Белорусский национальный технический университет

Факультет энергетического строительства
Кафедра английского языка № 2

СОГЛАСОВАНО

Заведующий кафедрой
_____Н.П. Мартысюк

____ _____ 2017 г.

СОГЛАСОВАНО

И.о.декана факультета
_____О.Н. Кобяк

_____ _____ 2017 г.

УЧЕБНО-МЕТОДИЧЕСКИЙ КОМПЛЕКС ПО УЧЕБНОЙ ДИСЦИПЛИНЕ

Иностранный язык (английский)

для студентов специальности
1-02 06 02-01 «Технология. Информатика»

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Рассмотрено и утверждено
на заседании совета факультета энергетического строительства
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протокол № 4

Перечень материалов

В УМК включены следующие материалы: учебно-методическое пособие «Практическая грамматика английского языка» Т.В. Колосова, Л.А. Крюкова; учебно-методическое пособие «Учебная деятельность студента в техническом вузе» Е.Г. Богданович, О.Н. Барлюгова, Т.В. Колосова; пособие по английскому языку для педагогов-инженеров «Challenges of Teaching. Обучение: вопросы и мотивы» Л.И. Борисевич, Н.Е. Денисенок; учебное пособие «Английский язык. Основы компьютерной грамотности» В.А. Радовель, дополнительные учебные тексты для развития навыков перевода и реферирования, а также тематические тесты, промежуточные и итоговые лексико-грамматические тесты; предметно-тематическое содержание зачета и экзамена, список устных тем для собеседования, учебная программа по специальности 1-02 06 02-01 «Технология. Информатика» по дисциплине «Иностранный язык (английский)».

Пояснительная записка

Учебно-методический комплекс предназначен для реализации образовательной программы по дисциплине «Иностранный язык (английский)». Целью данного электронного учебно-методического комплекса является совершенствование иноязычной коммуникативной компетенции будущего специалиста в области информационных технологий. Разработанный ЭУМК направлен на решение следующих задач:

познавательных (знакомство с основными аспектами технической специальности посредством иностранного языка)

развивающих (совершенствование коммуникативных умений, формирование потребности к самостоятельной познавательной деятельности, систематизация знаний и умений)

воспитательных (осознание важности будущей специальности, формирование общечеловеческих, общенациональных и личностных ценностей, таких как: гуманистическое мировоззрение, уважение к другим культурам, патриотизм и нравственность)

*практических (*предполагающих овладение иноязычным общением в единстве всех его компетенций, функций и форм, что осуществляется посредством взаимосвязанного обучения всем видам речевой деятельности в рамках определенного программой предметно-тематического содержания, а также овладение технологиями языкового самообразования)

Особенностью структурирования и подачи учебного материала является то, что подача учебного материала осуществляется в соответствии с учебно-методической картой рабочей учебной программы по дисциплине, которая включена в комплект материалов ЭУМК.

Оформление и использование ЭУМК по дисциплине осуществляется в соответствии с требованиями СТП СМК БНТУ 6.3 – 02 – 2014.

Структура учебно-методического комплекса включает следующие разделы: теоретический, практический, контроля знаний и вспомогательный. Теоретический раздел ЭУМК включает в себя учебно-методическое пособие “Практическая грамматика английского языка”, которое содержит не только необходимый теоретический материал, но и большое количество тренировочных упражнений, способствующих прочному усвоению грамматического материала. Четкая структура предлагаемого пособия помогает студентам систематизировать знания и использовать их на разных этапах обучения при самостоятельной работе.

Практический раздел представлен учебно-методическим пособием «Учебная деятельность студента в техническом вузе» (Е.Г. Богданович, О.Н. Барлюгова, Т.В. Колосова), пособием по английскому языку для педагогов-инженеров «Challenges of Teaching. Обучение: вопросы и мотивы» (Л.И. Борисевич, Н.Е. Денисенок), учебным пособием «Английский язык. Основы компьютерной грамотности» (В.А. Радовель). Пособия содержат тексты из оригинальной литературы, учебные задания, способствующие усвоению и запоминанию специальных терминов по компьютерным технологиям; задания для развития навыков чтения, свертывания и развертывания информации при составлении аннотаций и рефератов на русском и английском языках. Представленный материал позволяет не только углубить свои знания в английском языке, но и овладеть основами компьютерной грамотности. Дополнительные учебные тексты предназначены для самостоятельной работы студентов для развития навыков перевода и реферирования.

Раздел контроля знаний ЭУМК содержит тесты промежуточного и итогового контроля, лексико-грамматический тест, а также предметно-тематическое содержание зачета и экзамена по дисциплине «Иностранный язык».

Рекомендации по организации работы с ЭУМК.

Учебно-методический комплекс по дисциплине «Иностранный язык (английский)» предназначен для студентов очной формы получения высшего образования, а также преподавателей БНТУ кафедры английского языка № 2, в целях проведения как аудиторных практических занятий, так и для самостоятельной работы студентов.

Содержание

1. ТЕОРЕТИЧЕСКАЯ ЧАСТЬ

См. Колосова Т.В., Практическая грамматика английского языка: учебно-методическое пособие / Колосова Т.В., Крюкова Л.А-Мн.: БНТУ, 2005. – 108 с.

I. СИНТАКСИС

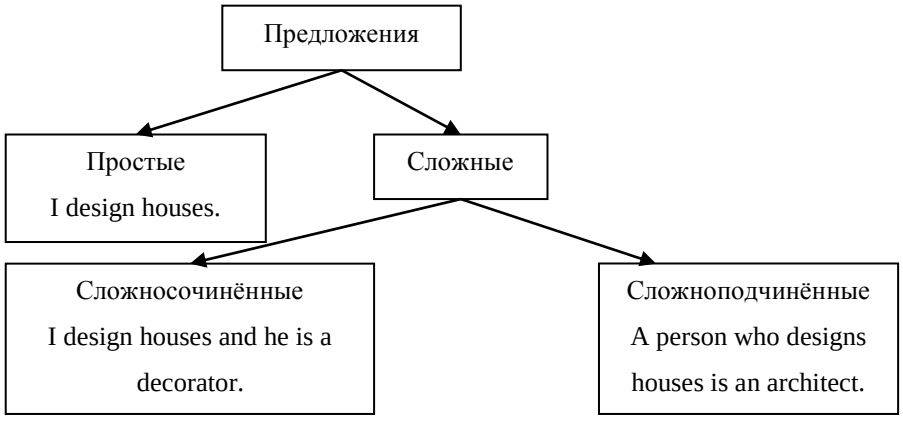
1.1. Определение.

Синтаксис – раздел науки о языке, изучающий структуру предложения: его элементы и связи между ними.

Предложение – цепочка слов, обозначающих законченную мысль.

1.2. Классификация.

Существует несколько видов предложений:



1.3. Простое предложение.

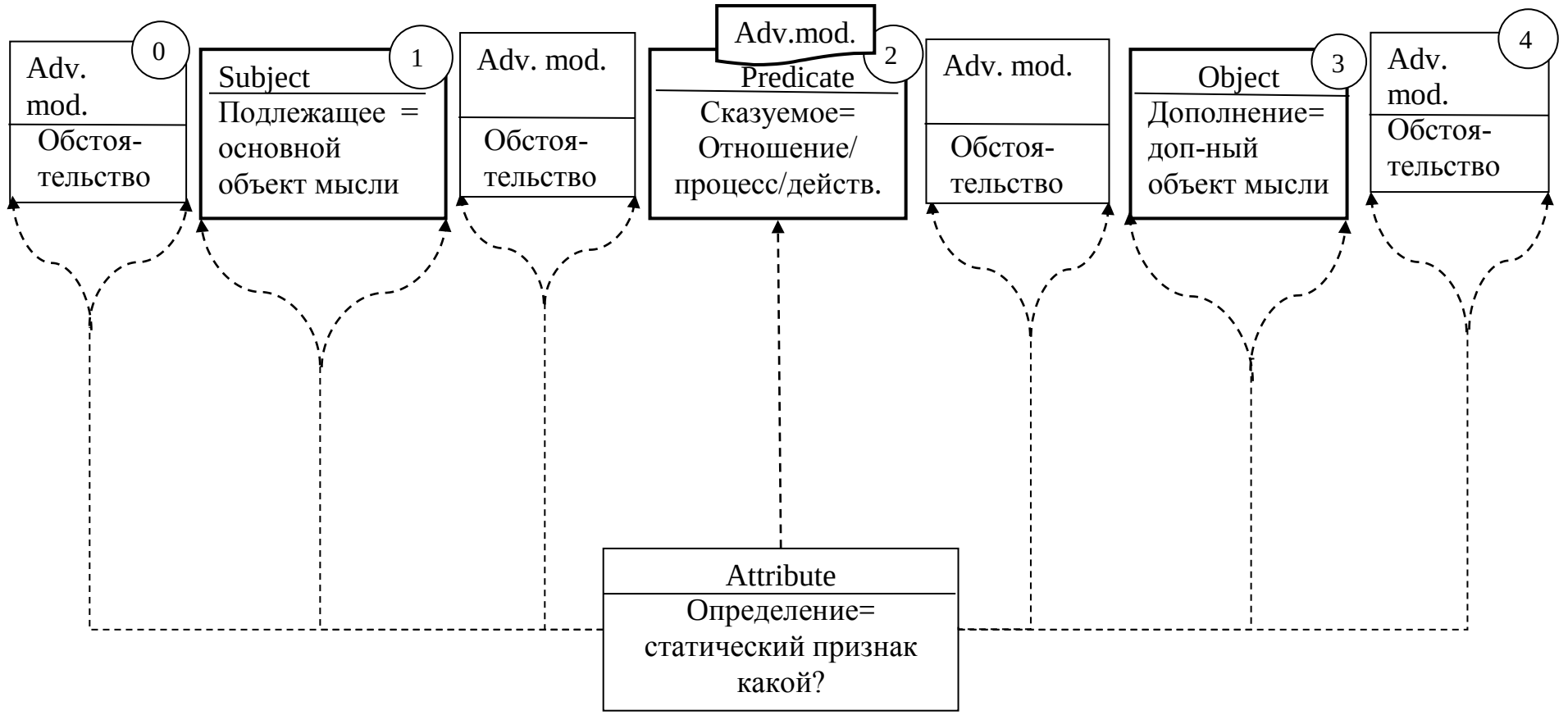
1.3.1. Структура простого распространённого предложения.

Простое распространённое предложение состоит из следующих компонентов (см. табл.1):

1. Подлежащее (кто? что?) – основной предмет мысли – находится на первом месте в предложении.
2. Дополнение (кого? что?) – дополнительный предмет мысли – находится на третьем месте в предложении.

Таблица 1

Структура простого распространенного предложения



Adv. mod = Adverbial modifier

окончание табл.1

	S The firm Фирма	**P** builds строит	**O** tunnels. тоннели.	
	Att +S A Turkish firm Турецкая фирма	**P** is building строит	**Att+O** a railway terminal железнодорожный вокзал	**Att +AM** in our city. в нашем городе.
Att/AM Last year В прошлом году	**Att +S** our firm наша фирма	**P** built построила	**Att+O** a first class airport высококлассный аэропорт	**AM** in Brest. в Бресте.
	S We Мы	**P+AM+P** have already built уже построили	**Att+O** a 22-story tower 22-х этажный небоскрёб	**AM** downtown. в центре города.

3. Сказуемое (что делать?) – отношение, связь между подлежащим и дополнением - располагается между ними на втором месте.
4. Обстоятельство (где? когда? как?) – место, время, характеристика действия или отношения – помещается на периферии предложения (на нулевом или четвёртом месте) или рядом со сказуемым.
5. Определение (какой?) – характеристика предмета мысли (подлежащего, дополнения) или обстоятельства. Помещается рядом с определяемым словом (перед ним или после него) и образует группу подлежащего (Att+S, S+Att), дополнения (Att+O, O+Att), или распространённое обстоятельство (Att+Adv.mod, Adv.mod+Att).

1.3.2. Анализ структуры простого предложения.

Для интерпретации предложения необходимо провести анализ его структуры, т.е. выделить ключевые элементы*: сказуемое, подлежащее, дополнение, обстоятельство.*

Идентификация сказуемого

- ***Определение сказуемого по показателям времени, залога, модальности.***

1. Личные формы глаголов to be (am, is, are, was, were, will be, shall be, would be, should be), to have (has, have, had, will have, shall have), to do (do, does, did, will do, shall do).

My friend ***is a civil engineer***.

Мой друг – инженер-строитель.

We ***have passed*** the English exam.

Мы сдали экзамен по английскому языку.

The lecturer ***did not answer*** the students' questions.

Лектор не ответил на вопросы студентов.

We ***shall do*** the translation next time.

Мы выполним перевод в следующий раз.

2. Модальные глаголы и их эквиваленты (can/could/to be able to, may/might/to be allowed to, must/have to, be to, should, would, ought)

The firm ***can offer*** a range of modern building materials.

Эта фирма может предложить ряд современных строительных

материалов.

The students ***had to take*** 3 exams.

Студентам пришлось сдавать 3 экзамена.

We ***would like to decorate*** the house.

Нам бы хотелось отремонтировать дом.

3. Окончание ***-es, -ed*** глагола.

The team ***consists*** of 10 builders.

Бригада состоит из 10 строителей.

They ***reconstructed*** the central street last year.

В прошлом году они реконструировали центральную улицу.

Примечание1: окончание ***–es*** трактуется неоднозначно.

Ср: The team consists (состоит) of 10 builders.(глагол в 3 лице)

The teams (бригады) consist of 10 builders**.** (сущ. во мн. числе)

Примечание 2: окончание ***–ed*** трактуется неоднозначно.

Ср: They studi***ed*** building materials.(глагол-сказуемое в Past Indefinite)

Они изучали строительные материалы.

The subjects studi***ed*** were listed in the time-table. (Причастие II)

Изучаемые предметы были перечислены в расписании.

4. Вторая форма неправильных глаголов.

They ***built*** a concert hall at the central square.

Они построили концертный зал на центральной площади.

- ***Определение сказуемого по характерным признакам предшествующих и последующих членов предложения.***

1. Сказуемое располагается после подлежащего, существительного в общем падеже или местоимения в именительном падеже (I, you, he, she, it, we, they).

   Philosophy lectures ***are*** very instructive.

   Лекции по философии очень содержательны.

   We ***have*** philosophy lectures on Mondays.

   У нас лекции по философии по понедельникам.

2. Сказуемое находится перед дополнением, выраженным существительным в общем падеже или местоимением в объектном падеже.

   The building ***houses*** the architecture department.

   В здании расположен архитектурный факультет.

   The lecturer ***asked*** them to take notes.

   Лектор попросил их делать записи.

3. При отсутствии дополнения сказуемое предшествует обстоятельству, часто существительному/местоимению с предлогом:

   We ***went*** to the dean's office.

   Мы отправились в деканат.

Идентификация подлежащего

Позиция подлежащего может быть занята:

1. существительным в общем падеже (формальный показатель – артикль)

   The professor is in the lecture theatre.

   Профессор находится в лекционном зале.

2. местоимением в именительном падеже (I, he, she, it, we, you, they)

   We live in the center of Minsk.

   Мы живем в центре Минска.

   They attend lectures at the Technical University.

   Они посещают лекции в техническом университете.

3. инфинитивом глагола

To carry out research is necessary.

Необходимо провести исследование.

4. герундием

Translating new patents was an important part of work.

Перевод новых патентов был важной частью работы.

- *Подлежащее предшествует сказуемому:*

The computer design program includes 3 components.

Программа компьютерного проектирования включает 3 части.

Идентификация дополнения

- *Позиция дополнения может быть занята:*

1. существительным в общем падеже

He decorates ***houses***.

Он отделывает дома.

2. местоимением в объектном падеже

We read ***them (books).***

Мы их читаем (книги).

3. герундием

She relies on ***our coming in time.***

Она надеется, что мы придем вовремя.

- *Дополнение следует за глаголом-сказуемым.*

I am designing ***a railway terminal***.

Я проектирую железнодорожный вокзал.

Идентификация обстоятельства

- *Позиция обстоятельства заполняется:*

1. существительным без предлога

Last term we passed 3 exams.

В прошлом семестре мы сдали 3 экзамена.

