and covers a wide variety of artificial organic resins, which alone or in combination with other materials, can be transformed by either heat or pressure, or both, into products with special characteristics and uses. The list of uses of plastics we now hear about is endless, the possibilities are unlimited.
2. The first synthetic plastic dates back to 1869. It soon became famous in a variety of products including spectacle frames, photographic film, buttons and combs. Its uses were limited, however, by its brittleness and inflammability. It was not until 1909 that a plastic resin of more extended commercial significance was developed. It was an organic compound which, under heat and pressure, formed a strong, rigid material with excellent chemical resistance and dielectric (nonconducting) properties. It was soon found suitable for a wide variety of applications including radio and telephone parts and housings, camera cases, handles and knobs of all kinds.
3. In a lightweight plastic bicycle which its creators advertise as: "the world's first and only plastic bicycle" virtually all parts are made of plastics. The bicycle weighs only 16 pounds instead of the usual 25 to 35

pounds. In addition, the bicycle never needs to be greased or oiled, will not rust and there is no paint which chips off.

4. We know there is nothing more efficient than a sponge for soaking up household spills. If it works in the home, it can be adapted to cleaning up the surface of the ocean.
5. Foam chips are cast upon the waters to soak up the oil spill. The system is reported to collect 50,000 gal/hr. The designers claim the chips become saturated with oil within seconds of contact and are so durable that they can be reused as many as 50 times.

Вариант 3

I. Перепишите следующие предложения, определите в каждом из них видо-временную форму и залог глагола-сказуемого. Переведите предложения на русский язык.

- 1) The radar has been used for the automatic control of ground transport.
- 2) Today plastics are being widely used instead of metals.
- 3) The construction of the dam has been completed this month.
- 4) The alloys were experimented upon in our lab.

II. Переведите на русский язык следующие предложения, обращая внимание на разные значения слов *it, that, one*.

- 1) It is the number of electrons within the atom that determines the properties of a substance.
- 2) The territory of Moscow is larger than that of London.
- 3) In London one must get used to the left-side traffic.

III. Перепишите предложения и переведите их на русский язык, обращая внимание на разные значения глаголов *to be, to have, to do*.

- 1) Some substances do not conduct heat.
- 2) Our plant is to increase the output of consumer goods.
- 3) Soon our industry will have new and cheap sources of energy.
- 4) These computers will have to perform millions of operations per second.

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

- 1) The hostel our students live in is situated not far from the metro station.
- 2) I think he has made a mistake in his calculations.

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

- 1) They promised to supply us with the necessary equipment.
- 2) The purpose of this book is to describe certain properties of metals.
- 3) The experiment to be carried out is of great importance for our research.
- 4) To convert chemical energy into electrical energy we must use an electrical cell.

VI. Прочтите и устно переведите с 1 по 5 абзацы текста. Перепишите и письменно переведите 2, 3, 4-ый абзацы.

Sun-Driven Engine

1. It is common knowledge that certain metals and their alloys are attracted by a magnet. After heating, this property vanishes, it is restored after cooling down. A new magneto-heat engine¹ works on this principle. This invention relates to devices which transform thermal power, for instance, the power of the sun rays, into a mechanical power of rotation.
2. We know solar power is inexhaustible² and its use does not harm the environment. That's why such importance is attached to the devices which make it possible to apply the idea of direct use of solar power, transforming it into mechanical forms of power. The development of an engine directly driven by a heat source such as solar power, makes it possible to simplify and make power generation considerably cheaper, in comparison to the existing thermal engines we use today.
3. The rotor of the new engine is made of an alloy that loses its magnetic properties already at 1000 °C. If the rotor is heated on one side, the cold side of the rotor will turn toward the magnet. Since heating continues, the rotor goes on rotating, too. Thus solar power can be used as a source of heat in this case. The magneto-heat engine can drive pumps in waterless districts, can also be widely used for watering greenery in cities and settlements.
4. By using thermomagnetic alloys it is possible to develop a lot of automatic devices, for example, solar clocks, thermometers, etc. Mention should be made that these devices can withstand extreme tempera-

tures. To organize the production of the necessary alloys is simple as there is no need for rare materials or complex technology.

- 1) -magneto-heat engine - магнитно-тепловой двигатель
- 2) -inexhaustible - неисчерпаемый, неистощимый

Вариант 4

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

- 1) The automatic equipment is being installed in our shop.
- 2) Radioactive isotopes have been made in nuclear reactor.
- 3) The construction of this house will be completed in a month.
- 4) The engineer was asked about the new technology used at a plant.

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

- 1) The successes in chemistry made it possible to obtain a lot of new materials.
- 2) One must apply the material that can be machined easily.
- 3) It is the energy of falling water that is used to drive turbines.

3. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения глаголов *to be, to have, to do*.

- 1) The operators dealing with radioisotopes must have protective suits.
- 2) The engineers are to study the problem of using solar energy.
- 3) The chemical industry is one of the leading branches of our national economy.
- 4) This model of machine has acquired good reputation abroad.

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

- 1) I think the drawing will be ready tomorrow.
- 2) Every substance a man comes in contact with consists of molecules.

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

- 1) To design new buildings is the work of an architect.
- 2) To measure volumes we must know the dimensions of a body.
- 3) Our plant was the first to install the automatic equipment.
- 4) Architects have built houses to be heated by solar radiation.

6. Перепишите и устно переведите на русский язык с 1-го по 2-ой абзацы текста. Перепишите и письменно переведите 2-ой абзац.

Special Structures

1. Power stations, factories, airports - these are some of the special buildings that every modern community needs. And so very special are structures of this type - so specific in their function - that we can generally recognize their purpose from their design. This is true, for example, of television masts or of the huge concrete water-cooling towers that are an essential feature of many modern power stations.
2. If we examine any building that needs large, uninterrupted areas of floor space - for instance an aircraft hanger, exhibition hall, traffic terminal, or factory - we can see that its very construction must depend on the intelligent use of steel and concrete. These days, buildings with immense spans are commonplace; concrete and steel have made them so. This is only one instance of the way in which many of today's basic structures have been made possible through new developments in building materials and methods. New technological developments (and, of course, earlier scientific research) have also helped improve the services provided by recently constructed concert halls, stadiums, theatres, shops and garages. To take one obvious example: studies in acoustics have helped architects to design concert halls whose shape, assisted by skilfully positioned sound-absorbing and sound-reflecting materials makes for nearly perfect hearing in all parts of the hall. The view of the theatre stage is far better than it is used to be, too, because balconies need no longer be propped up by view-obstructing supports. There are no visible supports at all if the cantilever style of construction is adopted. And air conditioning, good lighting and better-than-adequate sani-

tation are amenities (all developed in our own time) that most modern community buildings are sure to incorporate.

Вариант 5

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

- 1) 16-storey houses with all modern conveniences are being built in this part of the city.
- 2) The sputniks are used for the research of magnetic fields and cosmic rays.
- 3) The properties of materials are affected by solar-radiation.
- 4) Scientific and engineering progress opens up wide prospects before man.

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 the possibility of living and working in space.
- 2) The peoples know that their joint efforts can secure peace in the whole world.
- 3) We had to find new methods of investigation because the old ones were unsatisfactory.

3. Перепишите следующие предложения и переведите их на русский язык, обращая внимание на разные значения глаголов *to be, to have, to do*.

- 1) A programme for the construction of new types of spaceships is to be carried out this year.
- 2) Those apparatus do not always give accurate readings.
- 3) We had to change the design of this machine.
- 4) The speed of electrons is almost the same as that of light.

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

- 1) We know radio and radar systems play a very important role at any airport.
- 2) The information science gets about other galaxies comes through radiotelescopes.

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

- 1) In order to make interplanetary flights in the future it is necessary to know factors affecting the human organism.
- 2) The main purpose of the computers is to solve complex problems quickly.
- 3) Our plant produces automatic and semiautomatic machine-tools to be installed in new large shops.