2. существительным с предлогом

In this paper the author discusses three problems of modern physics.

В этой работе автор обсуждает 3 проблемы современной физики.

3. наречием, часто с характерным суффиксом –ly

Recently we have discussed this problem at the physics lecture.

Недавно мы обсудили эту проблему на лекции по физике.

4. причастием

Delivering the lecture the professor always gave a lot of examples.

Читая лекцию, профессор всегда приводил много примеров.

5. герундием

By introducing modern equipment we reduce the time of construction by 30%.

С внедрением нового оборудования мы снижаем время строительства на 30 %.

6. инфинитивом

To obtain good results we must control the experimental conditions.

Чтобы получить хорошие результаты, мы должны контролировать условия эксперимента.

- *Обстоятельство располагается:*

1. в начале предложения

Next week we shall have a lecture in chemistry.

На следующей неделе у нас будет лекция по химии.

2. в конце предложения

The lecture will be held ***at the 15th teaching block***.

Лекция состоится в 15-ом корпусе.

3. рядом со сказуемым

He ***often missed*** his English classes.

Он часто пропускал уроки английского языка.

I ***have just got*** a credit in hydraulics.

Он только что получил зачет по гидравлике.

Идентификация определения

- *Определение может быть выражено:*

1. прилагательным

   The laboratory is equipped with ***new*** power generators.

   Лаборатория оснащена новыми силовыми генераторами.

2. существительным

   Power generation is studied during the first two lectures.

   Производство электроэнергии изучается на первых двух лекциях.

3. местоимением

   Their project was awarded a prize.

   Их проект был удостоен награды.

4. причастием

   The equipment ***installed*** at the lab was produced in Belarus.

   Оборудование, установленное в лаборатории, произведено в Беларуси.

5. инфинитивом

   The equipment ***to be installed*** in the lab will be delivered tomorrow.

   Оборудование, которое нужно установить в лаборатории, будет доставлено завтра.

6. герундием

   The ***curing*** period depends on the temperature.

   Время выдержки зависит от температуры.

Упражнения

I. Определите сказуемое в следующих предложениях, используя показатели в форме сказуемого и порядок следования членов предложения.

1. Our team has delivered the necessary materials to the construction site. 2. The bridge crosses the river near the village. 3. The results obtained were analyzed by the post graduates. 4. These labs house all the necessary equipment. 5. Our aim is to get all the data available. 6. We want to measure the length of these bars. 7. The samples were taken to the lab for analysis. 8. They have been building the City Hall for 2 years. 9. Major expenses in buildings are for land, materials and labour. 10. The students' first duty is to study. 11. The bridge seemed strong and reliable. 12. His task was designing a new type of machine. 13. We have finished mixing concrete before the rain.

II. Определите подлежащее в следующих предложениях.

1. They checked the quality of the building materials every week. 2. The building equipment exhibition was held in May. 3. Last year the power engineering industry showed a rise by 7%. 4. In 2003 the railway terminal was reconstructed. 5. Concrete has become an important construction material. 6. This is the most beautiful part of the city. 7. To operate new machine-tool was very easy. 8. We are to take five exams at the end of this term. 9. Heating, insulation, air conditioning, and lighting have become basic parts of the architectural project. 10. Millions speak English all over the world. 11. Those were our first lessons of road engineering. 12. Nobody understood the importance of his invention at that time. 13. "Excellent" is my usual mark in chemistry. 14. Seven students didn't pass their lab works last term. 15. It was a very informative article of the well-known scientist. 16. Decreasing the time of construction is our main task.

III. Определите дополнение в следующих предложениях.

1. The young workers were not allowed to use the new equipment. 2. High labour cost influences the choice of techniques and materials. 3. A lot of time is given to studying

the new method of work. 4. Every student wants to pass his or her exams successfully. 5. The engineers began discussing the reinforcement of the tower. 6. The scientist is always fond of solving complicated problems. 7. The plant produces heavy trucks. 8. This suggestion didn't need discussing. 9. We have tested both motor cars. I liked the first better than the second. 10. The examiner asked everybody difficult questions. 11. Engineers always pay much attention to the quality of materials. 12. The students were asked to hand over their tests. 13. Who is responsible for unloading the ship? 14. Have you seen the chief engineer today? – I spoke to him yesterday.

IV. Определите обстоятельство в следующих предложениях.

1. At the University the students are taught many different subjects. 2. According to the new plan the railway will be extended as far as the seaport. 3. They will study this subject next term. 4. This material should be treated with great care. 5. Owing to a special treatment the resistance of the compound improved. 6. We applied different methods to solve this problem. 7. The capacity of the engine has been greatly increased recently. 8. It is impossible to reduce the production expenses without using new technologies. 9. While mixing the concrete one should observe the right component ratio. 10. He drove the car very slowly because of heavy traffic. 11. He found this mineral by chance in the mountains many years ago. 12. On arriving at the construction site the lorries were immediately unloaded. 13. They examined a lot of metals to choose the most suitable one.

V. Найдите в предложениях определения к подлежащему, дополнению и обстоятельству.

1. Architecture should meet requirements of civilized people. 2. Road surface strength depends on material quality. 3. The ultimate purpose of building techniques is to create a stable structure. 4. The methods used showed high productivity. 5. The teacher was satisfied with the students' term papers. 6. Advanced technologies must be used to increase the scale of production. 7. This cement is suitable for structures to be erected in

seawater. 8. He has made some mistakes in his calculations. 9. The idea of improving the engine came to us after the accident. 10. We were the first to use these methods in research work. 11. The questions to be discussed at the conference are of great scientific interest. 12. The main object of his research was insulation material properties. 13. They obtained unexpected results during the second test. 14. The first bridge carrying such loads was built in our country.

1.3.3. Конструкция “There + to be”.

Конструкция “There + to be” используется для сообщения о наличии в заданном месте некоторого количества неизвестных объектов:

There are two airports in our capital.

В нашей столице есть два аэропорта

There is a big reservoir not far from the town.

Недалеко от города есть большое водохранилище.

Если указание места отсутствует, предложения переводятся выражениями “Имеется…”, “Существует…”.

There are several popular building materials.

Существует несколько популярных строительных материалов.

1.3.4. Безличные предложения.

Безличные предложения имеют следующую структуру:

It is necessary to…

It is difficult to…

It is important to…

“It” является формальным подлежащим и не переводится.

It is necessary to repeat this experiment.

Необходимо повторить этот эксперимент.

1.3.5. Неопределенно-личные предложения

Неопределенно-личные предложения имеют в качестве подлежащего неопределенно-личное местоимение **one**:

One can take this exam on Monday.

Можно сдавать этот экзамен в понедельник.

One must get all credits by the end of May.

Необходимо получить все зачеты к концу мая.

One should attend the meeting.

Следует посетить это совещание.

1.3.6. Эмфатические (усилительные) предложения

Для выделения одного из членов предложения его помещают в конструкцию ***It is … that/who:***

It is my cousin ***who*** entered the Technical University.

Именно мой двоюродный брат поступил в технический университет.

It is the Technical University ***that*** my cousin entered.

Мой двоюродный брат поступил *именно* в технический университет.

It is last year ***that*** my cousin entered the Technical University.

Именно в прошлом году мой двоюродный брат поступил в технический университет.

Упражнения

VI. Переведите предложения, обращая внимание на перевод структуры ***there+to be.***

1. There are 16 departments at our university. 2. How many students are there in your group? 3. Is there an Extra-Mural Department at the Technical University? 4. There are all modern conveniences in the new students' hostels. 5. There is a modern highway between the two capitals. 6. There are several methods of increasing the system reliability. 7. There was no opportunity to avoid the discussion of this incident. 8. There

will be a great demand for such specialists in the future. 9. There were three types of arches in ancient architecture. 10. There was a difficult article to be translated into Russian. 11. There haven't been any troubles with the apparatus for two years. 12. There exist different opinions on this question. 13. There must be no doubt about the engine safety. 14. Are there any questions about this grammar structure?

VII. Переведите предложения.

Model: ***It*** *is not easy to study foreign languages. –*

Не легко изучать иностранные языки.

1. It is necessary to switch off the light leaving the room. 2. It was rather difficult to repair the broken engine. 3. It is useful to take part in research work. 4. It is important to calculate the right amount of water in this solution. 5. It was not easy to tunnel the tube under the sea. 6. It is impossible to build modern roads without new materials and machines. 7. Is it possible to find suitable devices for your experiments? 8. It would be difficult to design this bridge without skilled engineers. 9. Is it mandatory to serve in the army in your country?

VIII. Переведите предложения.

Model: ***One*** *must always observe traffic rules. –*

Нужно всегда соблюдать правила дорожного движения.

1. One should study a lot to become a skilled engineer. 2. One may take part in the discussion of this problem at the seminar. 3. One can enter the Technical University after passing entrance exams. 4. One usually hopes to find a well-paid job after graduating from the University. 5. One should be attentive at the lesson. 6. One may work in the laboratory only observing certain rules. 7. One should follow the instructions of the manual. 8. One mustn't use mobile phones at the exams. 9. One ought to respect elderly people. 10. One cannot use the laboratory without the lab assistant. 11. One never knows the thoughts of other people. 12. One should learn all one's life.

IX. Переведите предложения.

Model: ***It was*** *my colleague* ***who*** *designed this concert hall. –*

Именно (только) опытный механик смог починить мою машину.

1. It is an architect who designs buildings and makes plans for them. 2. It was my father who taught me to drive a car. 3. It was a young engineer who solved this problem. 4. It was concrete that replaced timber in bridge construction. 5. It was after the war that Minsk acquired its contemporary image. 6. It was bad road conditions that caused this accident. 7. It is not until you examine the substance thoroughly that you may use it in your research. 8. It is at the Technical University that you can become a qualified power engineer. 9. It was new materials that allowed constructing more durable and beautiful structures. 10. It was not till he failed the exam that he decided to learn more. 11. It is for electrical work that metal ladders must never be used. 12. It is at the construction site that prefabricated units are assembled.

1.4. Сложные предложения.

1.4.1. Сложносочиненные предложения.

Сложносочиненные предложения состоят из двух равноправных предложений, которые соединяются союзами ***and, but***.

The University campus is situated in the center of Minsk, ***but*** the Power Engineering Department is located in the Vostok district area.

Университетский городок находится в центре Минска, ***но*** факультет энергетического строительства располагается в микрорайоне Восток.

1.4.2. Сложноподчинённые предложения.

В сложноподчиненном предложении выделяются главное и придаточное предложение, при этом придаточное предложение выполняет функцию одного из членов предложения: подлежащего, дополнения, сказуемого, обстоятельства или определения (см. табл.2).

Типы придаточных предложений

Типы придаточных предложений и союзы (союзные слова)	Примеры и перевод
Подлежащее that, who, what, when, whose, how, why, whether/ if	***That*** he has made a mistake is strange. То, что он сделал ошибку, странно. ***Who*** will be the first to pass the exam is not clear. Не ясно, кто первый сдаст экзамен. It is not known ***whether (if)*** they will enter the University. Не известно, поступят ли они в университет.
Дополнение that, where, when, why, how	The instructor said ***that*** I had made a mistake. Преподаватель сказал, что я сделал ошибку. He wanted to know ***what*** we thought about it. Он хотел знать, что мы думаем об этом. We don't know ***where*** he is. Мы не знаем, где он.
Сказуемое that, where, when, why, how	The trouble is ***that*** they are not ready for the exam. Всё дело в том, что они не готовы к экзамену. The problem is ***where*** to go. Проблема – куда пойти.
Определительное who(m), that, which, whose, Ø	I know the man ***whom*** you invited to the conference. Я знаю человека, которого вы пригласили на конференцию. This is the paper (***which***) I sent to my Canadian colleague. Вот статья, которую я отослал моему канадскому коллеге.

Обстоятельственное ▪ времени when, wherever, while, as, after, till, until	The students stood up ***when*** the lecturer came. Студенты встали, когда вошёл лектор. ***As soon as*** we got the text, we began translating it. Как только мы получили текст, мы начали его переводить.
▪ места where, wherever	They like to spend their holidays ***where*** they can feel comfortable. Они любят проводить отпуск там, где чувствуют себя комфортно.
▪ причины as, because, for, since, now that	He got high grades ***because*** he had learnt everything. Он получил высокую оценку, т.к. все выучил.
▪ цели in order that, so that	He turned on the video, ***so that*** we could watch a film about the USA. Он включил видео, чтобы мы могли посмотреть фильм о США.
▪ образа действия as, as if, as through	You are answering ***as if*** you didn't know the rule. Вы отвечаете так, как будто не знаете правило.
▪ следствия so(that)	He came to the lecture theatre early ***so that*** he got a good seat. Он пришёл в лекционный зал рано и поэтому занял хорошее место.
▪ уступительные through, although	***Though*** it was only 7.45 everybody was in the lecture theatre. Хотя было только 7.45, все уже были в лекционном зале.
▪ условия if, unless, in case, provided (that), providing (that)	She will not fulfill the task ***unless*** I help her. Она не выполнит задания, если я ей не помогу.

1.4.3. Бессоюзное подчинение.

Придаточные определительные и дополнительные придаточные предложения нередко присоединяются к главному предложению без соответствующего союза (союзного слова), который в переводе должен быть восстановлен.

I know ***(that)*** the exams will start in June.

Я знаю, ***что*** экзамены начнутся в июне.

Let us list the problems ***(which)*** we are going to discuss.

Давайте перечислим проблемы, ***которые*** мы собираемся решить.

Предлог после глагола переводится перед восстанавливаемым словом «который».

The department ***you are studying at*** is the oldest at the University.

Факультет, на котором вы учитесь, - старейший в университете.

The lecturer ***he is speaking about*** will come at 5.

Лектор, о котором он говорит, придёт в 5.

1.4.4. Условные предложения (Conditionals).

Сложноподчиненные предложения условия передают значение желательности или возможности действия или процесса. Существует 3 типа условных предложений (см. таблицу 3). В типах 2 и 3 глаголы стоят в форме сослагательного наклонения: в главном предложении это сложные формы

should, would, could, might + Indefinite Infinitive / Perfect Infinitive } без частицы “to”,

в придаточном предложении – простые формы, совпадающие с формой Past Indefinite или Past Perfect глагола.

Примечание: глагол to be представлен только в форме were.

If I ***were*** a technical student I could take part in this conference.

Если бы я был студентом технического вуза, я бы мог принять участие в конференции.

Таблица 3. Типы условных предложений

Типы	Пример и перевод
Type I (real)	Present Indefinite — Future Indefinite If they ***build*** this power plant they ***will solve*** the power supply problem in the Republic. - Если они ***построят*** эту электростанцию, то ***решат*** проблему энергоснабжения в Республике. Present Indefinite — Future Indefinite When I ***am*** an engineer I ***shall build*** the biggest power plant in Belarus. - Когда я ***буду*** инженером, я ***построю*** крупнейшую электростанцию в Беларуси.
Type II (unreal present)	Past Indefinite — Would+ Indefinite Infinitive If they ***built*** this power plant they ***would solve*** the power supply problem in the Republic. Если ***бы*** они ***построили*** эту электростанцию, то ***решили бы*** проблему энергоснабжения в Республике. Past Indefinite — would/could +Indef. Infinitive If I ***were*** an engineer I ***would/could answer*** your question. Если ***бы*** я ***был*** инженером, я ***бы ответил*** на ваш вопрос.
Type III (unreal past)	Past Perfect — would +Perf. Infinitive If they ***had built*** this power plant last year they ***would have solved*** the power supply problem in the Republic. - Если ***бы*** они ***построили*** эту электростанцию в прошлом году, они ***решили бы*** проблему энергоснабжения в республике.
инверсия	***Had*** they ***built*** this plant last year they ***would have solved*** the power supply problem in Belarus. Если ***бы*** они ***построили*** эту электростанцию в прошлом году, они ***решили бы*** проблему энергоснабжения в республике.