6. Прочтите и устно переведите на русский язык с1-го по 4-ый абзацы текста. Перепишите и письменно переведите на русский язык 1, 2, 4-ый абзацы.

A NEW METAL AND NEW POSSIBILITIES

1. For some time past engineers have been trying to make titanium practicable. It now seems they have succeeded in making production possible on a more or less large scale. Titanium is a new metal, one of those sensational new finds, like penicilline, nylon, plastic etc., which have revolutionized our lives since the war. Titanium is a material possessing such exceptional properties, that we may rightly speak of a wonderful metal. Although being a metal, titanium can be applied in many more cases than only in the manufacture of the machine parts and the like for which metals are commonly used. It is claimed to be able to increase the whiteness of white paint, to improve certain kinds of cosmetics, to make window panels transparent, to strengthen silk and to serve hundreds of other purposes.
2. Still it will probably be as a metal that titanium will enter upon its victorious way into the history of mankind.
3. In the first place this metal is much lighter than iron (although it is about 67% heavier than aluminium, it is more abundantly available) and yet of a very considerable strength. Furthermore it will resist the corrosive action of sea-water. By adopting titanium it will be possible to provide ships hulls with a non-corroding covering with greatly reduced maintenance cost as a result.

4. Many problems in the construction of jet engines will be more readily solved, and bridges, steel window frames, lifting cranes and other machinery will be given a much longer life. That in all these cases a very considerable saving in weight will be effected, is evident.

КОНТРОЛЬНОЕ ЗАДАНИЕ №4

Чтобы правильно выполнить задание №4, необходимо усвоить следующие разделы курса английского языка по рекомендованному учебнику.

- 1) Сложные формы инфинитива (Passive Infinitive, Perfect Infinitive). Обороты равнозначные придаточным предложениям: объектный инфинитивный оборот, субъектный инфинитивный оборот.
- 2) Причастия (participle 1, 2). Независимый (самостоятельный) причастный оборот.
- 3) Условные предложения.

Используйте образцы выполнения упражнений.

Образец выполнения №1 (к упр. 1)

- | | |
|--|---|
| 1. The expedition is reported to have reached the Noth Pole. | Сообщают, что экспедиция достигла Северного полюса |
| 2. We want the new car to be produced by February | Мы хотим, чтобы новый автомобиль был выпущен к февралю. |
| 3. The device to be bought must be checked beforehand | Прибор, который нужно купить, следует предварительно проверить. |

Образец выполнения №2 (к упр. 2)

- | | |
|---|--|
| 1. The results received were of great importance for further work. | Полученные результаты имели большое значение для дальнейшей работы. |
| 2. Having obtained the necessary results they stopped their experiermental work. | Получив необходимые результаты, они прекратили экспериментальную работу. |
| 3. New technological processes having been developed, new types of equipment have been installed in the shop. | Когда были разработаны новые технологические процессы, в цехе было установлено новое оборудование. |

Образец выполнения № 3 (к упр. 3)

- | | |
|---|--|
| If the installation is put into operation in time, the economic effect will be greater. | Если установка будет запущена вовремя, экономический эффект возрастет. |
| If the system had been perfected, we should have applied it for new calculations. | Если бы система была усовершенствована, мы бы применили её для новых расчетов. |

Вариант 1

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

- 1) New kinds of computers are expected to perform calculations with great precision.
- 2) For a long time, special paper impregnated with paraffin was considered to be the main non-conductor used for manufacturing small capacitors (конденсатор).
- 3) The metal to be poured into a mold for casting may contract or expand on solidifying.

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

- 1) Having used a laser beam, scientists obtained accurate calculations of Yupiter's temperature.
- 2) Being obtained in the laboratory the new substance had some valuable properties.
- 3) The engineers of our institute having developed a new type of semiconductor laser, it was tested at several plants.