Упражнения

X. Среди сложных предложений выберите сложноподчиненные предложения и переведите их.

1. Modern building materials are of course very common, but there is still some wood and paper in modern homes. 2. When the Empire State Building was built in 1931, it was the tallest building in the world. 3. Safety helmets are never made of rubber since rubber is a flexible material. 4. Many people in our country now live in separate flats and their homes have all modern conveniences. 5. Less than a year after he came to Petersburg Lomonosov was sent abroad to study metallurgy and mining. 6. The kitchen is often very small, and you never eat or entertain people there. 7. The scientist proved that the white light of the sun is composed of rays of light of all colours of the rainbow. 8. There was very little rain in Egypt and they constructed flat roofs. 9. This road has been used for many years but now it needs reconstructing. 10. A man who designs buildings and makes plans for them is called an architect. 11. Water is added to the mix and its amount affects the strength of the concrete. 12. If the battery is flat you should recharge it.

XI. Определите тип придаточных предложений и переведите их на русский язык.

1. What is important for concrete strength is the correct proportion of aggregates. 2. Timber beams were used instead of stone blocks since timber is easier to cut and transport. 3. The main problem was that we didn’t have suitable machinery to repair the road. 4. Blocks of flats are now largely built out of prefabricated units which are often assembled actually on the construction site. 5. The shop buildings are also rather interesting though they often are identical in form. 6. Its record as the world's tallest building has been beaten but the Empire State Building remains uniquely fascinating. 7. What is important is the correct sequence of building operations. 8. Although their buildings were simple in construction, the Egyptian art of building was very beautiful. 9. The first houses in many parts of the world were made of wood, for those days the greater part of the Earth was covered with forests. 10. Although they were built without

cement, the remains of a few of them still exist. 11. The country was poor in timber and metal, so that the main material used for construction was granite. 12. You will get good results if you apply this method of calculation. 13. Concrete is used for building bridges because it is rigid. 14. The results of the experiment should be checked before you can use them in your report. 15. Don't touch the wire until you have switched off the power. 16. If it is a concrete road, the concrete is laid on the top of the gravel.

XII. Переведите предложения, обращая внимание на бессоюзное подчинение.

1. The methods we have just described are very effective. 2. We know electricity produces heat. 3. The instruments our plant produces help to automate production processes. 4. I think he has made a mistake in his calculations. 5. Every substance a man comes in contact with consists of molecules. 6. I think the drawing will be ready by tomorrow. 7. We know radio and radar systems play a very important role at any airport. 8. The information science gets about other galaxies comes through radiotelescopes. 9. The new materials our chemists developed were used in interior decoration. 10. The hostel our students live in is situated not far from the underground station. 11. We have already examined the methods we can employ instead the old ones. 12. The Japanese still measure a room by the number of tatami mats it can contain. 13. The main reason reinforced concrete is replacing timber is its greater strength. 14. The concrete properties are influenced by the properties of basic material we use. 15. The building design depends on its function and the materials it is made of. 16. New materials we use in road construction offer many advantages over the materials they replace.

XIII. Переведите предложения на русский язык.

1. If he enters the Technical University he will be able to get the profession of a power engineer. 2. When he is in London he will contact the author of the article. 3. If she entered the Technical University she would get a good profession. 4. If I were you I'd add more water into the mixer. 5. If we had learned the new words we would have

translated the text. 6. If this student had passed the exams with his group, he could have had a nice holiday in the Crimea. 7. If you mix the ingredients in the right parts you will get high quality concrete. 8. If you got the books in the library you could get ready for the exam at home. 9. If he had looked through this journal he would/could have found a very interesting article in his field of research. 10. If our stay in London were longer we could visit Oxford as well. 11. If the students had been more careful, they wouldn't have broken the new apparatus. 12. If the engineer had been informed of the results before, he would have allowed you to repeat the test. 13. If we had used new methods, we would have saved a lot of time. 14. Had you applied your theoretical knowledge to your practical work, you would have got different results. 15. If I were in his place, I would refuse to stop the experiment. 16. If the mechanic were there, he would repair the equipment. 17. If the service life of the instrument had been prolonged, the economic effect would have been increased many times. 18. If they improve the engine's capacity, they will be able to increase the speed of the truck. 19. Had the proper materials been selected, the failure would not have happened. 21. You would never get lost in a new city if you had a map of it. 22. If he had taken into account all the properties of prestressed concrete, he would have used it in his structure.

XIV. Выберите правильный вариант оформления сказуемого.

1. The realization of this program for capital construction (will be/would be) possible if industrial methods of work were used. 2. Had they met with such difficulties before, they (would have known, would know) what to do now. 3. If the oil supply (stops/had stopped) even for a moment, serious damage might have resulted. 4. If a solid body (were heated/is heated), it will usually expand. 5. If the town is built according to the plan, its economy (will have developed/will develop) in a balanced manner. 6. If the scientists (find/found) some ways to predict earthquakes, it would be possible to evacuate people from the regions and thus save many human lives. 7. If they (needed/need) the equipment urgently, we could transport it by plane. 8. If I (were/was) in his place, I would refuse to stop the experiment. 9. If it were necessary to increase the

speed of this engine, it (could be achieved/could have been achieved) by using a special device. 10. The accident would not have happened, if they (had been/were) more careful.

XV. Переведите предложения на русский язык.

1. Если бы у меня был компьютер, я бы мог быстро решить эту задачу. 3. Я уверен, что он поможет тебе, если ты попросишь. 4. Если бы у меня было время, я бы выучил немецкий язык. 5. Если бы вы приняли меры предосторожности, вы бы избежали аварии. 6. Если добавить слишком много воды, бетон будет непрочным. 7. На вашем месте я бы произвёл измерения несколько раз. 8. Если бы вы отремонтировали оборудование, вы бы могли использовать его в вашем эксперименте. 9. Если бы покрытие дороги было высокого качества, то возросла бы скорость движения. 10. Если дорожное покрытие будет высокого качества, то скорость движения возрастёт. 11. Если бы вы занимались исследовательской работой, вы бы поступили в аспирантуру.

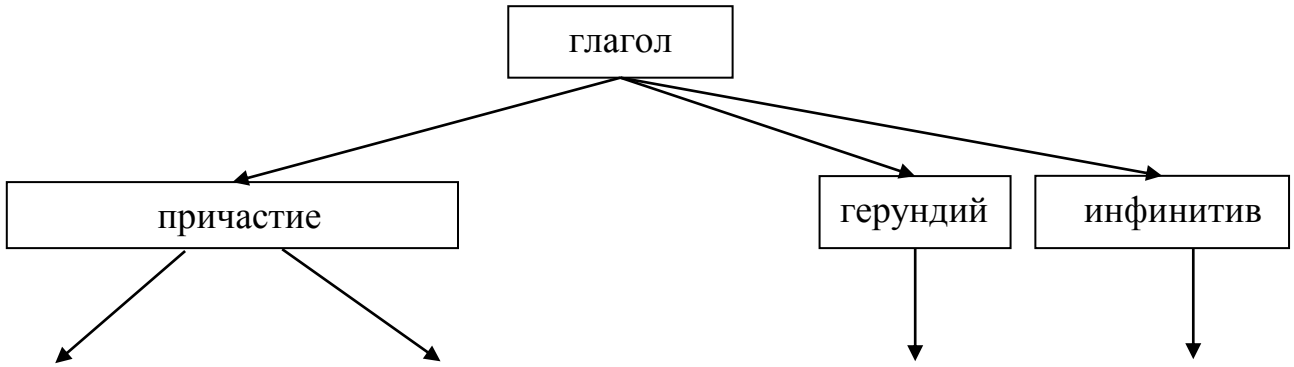
II. МОРФОЛОГИЯ

В настоящем разделе рассматриваются грамматические *классы слов* или *части речи* и та *грамматическая информация* (грамматические категории), которую передают слова, принадлежащие к соответствующему классу. Так, *основными* и наиболее многочисленными классами слов являются *существительные* (**a bridge** – мост, **a tower** – башня, **an engineer** – инженер), *прилагательные* (**effective** – эффективный, **long** – длинный, **sophisticated** – сложный) и *глаголы* (to **build** – строить, **to equip** – оборудовать, **to recommend** рекомендовать). При этом существительное передаёт информацию о *числе* предметов (bridge**s**), *падеже* (the engineer's decision) и определённости (**a** tower – **the** tower), прилагательное имеет *степени сравнения* (short – short**er** – the short**est**), в то время как глагол всегда содержит информацию о *времени* (begin**s**, **was** build**ing**, **has** chang**ed**) и *залоге* (**were** reconstruct**ed**, has **been** design**ed**).

Таблица 4. Основные части речи

Часть речи	Пример
Существительное/ The Noun (N)	a dam – плотина, a crane – кран, development – развитие;
Прилагательное/The Adjective (Adj)	long – длинный, effective – эффективный;
Глагол/Verb (V)	to build – строить, to obtain – получать;
Местоимение/ The Pronoun (Pr)	he – он, this – этот, what – что, that – который, herself – сама/себя;
Наречие/ The Adverb (Adv)	well – хорошо, widely – широко, eastwards – на восток;
Союз/ The Conjunction (Con)	And – и, when – когда, if – если;
Числительное/ The Numeral (Num)	eight – восемь, sixteen – шестнадцать, sixth – шестой;
Предлог/ The Preposition (Prep)	to – в, on – на, out of – из.

Кроме *основных* частей речи выделяют вторичные *производные* классы слов. Так, *глагол* является исходной формой для трех производных классов: *причастия, герундия и инфинитива*.



причастие I	причастие II			
V+ing	V+ed	3 f V	V+ing	to + V
develop**ing** разрабатывающий	develop**ed** разработанный	buil**t** построенный	build**ing** строительство	**to** build строить

design**ing** проектируя	design**ed** спроектирован	brok**en** разрушенный	solv**ing** растворение	**to** solve растворять

Каждой из перечисленных частей речи посвящается отдельный раздел «Морфологии». В разделе даются:

1. краткая характеристика части речи;
2. классификации внутри части речи;
3. основные грамматические категории;
4. использование (функции) слов, относящихся к данному классу, в предложении;
5. особые синтаксические конструкции, «обороты», в которых употребляется данная часть речи (если таковые имеются);
6. словообразование (характерные аффиксы.);
7. производные формы (если таковые имеются).

1. Существительное (The Noun)

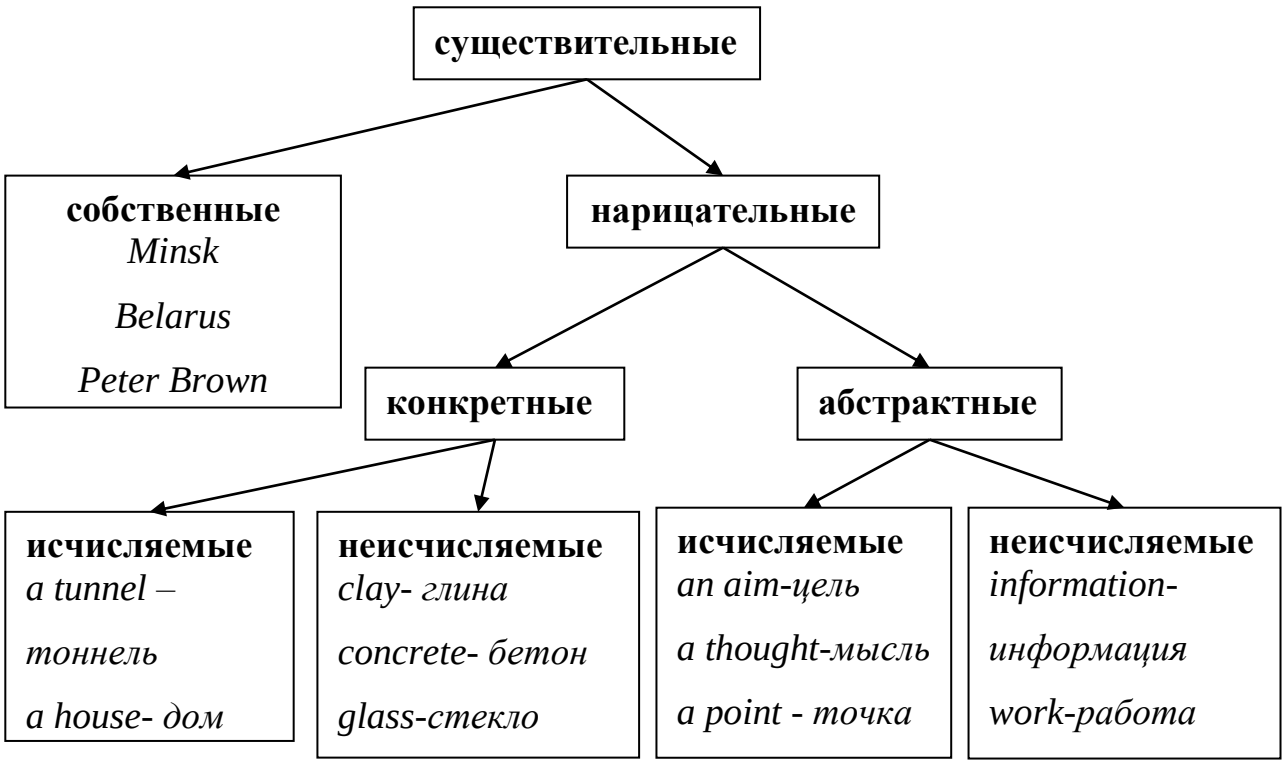
1.1. Определение.

Существительное – часть речи, обозначающая предметы и явления, мыслимые как предметы.

a hammer – молоток	a plan – план	research – научная работа
a bridge – мост	Brest – Брест	onstruction – строительство

1.2. Классификация.

Существительные делятся на несколько классов:



1.3. Категории существительного.

1.3.1. Число существительного.

Исчисляемые существительные имеют формы единственного и множественного числа. Модели, по которым образуются формы множественного числа существительных, приведены в таблице 5.

Таблица 5. Множественное число нарицательных существительных

Способы образования множеств. числа:	Примечания:
1. $\mathbf{N} \rightarrow \mathbf{N}_{(e)s}$ [z] *a dam → dam**s*** [dæmz] *clay → clay**s*** [kleiz] } после звонких согласных и гласных [s] *a pipe → pipe**s*** [paips] *a task → task**s*** [tʌsks] } после глухих согласных [iz] *a press→ press**es*** [presiz] *a box → box**es*** [boksiz] } после шипящих и свистящих согласных	Варианты орфографии: $\mathbf{N_y} \rightarrow \mathbf{N_{ies}}$ *a ci**ty** → ci**ties*** *a facto**ry** → facto**ries*** ***но:** cl**ay** → cl**ays*** $\mathbf{N_{s,ss,ch,sh,x}} \rightarrow \mathbf{N_{es}}$ *a mix → mix**es*** *a press → press**es*** $\mathbf{N_o} \rightarrow \mathbf{N_{es}}$ *a fresco → fresco**es*** ***но:** kilos, photos* $\mathbf{N_{f(e)}} \rightarrow \mathbf{N_{ves}}$ *a knife → kniv**es*** *a life → liv**es*** *a leaf → leav**es***
Составные существительные: *a boiler-house → boiler-hous**es*** ***но:** a passer-by → passer**s**-by* *a schoolboy → schoolboy**s*** *a sister-in-law → sister**s**-in-law*	
2. Чередование гласной корня *a m**a**n → m**e**n* *a t**oo**th → t**ee**th* *a f**oo**t → f**ee**t* *a m**ou**se → m**i**ce*	Составные существительные: ● *a firem**a**n → firem**e**n* ● *a wom**a**n-scientist→women-scientist**s*** *a m**a**n-doctor → m**e**n-doctor**s***
3. Уникальные формы *dat**um**→dat**a*** *phenomen**on** → phenomen**a*** *basis → bases* *formul**a** → formul**i***	
4. a **N** → **N** *a means (средство)→ means(средства)* *a fish* (рыба, одна)→*fish* (рыба, соб. знач)	Но: *fish**es*** – виды/сорта рыбы
5. **Исключения**	только ед. число: *information* (информация), *matter*(материя) только множ. число: *jean**s*** (джинсы), *scissor**s*** (ножницы). но: *new**s*** (новости, ед.число).

1.3.2. Падеж существительного.

В английском языке существительное имеет 2 падежа: *общий* и *притяжательный*. Форма притяжательного падежа строится на основе общего (словарная форма):

N→N's
the engineer → the engineer's recommendations (рекомендации инженера)
Ns→**N**s'
the engineers → the engineers' recommendations (рекомендации инженеров)
но: those men's job (работа этих мужчин)

В притяжательном падеже употребляются названия людей, групп людей, животных, организаций, стран, обозначения временных периодов.

Mike's computer – компьютер Миши
the children's plan – план детей
the dean's office – кабинет декана
the firm's structure – структура фирмы
the horse's tail – хвост лошади
America's decision – решение Америки
today's exam – сегодняшний экзамен
yesterday's lecture – вчерашняя лекция

1.3.3. Категория определённости (употребление артикля).

Артикль – специальный показатель определённости или неопределенности объекта, обозначаемого существительным, в предложении.

Если объект не известен слушающему, то говорящий употребляет неопределённый артикль (**a/an**) перед нарицательным существительным, если речь идёт об одном объекте (You can see ***a bridge*** there), или использует существительное без артикля, если объектов несколько (You can take ***exams*** every year).

Если объект известен слушающему, соответствующее существительное употребляется с определенным артиклем, поэтому нередко определённый артикль может переводиться как «этот», «эти».

You can see ***the bridge*** there.

Вы можете видеть (этот) мост там

Основные случаи употребления артикля с нарицательным существительным представлены в таблице 6.

Особые случаи употребления артикля в некоторых синтаксических конструкциях:

a/an:

- после слов such, quite, what:

  He gave us *such* **a** difficult task.

  She is *quite* **a** good lecturer.

  What **a** tall tower!

- в значении «один» перед словами dozen, hundred, thousand, million, hour:

  The device weighs ***a hundred*** pounds.

  The experiment will be completed in ***an hour***.

- в устойчивых выражениях **a** lot of, **a** great many of, as **a** matter of fact, as **a** rule, for **a** long time и др.:

  A lot of new buildings have been built in Minsk.

- в устойчивых словосочетаниях с глаголами to have, to take, to give: to have a cold, to have a good time, to have a rest, to take a shower, и др.:

  I ***had a long talk*** with my supervisor.

Таблица 6. Употребление артиклей с нарицательными существительными

	a/an	Ø	the
объект не известен т.к. • упоминается впервые	• **единственный объект** They have built ***a*** (new) ***road*** in our village. There is ***a bridge*** not far from here. This is ***a tunnel***. It is ***a construction site***. My friend is ***a designer***. My friend, ***a designer***, lives in Riga.	• **множество объектов:** They built ***houses*** in Belarus. There are ***bridges*** not far from here**.** These are modern ***tunnels***. They are construction ***sites***. My friends are ***designers***. My sons, ***designers***, are here. • **вещество** First they put (some) ***gravel*** and ***sand*** into the mixer. The new bridge is made of ***steel*** and ***concrete***.	—

объект известен т.к. • упоминается не впервые • речевая ситуация определяет объект как известный • имеется определение, выделяющее объект из класса однородных объектов • является уникальным и, следовательно, известным для говорящего. • имеется в виду весь класс объектов определённого рода	—	—	They have built a new road. ***The road*** is quite expensive. ***The central avenue*** runs from east to west. Put ***the sand*** into ***the mixer*** [at a construction site]. This is ***the road*** I told you about yesterday. At the exhibition we shall demonstrate ***the most modern equipment***. ***The Sun*** is the center of our planetary system. ***The house*** is a place for living. We have excellent jobs for ***the young***.

Ø (значимое отсутствие артикля):

- если существительное имеет определение, выраженное притяжательным, указательным, вопросительным или неопределённо-личным местоимением, количественным числительным, притяжательным падежом существительного:

This is ***our*** University.
This lecture hall is the largest.
What lecture is the most interesting?
Some classes were held in the lab.
Mary's course paper is the best.
We have ***two*** lectures today.

- если за существительным следует количественное существительное:

We shall have our lecture in room 37.

- с существительными – названиями наук:

His favorite subject is ***physics***.

- с названиями дней недели, месяцев, времён года:

On ***Friday*** the equipment will be installed.

- с именами собственными, названиями городов, стран, континентов, а также с именами и фамилиями людей:

Peter Ford is from ***Moscow***.

- в некоторых устойчивых словосочетаниях: at night, at home, at work, from time to time, by air, to have dinner, to go home и др.:

The turbine will be sent ***by air***.

The:

- с именами собственными:

– названиями некоторых стран и городов

The United States is situated in North America.

– названиями сторон света

The Baltic states are to ***the north*** of Belarus.

но: from east to west, from north to south.

– обозначениями семьи в целом

The Browns have been working in construction for a century.

1.4. Функции существительных в предложении.

Существительные могут выполнять в предложении следующие функции (см. табл. 7).

Таблица 7. Функции существительных в предложении

	Функция	Пример
1.	Подлежащее **(subject)**	The ***house*** is large and comfortable. Дом велик по размерам и удобен.
2.	Часть сказуемого **(part of a predicate)**	It is a modern ***house***. Это современный дом.
3.	Дополнение **(object)**	They are building a ***house***. Они строят дом.
4.	Определение **(attribute)**	She designed residence ***house*** interiors. Она проектировала интерьеры жилых зданий.
5.	Обстоятельство **(adverbial modifier)**	She lives ***in a log house***. Она живёт в бревенчатом доме.

1.5. Суффиксы существительных.

V → N-or/-er (прибор, деятель): to mix→a mixer – мешалка
to contract→a contractor - подрядчик

V → N-ion (действие): to act→an action – действие
to examine→an examination – экзамен

V → N-ment (событие, действие): to arrange→arrangement – аранжировка

V → N-ent/-ant (деятель) to assist→assistant – помощник

V → N-ence/-ance (состояние) to assist→assistance – помощь

V → N-al (действие) to remove→removal – удаление

V → N-ure (абстр. сущ.) to press→pressure – давление

N → N-ship (абстр. сущ.) a fellow→fellowship – членство

A → N-th wide→width – ширина

A → N-ness wet→wetness – влажность

A → N-(i) ty dense→density – плотность

Упражнения

I. Распределите следующие существительные по рубрикам таблицы.

Minsk, a student, equipment, water, a point, space, a physicist, architecture, a device, sand, concrete, matter, Belarus, Mr. Smith, an advantage, time, soil, a building, cement, a thought, thinking, a bridge, a reflection, temperature, pressure, a crane, a vehicle, an architect, wood.

Собственные	Конкретные исчисляемые	Конкретные неисчисляемые	Абстрактные исчисляемые	Абстрактные неисчисляемые
Minsk	a student	water	a point	space

II. Прочитайте существительные в форме множественного числа, обращая внимание на произношение.

[s]	[z]		[iz]
subjects	terms	degrees	houses
achievements	fields	features	bridges
accidents	inventions	engineers	sciences
marks	reasons	lorries	branches
scientists	constructions	motorways	advantages
sites	tunnels	abilities	sources
students		buildings	distances
cracks		supplies	changes

III. Образуйте формы множественного числа от следующих существительных:

a) physicist, architect, test, method, system, road, highway, size, introduction, plant, temperature;

b) ability, lorry, city, clay, waterway, country, opportunity, trolley, property, territory, story, supply, ray;

c) stress, finish, bench, polish, cross, varnish, arch, torch;

d) photo, kilo, potato, piano, tomato, grotto, fresco;

e) shelf, knife, roof, life, wife, motif;

IV. Завершите таблицу форм единственного и множественного числа.

Singular	***Plural***	***Singular***	***Plural***
particle	particles	workshop	
	devices		shelves
plan		improvement	
	industries		components
photo		equation	
object		property	

V. a) Замените существительные с предлогом ***of*** *формой притяжательного падежа.*

*Model***:** *The study of my father.→*

My father's study.

1. The birthday of my brother. 2. The new dictionary of the student. 3. The question of the teacher. 4. The books of the boys. 5. The crew of the ship. 6. The order of the commander-in-chief. 7. The new house of my brother-in-law. 8. The speech of the President. 9. The answers of the students. 10. The streets of our city. 11. The plan of the architect. 12. The architectural image of Minsk. 13. The boundaries of the city. 14. The life of the student. 15. The opinion of the chief engineer. 16. The program of two months. 17. The decision of the government.

b) Замените форму притяжательного падежа существительным с предлогом ***of.***

*Model***:** *The doctor's address. →*

The address of the doctor.

1. The chief’s instructions. 2. My elder sister's son. 3. The students' textbooks. 4. The teacher's new book. 5. The dean's opinion. 6. His friends' cars. 7. The girl's new computer. 8. My younger sister's profession. 9. The teachers' holiday. 10. The country's best theatre. 11. My friend's parents. 12. My friends’ arrival. 13. My collegue’s hobby. 14. Three weeks’ holiday. 15. The country’s economy.

VI. Вставьте артикли ***a/an, the*** *там, где это необходимо.*

1. There is … hostel opposite … University. 2. … most popular sport in our country is football. 3. I like … chemistry better than … physics. 4. … last night … moon was shining brightly. 5. … Nile flows into … Mediterranean. 6. My younger sister's husband is … accountant. 7. Don't sit on … grass. It's very wet. 8. … Europe and … America are separated by … Atlantic Ocean. 9. … London is … largest city in … England. 10. My mother is … engineer. 11. She is studying … hydraulics at the University. 12. I am going to … United States … next year. 13. … St. Petersburg was founded on … banks of … Neva by Peter … Great. 14. … winter begins in … December. 15. There is …

power plant not far from our … city. 16. … power plant is … largest in our country. 17. … Browns spend their holidays in … Italy. 18. His friend is such … good civil engineer. 19. … room 37 is on … 3d floor. 20. … February is … shortest month of the year.

VII. Определите функции существительных в предложении.

1. Concrete is a mixture of cement, water and aggregate. 2. Aggregate is composed of rock particles. 3. Vehicles, their drivers and passengers are carried inside double-deck wagons. 4. In the event of emergency or train breakdown the passengers will leave the train through the cross-passage into the service tunnel. 5. The service tunnel also ventilates the train tunnels with fresh air. 6. Folkstone is a seaside town which is also a cross-channel port. 7. George Stephenson is a railway locomotive inventor and pioneer of the railway. 8. The properties of materials are affected by solar radiation. 9. Scientific and engineering progress opens up wide prospects before man. 10. The driver has changed the direction of the motion of the bus.

VIII. Найдите существительные в приведённом ниже списке:

manufacture, transition, variable, wider, inventor, satisfy, effective, dependence, mean, affected, relationship, economics, opposite, emergency, lengthen, relevance, investigation, fitness, roadless.

2. Местоимение (The Pronoun)

2.1. Определение.

Местоимение – часть речи, употребляемая вместо существительного при необходимости его повторного употребления.

2.2. Классификация.

Местоимения представлены в языке большим разнообразием классов, перечисленных в таблице 8.

Таблица 8. Типы местоимений (Pronoun types)

1. Личные		**2. Притяжательные**		**3. Возвратные и усилительные**
Именит. п.	Объектн. п.	Присоед.	Абсолютн.	
I	me	my	mine	myself
You	you	your	yours	yourself
He She It	him her it	his her its	his hers its	himself herself itself
We	us	our	ours	ourselves
You	you	your	yours	yourselves
They	them	their	theirs	themselves
4. Указательные		this/these, that/those, such, the same		
5. Вопросительные		Who, Whom, Whose, What, Which		
6. Относительные и соединительные		who, whose, what, which, that		
7. Взаимные		each other, one another		
8. Неопределённые		some, any, one, all, each, every, other, another, both, many, much, little, a little, few, a few, either, neither, no, none		

2.3. Употребление местоимений в предложении.

Каждый из типов местоимений может использоваться в предложении особым образом.

2.3.1. Личные местоимения.

Личные местоимения имеют 2 формы. Именительный падеж используется, если местоимение выполняет роль подлежащего, объектный падеж – роль дополнения:

He is a good engineer.

Он – хороший инженер.

The teacher explained the rule to ***him***.

Учитель объяснял ему это правило.

Личное местоимение ***it*** (он, она, оно) необходимо отличать от других омонимичных форм:

а) личное местоимение

The bridge is quite new. ***It*** was built in 1996.

Мост довольно новый. Он был построен в 1996 году.

б) неопределенное местоимение в безличных предложениях

It is necessary to build a new airport.

Необходимо построить новый аэропорт.

в) указательное местоимение

We have designed a new railway terminal. ***It*** was a challenge for our firm.

Мы построили новый железнодорожный вокзал. Для нашей фирмы это была трудная, но интересная задача.

2.3.2. Притяжательные местоимения.

Притяжательные местоимения преимущественно используются как определения к существительному:

Our task is difficult. - Наша задача трудная.

Если существительное опускается, используется абсолютная форма:

His results are good, but ***yours*** are better.

Его результаты хорошие, но ваши – лучше.

The car is ***mine.*** – Эта машина – моя.

2.3.3. Указательные местоимения.

Указательные местоимения в основном используются как определения:

He built ***these*** tunnels.

Он построил ***эти*** тоннели.

That equipment must be installed as quickly as possible.

To оборудование должно быть установлено как можно скорее.

Указательное местоимение ***that (those)*** необходимо отличать от других омонимичных форм:

а) указательное местоимение that/those (тот, та, то, те)

That bridge is more suitable.

Этот мост более подходящий.

б) слово, заменяющее предшествующее существительное

Some ***properties*** of air are similar to ***those*** of water.

Некоторые ***свойства*** воздуха аналогичны ***свойствам*** воды.

в) союз, вводящий придаточные дополнительное и подлежащее

We know ***that*** he is a good engineer.

Мы знаем, ***что*** он хороший инженер.

That these students will become good specialists is certain.

То, что эти студенты станут хорошими специалистами, не вызывает сомнения.

г) союзное слово, вводящее придаточное определительное предложение

Here is the house ***that*** was built by our company in 2000.

Вот дом, ***который*** был построен нашей компанией в 2000 году.

д) элемент конструкции “It is … that”

It is the airport ***that*** must be shown to the expert.

Именно этот аэропорт следует показать эксперту.

2.3.4. Неопределённые местоимения.

Some/any (немного, некоторое количество, несколько) и их производные ***something/somebody/someone, anything/anybody/anyone***

Таблица 9. Употребление местоимений *some/any* и их производных

	Some+	*Any+*
В утвердительном предложении.	They got ***some*** new trucks. - Они получили несколько новых грузовиков.	а) В значении «любой». You can take ***any*** truck you like. - Вы можете получить любой грузовик, который вам нравится. б) в условных предложениях. If ***anything*** happens, our mechanic will help you. – Если что-нибудь случится, наш механик поможет вам.
В отрицательном предложении.	—	They didn't get ***any*** new trucks. - Они не получили новых грузовиков.
В вопросительном предложении.	В побудительных и специальных вопросах. May I ask you ***some*** questions? – Можно задать несколько вопросов? Where can I get ***some*** water? – Где можно взять немного воды?	В общих вопросах. Did they get ***any*** new trucks? - Они получили новые грузовики? Is ***anyone*** ready to answer the question? – Кто-нибудь готов ответить на вопрос?

Many/ much, few/ little (много, немного, мало)

A few/ a little (немного, несколько = достаточно)

Таблица 10. Употребление местоимений *many/ much, (a)few/(a) little*

С исчисляемыми существительными	С неисчисляемыми существительными
Many bridges across the river are of modern design. - Многие мосты через	You need ***much*** patience to learn all these words. - Чтобы выучить эти

эту реку сделаны по современным проектам.	слова, вам надо много терпения.
There are ***few*** tunnels in this part of the country. - В этой части страны имеется мало тоннелей.	There is too ***little*** water in the mixture. – В растворе слишком мало воды.
We have ***a few*** tasks to fulfill. - Нам надо выполнить несколько заданий.	Add ***a little*** water to the mixture. - Добавьте в смесь немного воды.

One (все, включая говорящего)

One should attend all English lessons.

Следует посещать все уроки английского языка.

One must perform ***one's*** task.

Надо выполнять свое задание.

Неопределенное местоимение ***one*** необходимо отличать от других омонимичных форм:

а) числительное

The workers have unloaded only ***one*** lorry.

Рабочие разгрузили только ***один*** грузовик.

б) слово-заменитель

New ***engines*** are more efficient than the old ***ones***.

Новые ***двигатели*** производительнее старых.