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

- 1) If the computers electronic memory had recorded all the operator's commands, the picture of deviations from the required parameters would have been produced.
- 2) If biological experiments are continued, the problem of developing the technology for growing plants in space conditions will be solved.
- 3) It would be impossible to protect metal from corrosion without the films.

4. Прочтите и письменно переведите с 1-го по 5-ый абзацы текста.

CORROSION

1. During a year about 200 million tons of metal objects are considered to be destroyed by corrosion. Considering that about 600 million tons of metal a year are produced in the world, it is easy to understand the losses of object without which our life could not be imagined.
2. The situation is very serious, because not only metal is destroyed but also a great amount of articles, instruments, and tools whose cost exceeds many times the cost of the metal used for their manufacture.
3. Combatting against the corrosion of metal has now become a key problem in all industrial countries. The scientific and technical achievements in the field of raising the corrosion resistance of construction materials are the basis of technical progress in different branches of industry, an indicator of the country's economic potential.
4. A large amount of anti-corrosion work is being carried out in our country. The results are evident: the inhibitors, varnishes, paint covers made in Russia are being well known throughout the world. Gaspipelines, metal structures, the bodies of atomic reactors and ships, etc. have been reliably protected against corrosion.
5. Our country also exports special equipment and some kinds of technology designed to weaken corrosion. Antycorrosion varnishes, paints, insulating materials and equipment are purchased abroad.

Пояснения к тексту:

- 1) many times - во много раз
- 2) combat against - бороться против
- 3) inhibitors - ингибиторы

Вариант 2

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

- 1) Many scientists believe the Tunguska explosion to be caused by a meteorite.
- 2) Samples of semiconductor with improved properties are reported to be obtained on a new installation.
- 3) Scientific discoveries to be practically applied in industry and agriculture are paid special attention to.

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

- 1) Having discovered rich deposits of iron ore the people began to construct an iron and steel works in this district.
- 2) Light and food industries have been modernised, much being done to expand the production of consumer goods.
- 3) An experiment demonstrating the existence of an ultraviolet and infrared spectrum must be performed.

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

- 1) If liquids expand upon freezing, an increase of pressure lowers the freezing point.
- 2) If the metal had been heated slowly, the first changes in its appearance would have occurred at the temperature of 1000 K.
- 3) It would be impossible to determine the properties of these materials without intensive studies in our research laboratory.

4. Прочтите и устно переведите с 1-го по 5-ый абзацы текста. Перепишите и письменно переведите 1, 2, 3, 4-ый абзацы.

CREATIVE FIRE

1. All the industries today are in need of new methods of joining metals together. And not only metals but also joining metals with glass, plastic and many other materials. The work done by the Paton Institute of Electric Welding is considered to be the solution of these problems. For example, how to weld a 1000 km long pipeline? The institute has developed a machine for welding pipelines. The welding section in each pipe exceeds 100 000 sq.mm. It would take 6-8 hours to perform this work by hand. The machine does it in two minutes.
2. The machine was tested in production condition, the results being excellent.
3. It would seem strange to compare the steel constructions that produce oil in the Caspian Sea with a space station orbiting the Earth. What do they have in common? But they do - it is the need for making repairs, and repairs mean cutting metal and doing welding work.
4. The rapid development of the oil and other mineral resources of the ocean made the problem of underwater welding especially up-to-date. The equipment developed by Kiev's scientists is very effective. New semiautomatic machines for underwater welding increased divers productivity by 25-30 times.
5. And what about welding in outer space? The scientists understood that welding had to be done in conditions of weightlessness, in nearly complete vacuum and within a broad range of temperatures from 150 °C below to 130 °C above zero. The equipment, of course, must be reliable and safe. And the institute has developed such equipment.

Пояснения к тексту:

- 1) Paton Institute of Electric Welding – Институт электросварки им.Патона (в Киеве)
- 2) but they do – а они всё-таки имеют(ся)
- 3) divers – ныряльщики

Вариант 3

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

- 1) The sun and stars are proved to be able to produce great quantities of energy by means of certain nuclear reactions.
- 2) For the experiment we need several electrical devices to be connected in series.
- 3) Lasers are known to have found application in medicine.