Упражнения

I. Найдите местоимения и определите их функции в предложении. Переведите предложения.

1. She translated this text without any mistakes. 2. Everybody considers his invention useful. 3. If your car breaks down, you may use mine. 4. They will be glad to explain these rules to you. 5. Your task is rather complicated but it should be done as soon as

possible. 6. Scientists knew little about those phenomena before his discovery. 7. I can repair this device myself. 8. We obtained this substance in our laboratory. It will be used in our experiments. 9. Nobody could give such information to us. 10. You have added too much water to the concrete. It will not harden. 11. Everyone knew that the best design was hers. 12. They offered me any help in my research. 13. Both buildings were designed by the same architect. 14. If you have few instruments, we can give you another laboratory. 15. The students made all measurements and calculations themselves.

II. Вставьте местоимения ***much/many, little/few, a little/a few.***

There are ... high buildings in the center of Minsk. 2. Do you know ... or ... about your future profession? 3. He has … knowledge of the subject because he reads a lot. 4. You will require … facts to prove your theory. 5. In the library we have only … books on this problem. 6. They gave us very … information about the new material. 7. A young engineer has … opportunities to find a good job. 8. The student was asked only … extra questions at the exam. 9. I shall be ready in a minute. I need … time to review the words. 10. Are there … computers in your laboratory? 11. Our University has … facilities for sport. 12. Can you give me … time to complete the experiment? 13. He said only … sentences about his new project. 14. The new design still needs … improvement. 15. The new railway station building should fulfill … practical as well as expressive requirements of civilized people. 16. You can add only … water in the mixture to make concrete harder. 17. I need … nails to fix this small picture on the wall. 18. If you apply … glue the box can be broken.

III. Вставьте местоимения ***some, any, no*** *или их производные.*

1. If there are … words you don’t know, you may use a dictionary. 2. Do you have … work to do? 3. The teacher explained the new task very clearly and the students had … questions. 4. Are there … explanations of this phenomenon? 5. You may employ … methods to solve this complex problem. 6. Would you like to visit … research

laboratories? 7. There was … opportunity to construct the bridge without new materials. 8. We could get there only by ferry because there was … tunnel under the channel at that time. 9. If you have … to read, I can offer you some English newspapers. 10. It seems that he knows … important about the test results. 11. We didn't find out … new about the substance properties during the experiment. 12. The architect wanted to change … in his project. 13. The road engineers will have to do … with this damaged part of the highway. 14. Is there … you can improve in your report?

IV. Определите, в каких предложениях ***it*** *является личным местоимением.*

1. Concrete is used for building bridges because it is rigid and durable. 2. It is interesting to study foreign languages. 3. A new tunnel was built in the region. It is the longest in Europe. 4. It is difficult to translate this text. It has a lot of special terms. 5. It is necessary to test the engine. It is of new design. 6. The road needs reconstruction. It was damaged by a heavy flood. 7. It was important to replace the heating system. It is old and unreliable. 8. The temperature should be maintained at the same level all the time. It is essential for our experiment. 9. The research was carried out in our laboratory. It was a success.

V. Определите, в каких предложениях ***that*** *является указательным местоимением.*

1. The capacity of new power stations is much higher than that of the old ones. 2. That highway was reconstructed some years ago. 3. The engineer was quite sure that the strength of that material could be improved. 4. That the mechanic didn't check the break system is impossible. 5. That mechanic can check the oil level in your car engine. 6. The density of wood is less than that of concrete. 7. The details that have been damaged should be replaced immediately. 8. Nobody was responsible for that accident. 9. That air conditioning system will be installed in our laboratory.

VI. Определите, в каких предложениях ***one*** *является местоимением.*

1. One should study a lot to become a good engineer. 2. New measuring instruments are more accurate than the old ones. 3. One must prove one's theory with convincing facts. 4. One of the students tested a new method of concrete mixing. 5. One should work at the construction site at least one or two years. 6. After the road pavement was improved one can easily drive at high speed. 7. Sometimes one faulty detail can cause damage of the whole structure. 8. Diesel engine is more economical than petrol one. 9. One must observe safety rules. 10. We shall repeat one of those experiments. 11. One can use concrete and glass in the airport design.

3. Прилагательное (The Adjective)

3.1. Определение.

Прилагательные – класс слов, обозначающих свойство, качество или отношение: long – длинный reliable – надёжный
expensive – дорогой heavy –тяжёлый

3.2. Категории прилагательного.

3.2.1. Категория сравнения.

Многие прилагательное имеют 3 формы: положительную, сравнительную и превосходную.

Таблица 11. Степени сравнения прилагательных (Degrees of comparison)

Структурные типы прилагательных	Положительная степень	Сравнительная степень	Превосходная степень
1. Односложные и двусложные	small large big easy	small***er*** larg***er*** bigg***er*** easi***er***	***the*** small***est*** ***the*** larg***est*** ***the*** bigg***est*** ***the*** easi***est***
2. Многосложные*	important effective	***more*** important ***more*** effective	***the most*** important ***the most*** effective
3. Исключения	good bad much/many little far	better worse more less farther/further	the best the worst the most the least the farthest/the furthest

**Примечание:* Некоторые двусложные прилагательные могут образовывать степени сравнения обоими способами:

simple – simpl***er/more*** simple – the simpl***est/the most*** simple

narrow – narrow***er/ more*** narrow – the narrow***est/ the most*** narrow

3.3. Употребление прилагательных в предложении.

Таблица 12. Сравнительные конструкции

As…as – такой же..., как…,	English is as important as chemistry. Английский язык так же важен, как химия.
As high as 2 m Высотой 2 метра As wide as 5 km Шириной 5 км As heavy as 8 kilos Весом 8 кг As long as 4 cm Длиной 4 см	The tower is ***as high as*** 83 m. Башня имеет высоту 83 м. The highway is ***as long as*** 25 km. Эта магистраль имеет длину 25 км.
Twice as… as – в два раза	Oil is ***twice as*** expensive ***as*** it was two years ago. – Нефть стоит в два раза дороже, чем два года назад.
Three times as … as - в три раза	Our University is ***three times as*** big ***as*** yours. – Наш университет в три раза больше, чем ваш.
The same as – такой же…,	He got ***the same*** result ***as*** me. – Он получил такой же результат, как и я.
Not as (so)…as –не такой, как	Timber is ***not as strong as*** concrete. Дерево не такое прочное, как бетон.
>***more… than*** – больше, чем	I know ***more*** English words ***than*** you. Я знаю больше английских слов, чем ты.
<***less … than*** – меньше, чем	We spent ***less*** time on the experiment ***than*** you. – Мы потратили на эксперимент меньше времени, чем вы.
old***er than*** – старше, чем …	My brother is ***older than*** me. – Мой брат старше, чем я.
more beautiful ***than*** – красивее, чем…	Our town is ***more*** beautiful ***than*** yours. Наш город красивее, чем ваш.
The…, the… - чем …, тем	***The more*** expensive the car, ***the better*** it is. – Чем дороже машина, тем она лучше.

3.4. Суффиксы прилагательных.

V → **A** ive — to act → active – активный

A ble/ible — to rely → reliable – надёжный

to permit → permissible – допустимый

V → A ant/ent — to persist → persistent – настойчивый

N → A ous — norm → enormous – огромный

N → A ful/less — power→powerful/ powerless – мощный/беспомощный

N → A ic — dynamo → dynamic – динамичный

N→ A al — nation → national – национальный

Упражнения

I. Переведите словосочетания, обращая внимание на степени сравнения прилагательных.

the most dangerous road	a more careful driver
a shorter distance	further development
the most interesting solution	a more crowded street
the happiest people	a cheaper source of power
the coldest season of the year	the best quality

II. Образуйте от прилагательных сравнительную степень и переведите словосочетания.

suitable equipment	a difficult task
clean air	an old device
an advanced technology	a heavy vehicle
a smooth surface	valuable goods
convenient traffic	qualified specialists
a short report	high standards

III. Образуйте от прилагательных превосходную степень и переведите словосочетания.

a great invention	a warm season
an interesting experiment	an outstanding scientist
available building materials	skilled engineers
an independent decision	a secure structure

IV. Заполните таблицу соответствующими формами.

Broad		
	harder	
		the most common
	drier	
Narrow		
		the closest
	more powerful	
Simple		
		the flattest
Successful		

V. Переведите на русский язык, обращая внимание на сравнительные конструкции.

1. The profession of a teacher is as interesting as that of an engineer. 2. The book is as interesting as the film. 3. July is as warm as August. 4. This device worked twice as long as that one. 5. Gas is not so expensive as oil. 6. The road bridge is not so old as the rail bridge. 7. You'll take the same exams as us. 8. The bridge is as long as 2 km and as wide as 30m. 9. The city centre is more crowded than the suburbs. 10. This engine is more reliable than the previous one. 11. The avenue is wider than the street. 12. The Baltic Sea is colder than the Black sea. 13. The younger you are, the easier it is to learn.

14. The less luggage you take while travelling, the better. 15. The longer we waited, the more impatient we became.

VI. Раскройте скобки, употребив нужную форму прилагательного.

1. Moscow is (large) than Minsk. 2. December the twenty second is (short) day of the year. 3. This is (beautiful) house in the center of the city. 4. He is (good) student of the group. 5. Their house in the country is (comfortable) than their flat in the town. 6. Cities in Scotland are (small) than cities in England. 7. His method of investigation is (efficient) than the old one. 8. The British Parliament is (old) in the world. 9. The (little) you eat, the (quick) you lose weight. 10. The (quick) you translate from English, the (easy) you can get the necessary information. 11. The (much) we speak English the (good).

VII. Сравните различные материалы и предметы. Составьте предложения.

*Model A***:** a car/ a bus (small) –

A car is small***er than*** a bus.

1. glass/wood (brittle);
2. steel/gold (expensive);
3. rubber/steel (flexible);
4. wood/iron (hard);
5. a car/ a bicycle (noisy);
6. wood/concrete (heavy);
7. stone/wood (durable);
8. concrete/plastic (rigid);
9. glass/plastic (light);
10. paper/brick (combustible).

*Model B***:** Object A is 3.25 m long. Object B is 1.25 m long. –

Object A is ***2 m longer than*** object B.

1. Building A is 25 m high. Building B is 28 m high. 2. Road A is 10 m wide. Road B is 17 m wide. 3. Product A is as expensive as $57. Product B is as expensive as $114. 4. Canadian National Tower is as high as 553.5 metres. Eiffel Tower is as high as

320,75 m 5. Empire State Building in New York is as high as 449 metres. Sears Tower in Chicago is as high as 520 metres. 6. Panama Canal is as wide as 150m. Suez Canal is as wide as 200m. 7. Canadian Pacific Railroad is as long as 4,633 km. Trans-Siberian Railroad is as long as 9, 000 km.

VIII. Сравните возраст и население городов, используя различные сравнительные конструкции. Ответьте на вопросы.

1. Minsk and New York;
2. New York and Moscow;
3. Moscow and Minsk;
4. Washington and Minsk;
5. Minsk and your native town;
6. Washington and your native town.

City	Year of foundation	Population	
Minsk	1067	1.8 mln	
Moscow	1147	8.305 mln	
Washington	1791	0.580 mln	
New York	1626	8.1 mln	
Your native town			

1. What city is the oldest?
2. What city is the youngest?
3. What city is the largest?
4. What city is the smallest?

4. Числительное (The Numerals)

4.1. Определение.

Числительные – класс слов, обозначающих количество объектов или их порядковый номер.

4.2. Классификация.

Существуют 2 типа числительных: количественные и порядковые.

	Количественные числительные	*Порядковые числительные*
1	one	the first
2	two	the second
3	three	the third
	four	the fourth
5	five	the fifth
6	six	the sixth
7	seven	the seventh
8	eight	the eighth
9	nine	the ninth
10	ten	the tenth
11	eleven	the eleventh
12	twelve	the twelfth
13	thirteen	the thirteenth
20	twenty	the twentieth
21	twenty-one	the twenty first
30	thirty	the thirtieth
40	forty	the fortieth
53	fifty-three	the fifty third
100	one hundred (a hundred)	the one hundredth
101	one hundred and one	the one hundred and first

1,000 – one thousand (a thousand);

1,567 – one thousand five hundred **and** sixty seven;

2,148,506 - two million one hundred **and** forty-eight thousand five hundred **and** six;

1,000,000,000 – a (one) milliard (Brit.), a billion (Amer.).

4.3. Чтение дробей.

Простые дроби	Десятичные дроби
$\frac{1}{2}$ – a half; $\frac{1}{3}$ – a third; $\frac{1}{4}$ – a (one) quarter (a fourth); $\frac{2}{3}$ – two third**s**; $\frac{3}{4}$ – three-quarter**s**; $\frac{5}{8}$ – five-eight**s**; $1\frac{1}{2}$ – one and a half; $5\frac{3}{8}$ – five and three eighth**s**;	0.5 – nought point five or point five; 0.53 – point five three; 23.41 – twenty three point four one; 34.56 – thirty four point fifty six; 46.758 – forty six point seven five eight; *Примечание:* Дробная часть в английском языке отделяется точкой (point) (2.3). Запятой отделяются тысячи и миллионы (1,052,388).

4.4. Чтение цифры 0.

–zero при обозначении температуры:

-3° – three degrees below zero

–**0[ou]** при обозначении номеров телефонов:

367705 – three six double seven o five

–nought, **zero** или **0** в десятичных дробях:

0.05 point zero five

–nought – для обозначения баллов на экзамене:

I got nought out of ten.

–nil для определения счёта в спортивных играх: 3-0 three-nil

4.5. Хронологические даты.

In 1900 – in nineteen hundred; in 2000 – in twenty hundred;

In 1874 – in eighteen seventy-four;

In 1905 – in nineteen five *или* in nineteen (hundred) o [ou] five;

In 2002 - in twenty o [ou] two;

On the 11th of January, 1996 – on the eleventh of January, nineteen ninety-six;

September 1, 2005 – the first of September, twenty (hundred) and five.

4.6. Математические действия.

5+23=28 – five **plus** twenty-three is twenty-eight;

67-12=55 – sixty-seven **minus** twelve is (makes) fifty-five;

8×3=24 – eight **multiplied** by three is twenty-four or

eight **times** three is (is equal to) twenty-four;

18÷ 3=6 – eighteen **divided** by three is (equals) six;

$\sqrt{16}$ =4 – the square (second) root of 16 is 4;

$\sqrt[3]{9}$ – the cube root of nine;

$\sqrt[n]{12}$ – the n-th root of twelve ;

4^2 – four square (squared);

7^3 – seven cubed or seven to the power of three;

( ) – round brackets, parentheses;

A' – *A* prime; A'' - *A* second (double) prime;

P'_1 – *P* sub one prime; P prime sub one;

P_2 – *P* sub two; *P* second;

∞ – infinity;

$U=x^2$ – U is equal to (equals) the second power of x;

$F=m\cdot a$ – Force is equal to mass multiplied by acceleration;

$Y=f(x)$ – *y* is a function of x;

$\frac{1}{2}bh$ – a half of the product *bh*;

$U=\frac{1}{1+x^2}$ – U is equal to the ratio of one to one plus *x* square;

$d^2=(x_1-x_2)^2+(y_1-y_2)^2$ – d square is equal to, round brackets opened, *x* sub one minus *x* sub two, round brackets closed, square, plus, round brackets opened, *y* sub one minus *y* sub two, round brackets closed, square;

$\int_n^m$ – the integral from *n* to *m*; the integral between the limits *n* and *m*;

$L=\sqrt{R^2 \pm x^2}$ – capital *L* equals the square root out of capital *R* square plus minus *x* square;

Упражнения

I. Произнесите и напишите по-английски следующие цифры:

28; 359; 6,924; 73,861; 846,735; 3,785,502; 92,586,245; 697,573,121; $\frac{1}{3}$; 0.3; 0.001; $\frac{2}{5}$; 2.5; $\frac{1}{8}$; 0.08; $3\frac{6}{9}$; 6.78; 25.745; 6^2; 45^3; $73\frac{3}{8}$; $\sqrt{27}$; $\sqrt[3]{96}$; $\sqrt[n]{54}$; X′; Z″;

II. Произнесите и запишите цифрами следующие числительные и даты:

a) thirty-three; ninety-seven; one hundred and seventy-four; eight hundred and one; nine hundred and thirteen; fifty-two thousand three hundred and forty-nine; seven hundred and ten thousand six hundred and twenty-three; one million seven hundred and fifty four thousand three hundred and twenty one; three thousand four hundred and two;

b) point nought two; a half; two thirds; five eighths; one point eight two six; three and three quarters; eight and seven ninths; thirty-five point nought seven three; point six;

c) five squared; nine cubed; six to the power of four; seventy to the power of five;

d) the square root of ten; the cube root of ninety-one; the second root of sixteen;

e) January the first , eighteen fifty-six; October the twenty-first, eighteen thirty-three; May the ninth, nineteen forty-five; the tenth of March, eighteen hundred;

III. Назовите указанные действия и запишите результат:

1) 12×8= 2) 144÷12= 3) 0.5×6.23= 4) ⅞ - ⅝= 5) ⅔+¼×5²=

6) 28×3= 7) 3,546÷2= 8) 2.05+9.29= 9) 3/7 – 2/5= 10) 3³×7² - 5²=

11) 56+√16= 12) ³√9÷2= 13) 87.09+ 74.35= 14) 2/9×⅓= 15) (6²-2³)×7=

5. Глагол (The Verb)

5.1. Определение.

Глагол – часть речи, объединяющая слова, обозначающие действия, процессы, состояния и отношения:

to design – проектировать	to undulate – колебаться
to mix – смешивать	to exist – существовать
to depend – зависеть	to maintain - поддерживать

5.2. Классификация.

По своему значению и выполняемой функции в предложении глаголы делятся на:

- смысловые (to build- строить, to remain – оставаться, to do -делать)

  The engineer ***controls*** the construction work.

  Инженер контролирует строительные работы.

- вспомогательные (to be, to have, to do, will, shall, would, should)

  The engineers ***have*** developed a new turbine. (Present Perfect)

  Инженеры разработали новую турбину.

  The railway terminal ***will be*** reconstructed soon. (Future Indefinite)

  Железнодорожный вокзал скоро будет реконструирован.

- глаголы-связки (to be, to become, to get, to grow, to turn etc)

  He ***is*** a qualified engineer.

  Он – квалифицированный инженер.

- модальные глаголы (must, can, may, should, ought to, would, will, need)

  We ***must*** reconstruct the historic part of the city.

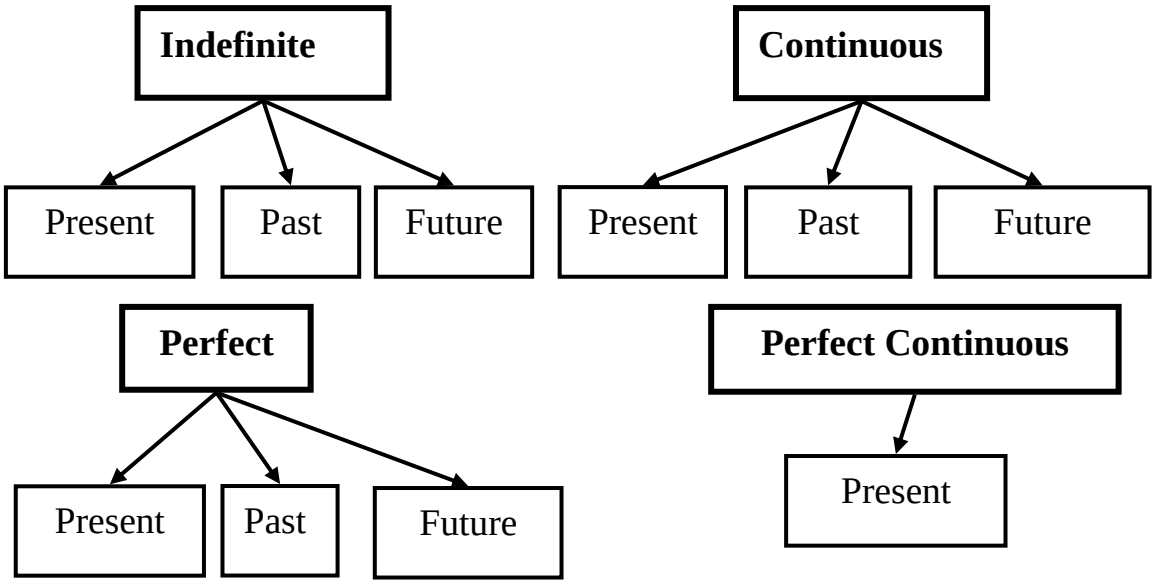
  Мы должны реконструировать историческую часть города.

5.3. Категории глагола.

Глагол несет информацию о времени и залоге.

5.3.1. Система английских времён (активный залог).

Система обозначения времени в английском языке включает 4 группы, каждая из которых объединяет 3 времени – настоящее, прошедшее, будущее.



Indefinite Tenses

Present Indefinite – наиболее распространённая в научном тексте форма, используемая для констатации фактов или обозначения повторяющихся действий в настоящем. Характерные обстоятельства: *generally, usually, every day/week/year, often, seldom и т д.*

These substances ***pollute*** the air.

Эти вещества загрязняют воздух.

They ***control*** this parameter every two hours.

Они контролируют этот параметр каждые два часа.

Past indefinite употребляется для обозначения однократного или повторяющегося действия в прошлом. Характерные обстоятельства: *yesterday, two days ago, last week, in 1990, often, seldom.*

They ***mixed*** sand and gravel in the right parts.

Они смешали песок и гравий в требуемых пропорциях.

Egyptians usually ***built*** their houses of stone.

Египтяне обычно строили дома из камня.

Last year we ***reconstructed*** the old ring road.

В прошлом году мы реконструировали старую кольцевую дорогу.

Future Indefinite употребляется для обозначения однократного или повторяющегося действия в будущем. Характерные обстоятельства: *tomorrow, next week/month, in 2008, in 8 years, soon.*

Next year we ***shall build*** a new bridge across the river.

В следующем году мы построим новый мост через реку.

Every year they ***will modernize*** 2 units of the power plant.

Каждый год они будут модернизировать по 2 блока электростанции.

Continuous Tenses

Present Continuous представляет действие, развёртывающееся в момент речи или в течение периода, рассматриваемого как актуальное настоящее.

I ***am writing*** an article now.

Сейчас я пишу статью.

He ***is designing*** a new theatre.

Он проектирует новый театр.

Примечание: ***Present Continuous*** может использоваться для обозначения ближайшего будущего.

We ***are taking*** part in a conference tomorrow.

Завтра мы принимаем участие в конференции.

Past и ***Future Continuous*** указывают на длительность протекания действия в прошлом и будущем. Характерные показатели: *from…till, all the evening.*

Yesterday from 5 till 7 they ***were taking*** an exam.

Вчера с 5 до 7 часов они сдавали экзамен.

When we come he ***will be working*** in his study.

Когда мы придём, он будет работать в своём кабинете.

Perfect Tenses

Present, Past и ***Future Perfect*** обозначают завершённые действия, результат которых наблюдается, соответственно, в настоящем, прошедшем и будущем. Характерные обстоятельства: *just, already, never, ever, by*… .

He ***has*** just ***completed*** his research.

Он только что закончил свое исследование.

He ***had*** already ***completed*** the experiment when his colleagues came.

Он уже завершил эксперимент, когда пришли его коллеги.

She ***will have completed*** the project by next Thursday.

Она завершит проект к следующему четвергу.

Упражнения

I. Найдите в предложениях сказуемые в Present, Past и Future Indefinite. Переведите предложения.

1. At the University the students learn many different subjects. 2. They moved into a new comfortable flat last year. 3. The process of reconstruction takes a lot of time and needs qualified workers. 5. These two forces acted in the same direction in our experiment. 6. The development of physics resulted in the appearance of today's cinema, television, radio and so on. 7. When you come to the laboratory tomorrow our collegues will be demonstrating the results of their experiments. 8. These forces will cause displacement of the body. 9. This young scientist made a great contribution to mathematics. 10. The scientist published the results of his investigations. 11. They determined the substance temperature before the test. 12. We shall discuss the new material properties at the next lecture.

II. Поставьте предложения в отрицательную и вопросительную форму.

1. He started his investigations of the properties of a new compound. 2. This plant will produce a new type of equipment. 3. The academic year consists of two terms. 4. The

Таблица 14. Времена группы *Indefinite* (Active)

	Present Indefinite	Past Indefinite	Future Indefinite
+	I (We, You, They) ***build*** houses. He (She, It) ***builds*** houses.	I (He, She, It, We, You, They) ***lived*** in Minsk. ***built*** houses.	I (He, She, It, We, You, They)***'ll*** ***live*** in Minsk. ***build*** houses.
-	I (We, You, They) ***don't build*** houses. He (She, It) ***doesn't build*** houses.	I (He, She, It, We, You, They) ***didn't live*** here. ***didn't build*** houses.	I (He, She, It, We, You, They) ***won't live*** here. ***build*** houses.
?	***Do*** I (we, you, they) ***build*** houses? ***Does*** he (she, it) ***build*** houses?	***Did*** I (he, she, it, we, you, they) ***live*** here? ***build*** houses?	***Will*** I (he, she, it, we, you, they) ***live*** here? ***build*** houses?

Таблица 15. Времена группы *Continuous* (Active): (to be+ Participle I)

	Present Continuous	Past Continuous	Future Continuous
+	He (She, It) ***is building*** a house. We (You, They) ***are building*** a house.	I (he, she, it) ***was building*** a house. We (you, they) ***were building*** a house.	I (he, she, it, we, you, they) ***will be building*** a house.
-	He (She, It) ***isn't building*** a house. We(You, They) ***aren't building*** a house.	I (He, She, It) ***was not building*** a house. We (You, They) ***were not building*** a house.	I (he, she, it, we, you, they) ***won't be building*** a house.
?	***Is*** he (she, it) ***building*** a house? ***Are*** we (you, they) ***building*** a house.	***Was*** she (I, he, she, it) ***building*** a house? ***Were*** we (you, they) ***building*** a house?	***Will*** he (I, she, it, we, you, they) ***be building*** a house?

Таблица 16. Времена группы *Perfect* (Active): (to have + Participle II)

	Present Perfect	Past Perfect	Future Perfect
+	He (she, it) ***has built*** the house. ***has translated*** the text I (you, we, they) ***have built*** the house. ***have translated*** the text.	I (he, she, it, we, you, they) ***had built*** the house by November. ***had translated*** the text when you came.	I (he, she, it, we, you, they) ***will have built*** the house by November. ***will have translated*** the text when you come.
-	He (she, it) ***hasn't built*** the house. ***hasn't translated*** the text. I (you, we, they) ***haven't built*** the house. ***haven't translated*** **the text.**	I (he, she, it, we, you, they) ***hadn't built*** the house by November. ***hadn't translated*** the text when you came.	I(he, she, it, we, you, they) ***won't have built*** the house by 2010. I(he, she, it, we, you, they) ***won't have translated*** the text by Monday.
?	***Has*** he (she, it) ***built*** a house? ***translated*** the text ? ***Have*** you (I, we, they) ***built*** the house? ***translated*** the text ?	***Had*** he (I, she, it, we, you, they) ***built*** the house by the end of the year? ***translated*** the text by Monday?	***Will*** I (he, she, it, we, you, they) ***have built*** the house…? ***have translated*** the text…?

Таблица 17. Времена группы *Perfect Continuous* (Active): (to have been + Participle I)

	Present Perfect	Past Perfect	Future Perfect
+	He (she) ***has been building*** houses since 1991. I (we, you, they) ***have been building*** houses for 15 years.	not used	not used

development of machine-tools accelerated the industrial revolution. 5. A lot of foreign citizens enter our University every year. 6. The stuff of the laboratory finished the work on the apparatus. 7. They will conduct the experiment in the best laboratory. 8. Our chief engineer spends much time on the site. 9. It took much time to cross the Atlantic in the 19th century. 10. The students of our department attend their lectures mostly in the morning. 11. The investors will furnish our laboratory with up-to-date equipment. 12. The scientist obtained similar results in all the experiments.

III. Поставьте глаголы в Present, Past или Future Indefinite. Переведите предложения.

1. The development of many sciences (to depend) on the knowledge of physical phenomena. 2. The workers (to complete) the construction of this modern house in a month. 3. During our last experiment we (to keep) the temperature at the point of 20 degrees. 4. Last century scientists (to make) a close study of the structure of natural rubber. 5. We (to conduct) the experiments in the laboratory when the new term begins. 6. Many factors (to influence) the intensity of this process. 7. All over the world architects widely (to use) concrete for bridge construction. 8. The street (to be) so narrow that we (to have) to widen it next year. 9. He (to be interested) in motor cars in his childhood. 10. The results of his last experiment entirely (to prove) his theory. 11. Everybody (to consider) his invention useless at that time. 12. Our power station (to produce) a great deal of electricity every year. 13. Some inventors (to suppose) that in the future we (to use) trains without drivers.

IV. Найдите в предложениях сказуемые в Present, Past и Future Continuous и переведите их. Сравните употребление времен групп Indefinite и Continuous.

1. They always test new equipment in their laboratory. 2. Don't enter. The engineer is testing the new equipment. 3. When the students arrived the professor was carrying out an experiment. 4. Our professor often carries out his experiments with his students' assistance. 5. The students of our group will be taking their English exam on Monday.

6. The students of our University usually pass their exams well. 7. He used some special instruments while he was repairing the new device. 8. He repaired the damaged device himself. 9. The members of the Students' Council discussed this question yesterday. 10. We were discussing our plans from 2 p.m. till 4 p.m. yesterday. 11. While we were taking measurements the engineer was making calculations. 12. At first we took measurements and then we made calculations. 13. The engineer was instructing the workers when the trucks brought cement to the site.

V. Поставьте предложения в отрицательную и вопросительную форму.

1. We are translating the article into Russian. 2. They are conducting an important experiment in the laboratory now. 3. He will be making his report at 2 o'clock tomorrow. 4. The designers were estimating the construction cost for a week. 5. The students are having their preliminary in English now. 6. The scientist is experimenting with new construction materials. 7. We were taking calculations for the new bridge during our summer practice. 8. The population of the city is steadily growing. 9. The workers will be unloading the trucks after lunch. 10. He is laying bricks very quickly and carefully.

VI. Поставьте глаголы в соответствующее время группы Indefinite или Continuous. Переведите предложения.

1. We (to translate) the article during the whole lesson yesterday. 2. We usually (to translate) texts using special dictionaries. 3. The students usually (to write) their final tests at the end of each term. 4. The students (to write) their final test. Keep silence.
5. When you (to come) in an hour we (to discuss) the results of the test. 6. I (to look) up the words in the dictionary while he (to read) the text. 7. The teacher (to explain) this grammar rule at the last lesson. 8. The teacher (to explain) the new grammar rule when I (to come) in. 9. During some decades of the last century scientists (to try) to explain this unusual phenomenon. 10. A true scientist always (to try) to explain unusual phenomena. 11. This plant (to produce) various kinds of instruments. 12. This plant (to produce) new

kinds of instruments every year. 13. Today scientists still (to look) for the new sources of energy.

VII. Найдите в предложениях сказуемые в Present, Past и Future Perfect и переведите их. Сравните употребление времен групп Indefinite и Perfect.

1. I finished school last year. 2. I have already finished school. 3. The students passed their first exam yesterday. 4. The students have passed their exams lately. 5. The students had passed the exam when the dean came. 6. Our family moved into a new comfortable flat two years ago.7. They have just moved into a new comfortable flat.
8. The scientific journal published this article last May. 9. The scientist has published the results of his investigations. 10. He will present his report at the end of the term.
11. He will have presented his report by the end of the term. 12. They didn't receive any positive results last time. 13. They haven't received any good results. 14. If the engineer makes all the necessary calculations he will start his experiment. 15. After the engineer had made all the necessary calculations he started his experiment. 16. Did they install the new equipment in the laboratory yesterday? 17. Have they installed the new equipment in the laboratory yet?