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

- 1) Measurements of solar radiations reaching the Earth each day make it possible to calculate the surface temperature of the sun.
- 2) Having built a new automobile plant, we increased the output of cars and buses.
- 3) Knowledge being the most valuable wealth of our times, the information theory became of great importance for the national economy.

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

- 1) If the gathered data had been presented in time, the results of the experiments would have been different.
- 2) If you had answered six questions in the competition, you would have won the first prize.
- 3) It would be impossible to carry on a careful study of the process without the new device.

4. Прочтите и устно переведите с 1-го по 5-ый абзацы текста. Перепишите и письменно переведите 1, 2, 3, 4, 5-ый абзацы.

SOLAR ENERGY

1. Most of the energy that we use on the Earth even in some converted form such as coal and oil, stems from the sun. Indeed, oil, coal, natural gas are fuels that release energy received from the Sun millions years ago. When we use wood in fire it is necessary to remember that the sun supplies the energy for the growth of trees.
2. Hydroelectric energy is known to be electricity produced from the energy of falling water. This is actually stored solar energy, the water being lifted from the sea in the course of the hydrological cycle which is driven by the Sun. Hydroelectric energy has several advantages over other ways of producing electricity. No fuel is required, since the energy comes from the Sun.
3. The Sun is also important to use as a laboratory in which we can study. Not gases in a magnetic field. The knowledge we are gathering from the studies of the solar gas enables us to control fusion processes here on the Earth. If we could built magnetic «bottles» to contain hydrogen under going fusion at temperatures of degrees and would use the hydrogen in the ocean we should obtain unexhausted sources of energy for millions of years.
4. It is clear today that the supply of coal, oil and natural gas will soon become inadequate for our needs. It is natural that scientists began their search for new sources of energy from the Sun.
5. There are devices that give off an electrical signal when struck by sunlight. The device employed for converting solar energy into useful power is the solar cell. In the solar cell the function consists of two different kinds of semiconductors. The cell is energized not by heat but by light. But solar cells are still expensive to use for general commercial purposes. They proved to be an ideal source of power for artificial satellites.
6. There is now considerable research centering on finding ways of converting solar radiation into heat and electricity. Man has learned to obtain electric power directly from the Sun at present. Architects have built houses to be heated by solar radiation due to applying suitable designed roofs and using suitable construction materials, the latter tend to retain heat obtained from the Sun. Under suitable conditions solar radiation can raise the temperature of the air to 300 F.

Пояснения к тексту:

- 1) to stem from – происходить

- 2) in the course – в течение
- 3) fusion process – процесс синтеза

Вариант 4

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

- 1) The crew is reported to have carried out a great deal of scientific experiments.
- 2) We know the wave theory of light to be first proposed by the English physicist Robert Hooke in 1665.
- 3) Nearly all refrigerators to be used at home are based upon the principle that the rapid evaporation of liquid or the expansion of a gas produce cooling.

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

- 1) The report concerning the latest achievements in economic was made by a professor of our Institute.
- 2) About 100 years ago, a French scientist Pierre Curie subjecting certain crystalline materials to pressure, observed that they produced an electric charge.
- 3) The computer's electronic memory recording all the operator's commands, the picture of deviations was produced.

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

- 1) If this new device is applied, the process of production will be simplified.
- 2) If the service life device had been prolonged, the economic effect would have been increased many times.
- 3) It would be impossible to ensure the full supply of energy without atomic power stations.

4. Прочтите и устно переведите с 1-го по 5-ый абзацы текста. Перепишите и письменно переведите 1, 2, 3, 4, 5-ый абзацы.