VIII. Переведите предложения, обращая внимание на различные способы перевода сказуемых в Perfect.

1. We have already mentioned these facts in our report. 2. The output of this factory has greatly increased recently. 3. The students had translated the text by the end of the lesson. 4. The lab assistant will have prepared the laboratory by the beginning of the experiment. 5. He has not seen his students since they graduated from the university.
6. Before the Exhibition closes a lot of people will have attended it. 7. The scientists have never referred to these phenomena. 8. They have worked for three years to improve the quality of the road materials. 9. After we had determined the main properties of the substance we could use it in our experiment. 10. The workers will have finished the construction when the commission arrives. 11. A number of scientists have

supported this suggestion. 12. The new construction method has attracted much attention. 13. This research combined with many others has provided valuable information on the problem in question. 14. You cannot use the tools until you have sharpened them. 15. We had analyzed a number of compounds before we could choose the most suitable one. 16. Scientists of different countries have dealt with the problems of air pollution for a long time.

IX. Поставьте глаголы в соответствующее время группы Indefinite или Perfect. Переведите предложения.

1. They (to obtain) the positive results after they (to install) more powerful equipment. 2. The mechanic (to repair) the engine before you come. 3. They (to carry out) the experiment successfully yesterday. 4. We (to return) just from the international conference. 5. The students (to determine) the melting point of the metal before they (to apply) it in their experiment. 6. He (to make) his first invention many years ago. 7. Our road engineers (to test) already the new paving materials. 8. By the time you complete the calculations we (to finish) our experiment. 9. He (to have) a bad road accident some years ago. 10. You may take your car. I (to check) the brakes and the oil level. 11. The workers (to mix) the concrete before they (to pour) it into the formwork. 12. Don't try to put the fire out until you (to call) for help. 13. The population of our city greatly (to increase) recently. 14. They (to reconstruct) the main road by the end of the next year. 15. The new road (to connect) the city centre with the industrial districts.

X. Найдите в предложениях сказуемые в Present, Past и Future Perfect Continuous и переведите их. Сравните употребление времен.

1. The engineer tests the apparatus every week. 2. He is testing the apparatus at the moment. 3. The engineer has been testing the apparatus for five hours. 4. We shall discuss the test schedule tomorrow. 5. We shall be discussing the test schedule at this time tomorrow. 6. We shall have been discussing the test schedule for an hour when you come. 7. The students were taking measurements when the teacher came. 8. The

students had been taking measurements for half an hour when the teacher came. 9. The students had taken measurements before the teacher came. 10. Hurry up! Everybody is waiting for you. 11. We had been waiting for ten minutes when you came. 12. Keep silence. The students are taking their English exam. 13. They still will have been taking the exam when you come.

5.3.2. Страдательный залог.

Кроме показателя времени сказуемое всегда имеет показатель залога: действительного (*active*) или страдательного (*passive*).

Если в позицию подлежащего помещен объект, реально контролирующий ситуацию, сказуемое оформляется в действительном залоге:

The firm ***built*** 3 houses in this village.

Фирма построила 3 дома в этой деревне.

Если в позицию подлежащего помещён объект, испытывающий воздействие извне, то сказуемое употребляется в форме страдательного залога:

3 houses ***were built*** by this firm.

3 дома было построено этой фирмой.

Форма страдательного залога:

to be + Participle II

Примечание: о причастии (*participle II*) подробнее см. в разделе 5.7.

Система английских времён для форм страдательного залога представлена в таблицах 18, 19, 20.

Существует несколько способов перевода сказуемых в сострадательном залоге:

1) возвратной формой глагола

Houses ***were built*** of wood at that time.

В то время дома ***строились*** из дерева.

2) неопределённо-личной формой глагола

Houses ***were built*** of wood at that time.

В то время дома ***строили*** из дерева.

3) сочетанием глагола быть и краткой формы причастия

These houses ***were built*** of wood.

Эти дома ***были построены*** из дерева.

4) глаголом в действительном залоге с использованием в качестве подлежащего существительного, которому в английском предложении предшествует предлог ***by***

These houses ***were built*** by a famous architect.

Эти дома ***построил*** известный архитектор.

The process ***was influenced*** by a number of factors.

На процесс ***воздействовал*** целый ряд факторов (Целый ряд факторов ***воздействовал*** на этот процесс).

5) посредством перемещения предлога, который в английском языке следует за сказуемым, на место перед существительным.

The necessary materials ***were sent for.***

Послали за необходимыми материалами.

This conference ***is*** often ***referred to.***

На эту конференцию часто ***ссылаются.***

Упражнения

I. Найдите в предложениях сказуемые в страдательном залоге и переведите их.

1. The engineers have improved the bridge construction methods. 2. The bridge construction methods have been improved by the engineers. 3. The law of gravitation was discovered by Newton. 4. Newton discovered the law of gravitation. 5. They will speak about his scientific paper at the end of the discussion. 6. His scientific paper will be spoken about at the end of the discussion. 7. Many factors influence the intensity of this process. 8. The intensity of this process is influenced by many factors.

Таблица 18. Времена группы Indefinite (Passive):(to be + Participle II)

	Present Indefinite Passive	Past Indefinite Passive	Future Indefinite Passive
+	The task ***is completed***. These houses ***are built*** of wood.	The task ***was completed*** last month. These houses ***were built*** of wood.	The task ***will be completed*** next month. These houses ***will be built*** of wood.
–	The task ***isn't completed***. These houses ***aren't built*** of wood.	The task ***wasn't completed*** last month. These houses ***were not built*** of wood.	The task ***won't be completed*** next month. These houses ***will not be built*** of wood.
?	***Is*** the task ***completed?*** ***Are*** these houses ***built*** of wood?	***Was*** the task ***completed*** last month? ***Were*** these houses ***built*** of wood?	***Will*** the task ***be completed*** next month? ***Will*** these houses ***be built*** of wood?

Таблица 19. Времена группы Continuous (Passive):(to be being+ Participle II)

	Present Continuous Passive	Past Continuous Passive	Future Continuous Passive
+	The text ***is being translated*** by our students.	The text ***was being translated*** when I came.	Not used
–	The text ***is not being translated*** by our students.	The text ***was not being translated*** when I came.	Not used
?	***Is*** the text ***being translated*** by our students?	***Was*** the text ***being translated*** when I came?	Not used

Таблица 20. Времена группы Perfect (Passive):(to have been + Participle II)

	Present Perfect Passive	Past Perfect Passive	Future Perfect Passive
+	The house ***has been built***. The text ***has been translated***. The houses ***have been built***. The texts ***have been translated***.	The house ***had been built*** by the end of the year. The texts ***had been translated*** by the end of the week.	The house ***will have been built*** by the next year. The text ***will have been translated*** by 5 o'clock.
–	The house ***hasn't been built.*** The text ***hasn't been translated.*** The houses ***haven't been built***. The texts ***haven't been translated.***	The house ***hadn't been built*** by the end of the year. The texts ***hadn't been translated*** by the end of the week.	The house ***won't have been built*** by the end of the year. The text ***won't have been translated*** by the end of the week.
?	***Has*** the house ***been built***? ***Has*** the text ***been translated***? ***Have*** the houses ***been built***? ***Have*** the texts ***been translated***?	***Had*** the house ***been built*** by the end of the year? ***Had*** the texts ***been translated*** by the end of the week?	***Will*** the house ***have been built*** by the end of the week? ***Will*** the texts ***have been translated*** by the end of the week?

9. We are carrying out a new research at the moment. 10. The new research is being carried out successfully. 11. The students were still conducting experiments when the bell rang. 12. The experiments were still being conducted in some laboratories when the bell rang. 13. People have known these construction methods for a long time. 14. These construction methods have been known by people for a long time. 15. The construction company built this comfortable block of flats some years ago. 16. This comfortable block of flats was built by the construction company five years ago.

II. Измените предложения по образцу.

*Model: We **have changed** the properties of the substance. -*

*The properties of the substance **have been changed**.*

1. They almost finished the construction of the tunnel. 2. We are discussing the results of the experiment. 3. They used concrete structures while erecting the new railroad bridge. 4. The lorries will bring cement to the construction site after lunch. 5. We don't use this kind of fuel because it is very expensive. 6. Have you already installed the new equipment? 7. They will complete the experiment in a month. 8. The workers have tunnelled the road under the Channel. 9. The mechanic will test the engine when he repairs it. 10. As a rule, numerous discoveries follow one great discovery. 11. We were finishing the experiment when the device broke down. 12. They also pay much attention to the quality of materials for road construction. 13. The students asked the engineers about the new construction technologies. 14. Machines of new generation will do all labour-consuming and dangerous work in the future. 15. The International Committee has rewarded our professor, for his outstanding theory. 16. The development of machine-tools accelerated the industrial revolution.

III. Переведите предложения на русский язык, обращая внимание на различные способы перевода страдательного залога.

1. This phenomenon has already been discussed. 2. The project will be completed in a month. 3. The nuclear theory has been greatly influenced by quantum mechanics.

4. A lot of time is given to the study of the new method of work. 5. A new deep-level tunnel was being completed in London. 6. In England many houses are heated with coal. 7. The sun is being used widely in direct solar energy heating equipment and also as a fuel in making electricity. 8. A number of alternatives has been proposed. 9. This process has been little studied. 10. Concrete structures have been used instead of bricks. 11. The temperature had been raised before the explosion occurred. 12. This term has been used for a long time. 13. They were given some data illustrating this phenomenon.

5.4. Суффиксы глаголов.

N → V ize a system→ to systematize – систематизировать

A → V fy clear→ to clarify – прояснить

A → V en wide → to widen – расширить

5.5. Многофункциональные глаголы.

Ряд глаголов (*to be, to have, to do, etc*) могут употребляться как смысловые, вспомогательные, модальные или глаголы-связки.

5.5.1. Глагол “to be”.

Таблица 21. Формы глагола “to be”

	Present	Past	Future
Indefinite	I ***am*** / he(she, it)***is*** / we(you, they)***are***	I (he, she, it) ***was*** / we(you, they)***were***	I (we) ***shall be*** he(she, it you they)***will be***
Continuous	I ***am*** / he(she, it)***is*** / we(you they)***are*** } ***being***	***was*** / ***were*** } ***being***	___
Perfect	he ***has*** / we ***have*** } ***been***	***had been***	***will have been***

Таблица 22. Функции глагола “to be”

Функция	Пример и перевод
Смысловой глагол to be + Prep +N to be + Adv.	The lecturer ***is*** *in the dean’s office*. Лектор (находится) в деканате. The lecturer ***is*** *here*. Лектор (находится) здесь.
Вспомогательный глагол a) страдательный залог to be+Participle II b) времена группы Continuous to be +Participle I	The lecturer ***was*** *asked* a question. Лектору был задан вопрос. The student ***is*** *making* notes of the lecture. Студент конспектирует лекцию.
Глагол- связка to be + Adj. to be + Infinitive	The lecture ***is*** *interesting*. - Лекция интересна. My aim ***is*** to enter the University – Моя цель – поступить в университет.
Модальный глагол to be + Infinitive	You ***are*** *to make* notes of the lecture. – Вы должны конспектировать лекцию.

5.5.2. Глагол “to have”.

Таблица 23. Формы глагола “to have”

	Present	Past	Future
+	I (we, you, they) ***have*** He (she, it) ***has***	I (you, she, he, it, we, they) ***had***	We (you, she, he, it, we, they) ***will have***
_	I (we, you, they) ***haven’t*** He (she, it) ***hasn’t***	I (you, she, he, it, we, they) ***hadn’t***	I (you, she, he, we, they) ***will not (won’t) have***
?	***Have*** I (we, you, they) ? ***Has*** he (she, it)…?	***Had*** you (I, she, he, it, we, they)…?	***Will*** you (I, she, he, it, we, they) ***have***…?

Таблица 24. Функции глагола “to have”

Функция	Пример и перевод
Смысловой глагол to have+N	They ***have*** *3 lectures* today. У них сегодня 3 лекции.
Вспомогательный глагол при образовании времён группы Perfect to have + Participle II	We ***have passed*** the exam. Мы сдали экзамен. When I called they ***had*** already ***got*** their credits in English. Когда я позвонил, они уже получили зачёт по английскому языку.
Модальный глагол to have+Infinitive	I will ***have*** *to take* 3 exams this summer. Я должен буду сдать 3 экзамена этим летом. He ***has*** to attend 3 lectures a day. Ему приходится посещать по 3 лекции в день.

5.5.3. Глагол “to do”.

Таблица 25. Формы глагола “to do”

	Present	Past	Future
+	I (we, you, they) ***do…*** He (she, it) ***does…***	I (you, she, he, it, we, they) ***did…***	We (you, she, he, it, we, they) ***will do***…
_	I (we, you, they) ***don’t*** do… He (she, it) ***doesn’t*** do…	I (you, she, he, it, we, they) ***didn’t*** do…	I (you, she, he, we, they) ***will not (won’t) do…***
?	***Do*** I (we, you, they) do…? ***Does*** he (she, it) do…?	***Did*** you (I, she, he, it, we, they) do…?	***Will*** you (I, she, he, it, we, they) ***do***…?

Таблица 26. Функции глагола “to do”

Функции	Пример и перевод
Смысловой глагол to do + N	We’ll ***do*** *the homework* in the morning. Мы сделаем домашнее задание утром.
Вспомогательный глагол а) отрицательная форма do + not б) вопросительная форма do + N V…	We ***don’t*** *have* classes in the morning. У нас нет занятий утром. ***Do*** the students have classes in the morning? У студентов есть занятия по утрам?
Усилительное do do +V	***Do*** explain it again. Пожалуйста, объясните это ещё раз.
Заменитель другого глагола	We don’t speak German, but he ***does***. Мы не говорим по-немецки, а он говорит.

Упражнения

I. Переведите предложения, обращая внимание на значения глагола ***to be.***

1. Our language laboratory is in the main building. 2. The conditions of the experiment are to be changed. 3. Tyres are made of rubber because it is flexible. 4. They were to repair the road before it is cold. 5. Where is the largest power plant in your country? 6. The scientists are to find new sources of energy. 7. Wood is mostly replaced by steel in bridge construction. 8. They are translating the article on modern paving materials. 9. The task of an architect is to design useful and beautiful buildings. 10. This work is coordinated by our foreign partners. 11. Petrol engines are usually lighter and smaller than diesel engines. 12. If the engine is broken, it is to be repaired or changed. 13. His invention is of great importance for the mankind. 14. The main task of the designer was to improve the stability of the structure. 15. The engineer was to estimate the cost of repairing the building.

II. Переведите предложения, обращая внимание на значения глагола ***to do****.*

1. The students often do their home task in the reading hall. 2. The strength of this new material does not depend on temperature changes. 3. What devices do you need for your experiments? 4. Energy is the ability to do work. 5. Do you remember the first bridge you built? 6. They began to do their test much earlier than we did. 7. Scientists and engineers do help one another in developing new construction materials. 8. Do these methods help you to improve the road pavement? 9. Metals conduct electricity better than the most of the non-metals do. 10. This type of asphalt did play an important part in road construction. 11. We'll do our best to improve the air conditioning system.
12. The mechanic didn't replace the fuel pump last week and I had to do it myself.

III. Переведите предложения, обращая внимание на значения глагола ***to have****.*

1. The students will have an opportunity to take part in the conference. 2. They have already obtained positive results. 3. They had to change the temperature of the substance. 4. You can have permanent work at the laboratory after you pass all your exams successfully. 5. The construction of the channel has been completed. 6. The old construction methods had some drawbacks. 7. We'll have to discuss this problem once more. 8. Have you found any new applications for this invention? 9. He has everything to realize his plans. 10. They had their laboratory furnished with modern devices. 11. You'll have to work hard to pass your exams. 12. The traffic safety has improved owing to the new road pavement.

IV. Поставьте предложения в вопросительную или отрицательную формы.

1. Our engineers developed a new technique of concreting. 2. This method of calculation is accurate. 3. The plant has produced an improved model of a crane. 4. Flyover crossings are very expensive. 5. The quality of paving materials greatly influences the traffic safety. 5. The scientists had to obtain a substance with better properties. 6. The commission usually conducts a thorough investigation after an accident. 7. The reconstruction of the historical centre is to be completed in two months.

5.6. Модальные глаголы (Modal Verbs)

5.6.1. Определение.

Модальные глаголы выражают не действие или состояние, а возможность, необходимость, желательность совершения действия (таблица 27).

5.6.2. Употребление.

В сочетании с инфинитивом смыслового глагола модальные глаголы образуют составное глагольное сказуемое.

Vm+Ind.Inf.

We ***can build*** the dam this year.

Мы можем построить плотину в этом году.