ELECTRONICS - SCIENCE OF THE FUTURE

1. In our country much attention is given to electronics, which is playing a major part in economics development. Scientists and engineers have many achievements to their credit in this field. One outstanding example in space.
2. Electronics, however, has not only helped us to reach cosmic expanses but has given us an insight into the world of the most minute organisms - viruses. For instance, a modern electronic microscope shows the processes taking place in ultra-microscopic formations of a living cell. Now it is possible to distinguish details being a millionth of a millimetre away from each other.
3. Electronics is in many ways helping us to solve the problem of the peaceful uses of atomic energy and to study atomic nuclei and elementary particles. We know electronics to have found broad application in industry as a means of automation, control, and inspection, and as a direct means of fulfilling such operations as melting, cutting of superhard materials, welding, etc.
4. The electron beam acting like a micro-miniature instrument can cut, bore, mill or plane any material, including tungsten and diamond, with any accuracy to within microns. Quantum generators can focus light in extremely narrow beams, their angular width being in the order of a thousandth a degree. These instruments are called lasers and they can be used for cutting, drilling, welding and other treatment of materials.
5. The lasers are also used in studying the properties of various substances, in radio-engineering, medicine, biology, etc. Scientists believe that such a beam of light will make it possible to establish contact with the stellar systems closest to our planet.

Пояснения к тексту:

- 1) to play a part – играть роль
- 2) to their credit – на своём счету
- 3) means – средство
- 4) in the order – порядка (т.е. около ...)
- 5) closest – ближайший

Вариант 5

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

- 1) The properties of the new material are known to be determined next month.
- 2) We expect the scientific and technological progress to increase the intensification of production.
- 3) Plastic uses in transport are supported to have no special reinforcement.
- 4) The plant is expected to manufacture new trucks next year.

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

- 1) Working with machines, sharp tools motors one must always be careful.
- 2) The stream of electrons moving along the conductor is called electric current.
- 3) Technique having reached a high stage of development, new methods of work became possible.

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

- 1) If you had translated the article, you could have used valuable data in your work.
- 2) If the quality of the equipment were higher, the results of the experiment would be more accurate.
- 3) It would be impossible to explain chemical phenomena without using the laws of physics.

4. Прочтите и устно переведите с 1-го по 5-ый абзацы текста. Перепишите и письменно переведите 1, 2, 3, 4-ый абзацы.

PLASTICS AS METAL REPLACEMENTS

1. Today plastics are referred to as materials of great importance, for no other group of materials is able to offer such a unique combination of properties.
2. By alloying, modifying as well as by changing the structure of polymers, chemists and technologists are able to produce different kinds of plastics.
3. Metal replacement by plastics is often due to the economic factors only. The use of plastics enables the manufactures to eliminate many expensive machining and finishing processes. Moreover plastics parts can be mass produced at a lower cost compared with metal parts.
4. Although plastics do not possess the high strength of steel they are suitable for many purposes. Plastics can be reinforced by incorporating fibrous materials such as glass fiber, nylon and, at last, pure carbon fibers. The carbon plastics are known to open up vast new possibilities in the engineering field. Already some of the latest aircraft engines are using blades made of such plastics. These plastics are able to withstand much higher temperatures than metals. There exist plastics, which have high mechanical strength and are able to withstand the extremes of pressures. It gives them a great advantage over metals.
5. Mention should be made that plastics are widely used in chemical industry, all plastics possessing good resistance to chemicals. The great advantage offered by plastics over iron is that they are highly resistant to corrosion and therefore ensure a much longer life.
6. Because of their combination of mechanical and dielectrical properties found their first major industrial application in the electrical industry. A great number of plastics used in the electronic fields find applications where a good insulation property is an essential quality, e.g. wire covering, diodes, transistors, etc. An increasing number of electronic auxiliaries previously made of metal is now being fabricated of plastics. These include many kinds of mechanical components required for computers. Generally speaking in every branch of the industry from spaceships to domestic appliances plastics are playing a vitally important role.

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**МЕТОДИЧЕСКИЕ УКАЗАНИЯ
ПО АНГЛИЙСКОМУ ЯЗЫКУ**

*для студентов заочной формы обучения
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