You ***must calculate*** the engine power.

Вы должны рассчитать мощность двигателя.

Модальные глаголы могут употребляться со сложными формами инфинитива:

Vm+Inf.Pass.

The dam can ***be built*** this year.

Плотина может быть построена в этом году.

Then water must ***be added***.

Затем необходимо добавить воду.

Vm+Cont.Inf.

He must ***be testing*** the new equipment.

Он, должно быть, проверяет новое оборудование.

Vm+Perf.Inf.

He must ***have added*** too much water.

Он, должно быть, добавил слишком много воды.

The well must ***have been developed***.

Скважина, должно быть, восстановлена.

He ***can't have stopped*** the experiment.

Не может быть, чтобы он остановил эксперимент.

Упражнения

I. Найдите в предложениях модальные глаголы. Переведите предложения.

A. 1. You should give examples that prove your theory. 2. Metal ladders must never be used near electric wires. 3. An architect today has to be an engineer too. 4. A number of

Таблица 27. Модальные глаголы (Modal Verbs)

Время / Модальность	Present Indefinite	Past Indefinite	Future Indefinite
Возможность ***can*** **to be able to**	We ***can*** build a new airport in Mogilev. Мы можем построить в Могилёве новый аэропорт.	We ***could*** build an airport in Mogilev last year. В прошлом году мы могли построить аэропорт в Могилёве.	We***'ll be able*** *to* build a new airport next year. В следующий году мы сможем построить новый аэропорт.
Разрешение ***may*** **to be allowed to**	You ***may*** build a new bridge. Вы можете построить новый мост.	You ***might*** build this bridge last year. Вы могли построить этот мост в прошлом году.	We'***ll be allowed to*** build this bridge next year. Нам разрешат построить этот мост в следующем году.
Долженствование ***must*** **ought to, should, needn't** **to be to** **to have to**	They ***must*** build this tunnel. Они должны построить этот тоннель.	He ***was to*** build a new house. Он должен был построить новый дом (по плану). He ***had to*** build a new house. Ему пришлось построить новый дом.	You'***ll have to*** build a new house next year. В следующем году тебе придётся строить новый дом.

substances can absorb considerable amounts of gases. 5. The students ought to observe all the University rules. 6. He could not complete his research in time as he worked very slowly. 7. The results of their research are to be discussed at the conference. 8. Energy can exist in many forms. 9. The road engineer is to mechanize and technically develop the road building operations. 10. In the modern world people cannot imagine their life without computers. 12. They will be allowed to participate in the discussion.

B. 1. He had to take part in the discussion. 2. His report is to be included in the program of the conference. 3. Unusual properties of this substance should be taken into consideration. 4. The importance of the problem needn't be explained. 5. These experiments can be carried out in the nearest future. 6. Your scientific opponent must be an authority on the subject. 7. The advice of professionals should not be ignored. 8. You will have to learn the new plastering technology. 9. They may continue their experiments in the best laboratories of the University. 10. You must mix the concrete well before you use it. 11. This power station will have to supply us with all the necessary energy.

II. а) Переведите предложения, обращая внимание на перевод эквивалентов модальных глаголов.

б) Употребите соответствующие модальные глаголы вместо эквивалентов.

Model: a) He ***was not able to*** *take part in the conference.* →

He ***could not*** *take part in the conference.*

b) The students ***are not*** *to be late.* →

The students ***must not*** *be late.*

c) They ***are allowed to*** *attend the lessons.* →

They ***may*** *attend the lessons.*

1. The students will be allowed to use this equipment in their research work. 2. Our workers were to transmit signals without any complex equipment. 3. They were not able to repair the device themselves. 4. The drivers are not allowed to park their cars in this place. 5. He was able to use the small store room as a laboratory. 6. I hope they will be able to reach the city before it is dark. 7. I think he will not be allowed to change the

subject of his research. 8. In two years in England you will be able to speak English fluently. 9. Electronic machines are to perform complicated calculations much quicker than people. 10. We were not able to install new devices because the laboratory was closed. 11. The students were not allowed to look up the words in their dictionaries.

III. Измените предложения так, чтобы они выражали прошедшее действие.

Model: a) All engineers ***must take part*** *in research work.* →

All engineers ***had to take part*** *in research work.*

b) You ***should check*** *the results of the tests.* →

You ***should have checked*** *the results of the tests.*

1. The engineer must improve the accuracy of his measurements. 2. They must maintain the same temperature during the experiment. 3. You may refer to the results of our experiment. 4. The equipment must be tested only after installation. 5. The compound can be obtained by three different ways. 6. The candidate for this position should know at least one foreign language. 7. You ought to pay more attention to your practical training. 8. They may continue their work in the best laboratory of the institute. 9. The laboratory assistant should know the temperature of the liquid. 10. The students ought to work hard to pass the examinations. 11. An electronic machine must be used for these calculations.

IV. Переведите предложения, обращая внимание на форму инфинитива после модального глагола. Укажите предложения, из которых ясно, что запланированное действие не имело места.

1. The engineer was to have changed the project. 2. The student was to carry out the experimental part himself. 3. The program was to have been approved at the last meeting. 4. The examination was to be held in the morning. 5. Our plant is to produce a new car next year. 6. These machines were to have been replaced by the most advanced equipment. 7. The road was to be reconstructed last year. 8. These new materials are to withstand higher temperatures. 9. Your investigation was to have attracted attention of all the scientists. 10. New types of plastics are to be obtained for the decoration technology. 11. These conditions were to have caused a change in the size of the body.

5.7. Причастие (The Participle)

5.7.1. Определение.

Причастие – производный от глагола класс слов, имеющий свойства глагола и прилагательного. Формы причастий и их использование в предложении приведены в табл. 28.

5.7.2. Независимый причастный оборот (Absolute Participle Construction).

Независимый причастный оборот есть механизм компрессии информации, обеспечивающий представление двух самостоятельных мыслей в пределах одного простого распространенного предложения, осложненного причастной конструкцией.

Независимый причастный оборот обладает следующими признаками:

1. имеет свое, независимое подлежащие;
2. всегда отделен от главного предложения запятой;
3. причастие функционально эквивалентно сказуемому полного предложения (переводится на русский язык сказуемым);

Our students studying chemistry, a lot of experiments are made in the laboratories.

Поскольку наши студенты изучают химию, в лабораториях проводится большое количество экспериментов.

Перевод независимого причастного оборота на русский язык зависит от места оборота в структуре предложения:

а) в начале предложения он переводится придаточным предложением с союзами *если, так как, поскольку, когда, после того, как.*

The translation of the text having been completed, I handed it to my teacher.

После того как перевод текста был закончен, я сдал его учителю.

б) в конце предложения он переводится простым предложением с союзами *а, и, притом, причем.*

We have three lectures today, ***the last being on physics***.

У нас сегодня три лекции, причем последняя по физике.

Таблица 28. Причастие (the Participle)

Формы:	Present Participle Active (Part. I)	Perfect Participle Active	Present Part. Passive	Past Participle (Participle II)
	V+ing ***Developing*** Развивающий ***Building*** Строящий	Having + V ed V 3f ***Having developed*** Развив/ разработав ***Having built*** Построив	Being + V ed V 3f ***Being developed*** Разрабатываемый ***Being built*** Строящийся	V+ ed V 3f ***Developed(having been developed)*** Развитой/ разработанный ***Built(having been built)*** Построенный
Функции: ●Определе-ние **(Attribute)**	**а) левое определение** the ***boiling*** water ***кипящая вода (кипяток)*** **б) правое определение** The man ***delivering the lecture*** is our professor. Человек, ***читающий лекцию***, — наш преподаватель.		**а) левое определение** the ***boiled*** water ***кипяченая вода*** **б) правое определение** **~ одиночное:** The method ***used*** is very effective. ***Использованный*** метод очень эффективен. **~ с зависимыми словами:** The house ***being built in our street*** will be the highest building in Minsk. Дом, ***возводимый на нашей улице,*** станет самым высоким зданием в Минске.	

●*Обстоя-тельство* **(Adverbial modifier)**	**Participle I** стоит в начале или конце предложения. Переводится **деепричастием или придаточным предложением.** ***Reading the newspaper*** I found an interesting article on the history of Belarus. - ***Читая газету,*** я нашел интересную статью по истории Белоруссии. ***Having read*** the article. I passed the journal to my colleague. - ***Прочитав*** статью, я передал журнал моему коллеге.	**Participle II** стоит в начале или конце предложения, часто с союзами **if, unless, when.** Переводится придаточным предложением. ***When asked,*** he answered at once. - ***Когда его спросили,*** он сразу же ответил.
●*Часть сказуемого* **(Part of a predicate)**	**Времена группы Continuous** **To be + Participle I** Pr. Part. Pass. He ***is translating*** the article. Он ***переводит*** статью. The article is ***being translated***. Статья ***переводится***.	**а) страдательный залог** **To be + Participle II** Pr. Part. Pass. The article ***was translated*** yesterday. Статью ***перевели вчера***. A new railway terminal ***is being built*** in Mink. В Минске ***строится*** новый вокзал. **б) времена группы Perfect** **To have (been) + Participle II** We ***have translated*** the article. Мы ***перевели*** статью. The article ***has been translated***. Статья ***переведена***.

Упражнения

I. Образуйте все возможные формы причастий от следующих глаголов.

to develop, to use, to discuss, to increase, to heat, to reduce, to complete, to fill, to invent, to solve, to translate, to give.

Model:

Verb	*Present Part. Active*	*Perfect Part. Active*	*Present Part. Passive*	*Past Participle/ Perfect Part. Passive*
to build строить	*building строя*	*having built построив*	*being built возводимый*	*(having been)built построенный/когда построили*

II. Переведите предложения, в которых причастие выполняет функцию определения. Обратите внимание на способы перевода причастий.

Participle I

1. A number of scientists taking part in this conference represented the same scientific school. 2. The new equipment is designed to satisfy the growing demands of the building industry. 3. Solving this problem it is desirable to consider the following equations. 4. The problem being considered in this paper is of great significance. 5. Cellulose is the most common of all naturally occurring organic substances. 6. Not all existing roads meet modern requirements. 7. Roads connecting large industrial centers are very important for national economy. 8. The total number of vehicles passing through any section of a road in unit time (day, hour) is called the traffic intensity. 9. The road being built in our district will be opened for traffic next month. 10. The impurities remaining in the end product should be removed. 11. A traffic stream usually consists of many types of vehicles moving at different speeds. 12. A computer solving a lot of problems was designed by a group of students. 13. The smallest particle having all the characteristics of an element is called an atom.

Participle II

1. The formulated law is applied in many fields of science. 2. The report should involve the data obtained. 3. The reaction took place under reduced pressure. 4. We have measured the time required for this operation. 5. An instrument based on the same principle has been developed for substance analysis. 6. The elements predicted by Mendeleyev were later discovered by scientists from different countries. 7. The substances investigated showed quite interesting properties. 8. The results discussed have little relevance to the problem under investigation. 9. According to the viewpoint adopted this method couldn't be used in construction. 10. This made it possible to study artificially prepared radioactive samples. 11. When metals react with acids the gas isolated is not always hydrogen. 12. The methods applied vary with the purpose of a particular investigation. 13. The amount of heat generated depended on the quality of the fuel used.

III. Переведите предложения, в которых причастие выполняет функцию обстоятельства. Обратите внимание на способы перевода причастий.

A. *Model: Demonstrating the film, the lecturer commented on its contents.*

Демонстрируя фильм, лектор делал комментарии о его содержании.

Having demonstrated the film, the lecturer commented on its contents.

Продемонстрировав фильм, лектор прокомментировал его содержание.

Having been demonstrated, the film was discussed by the experts.

После того, как фильм показали, он был обсуждён специалистами.

1. Having shown poor results, the method was not used any more. 2. Considering the problem the scientist used his own theory. 3. Having considered the problem, the scientist found a new solution. 4. Having applied this method we solved a number of complex mathematical problems. 5. Having been applied, the method helped us to solve some problems. 6. Having reacted with oxygen, this substance changed its properties. 7. This must be taken into account when comparing the project submitted. 8. Taking into account the results of the test, we find the material to be suitable for our new

experiment. 9. Examining the material, the engineers obtained unexpected results. 10. Having been examined, the materials were used in construction. 11. Having developed the engine, the engineers tested it under different working conditions. 12. Having been invented, the engine was tested under different working conditions. 13. Being invented by our engineers, the new engine replaced the older model. 14. Strength and durability are the main factors when deciding upon the best building materials. 15. Speaking about the new methods of work the engineer told us many interesting details.

B. *Model: When the car was covered with paint, it was delivered to the customer.*

Когда машину покрыли краской, она была доставлена покупателю.

1. Invented by our engineers, the engine was then tested under different working conditions. 2. When heated to a high temperature, the substance showed better qualities. 3. Used without preliminary tests, the new engine showed low performance characteristics. 4. Subjected to high pressure, the substance lost its properties. 5. A brittle material breaks, when subjected to high pressure. 6. If handled carefully, formwork may be used several times. 7. Columns are often called posts, especially when made of timber. 8. Square columns can easily be constructed when required by the architectural design. 9. If protected by a special coating this material becomes waterproof. 10. When laid, the pipes are generally tested to twice the working pressure. 11. When cooled, a substance can be converted from the liquid state into the solid. 12. When heated to a certain temperature, this alloy increases in volume. 13. When heated, a magnet loses some of its magnetism. 14. When equipped with modern machinery, the plant considerably improved the product’s quality. 15. When placed in a vessel, a gas fills it completely.

IV. Выберите правильную форму причастия. Переведите предложения.

1. The house (being built/having built) in the street will be a new library. 2. The problems (discussed/discussing) at the conference were interesting. 3. (Having

heated/being heated) magnetized materials lose their magnetism. 4. (Being finished/ having finished) the experiment, he printed the results (obtaining/obtained). 5. The device (having developed/being developed) is going to be (testing/tested) next winter.
6. (Having stated/having been stated) the laws of gravity Newton was able to explain the structure of the Universe. 7. Roads (connecting/having connected) large industrial centres are very important for the national economy. 8. (Being completed/having completed) the road they opened it for traffic. 9. The problem (solved/solving) helped to increase the speed of a car. 10. Vehicles (traveling/having traveled) in the same direction constitute a traffic stream. 11. The professor told us about the experiments (carrying/ being carried) out in the laboratory. 12. In this system steam is generated in a boiler (having filled/filled) with water.

V. Выпишите и переведите предложения, в которых:

а) причастие выполняет функцию определения;

б) причастие выполняет функцию обстоятельства;

1. The engine being tested will increase the safety and the car efficiency. 2. Testing the engine the engineers found some defects. 3. The engineers testing the engine found some defects. 4. Having tested the new engine, the engineers continued to improve it. 5. The engine tested showed perfect performance characteristics. 6. The road being built in our district will be opened for traffic next month. 7. The workers building the road use modern materials. 8. Having been built, the road was opened for traffic. 9. Having completed the road, they opened it for traffic. 10. The amount of water added influences the strength of concrete. 11. Having added more water, the inexperienced workers reduced the strength of concrete. 12. Adding water to the solution you should follow the instruction. 13. Being well designed, this road will function properly. 14. A well designed road will function properly. 15. Having been used for a long time, the road required reconstruction. 16. The results obtained showed that the tested materials were suitable. 17. Not all existing roads meet modern requirements. 18. Improving

engineering standards designers should take into account the cost of the construction. 19. Having used the most advanced equipment, they improved the road pavement.

VI. Найдите в предложениях независимый причастный оборот. Переведите предложения, обращая внимание на разные способы перевода независимого причастного оборота.

A. 1. The system having been tested, the safety and the car efficiency greatly increased. 2. The laboratory having been provided with the necessary instruments, they could carry out the work successfully. 3. A new technique having been developed, the quality of construction work greatly increased. 4. The temperature being 100 degrees, water boiled quickly. 5. The experiment having been carried out, we started a new investigation. 6. The road having been tested, it was opened for traffic. 7. New materials being widely used in road construction, the quality of the roads has been considerably increased. 8. The speed remaining constant, the car will cover the distance in 2 hours.

B. 1. In the steam engine the fuel burns slowly, the heat being used to generate steam. 2. Such minerals may occur in some other places, the possibility of discovering them being limited to certain areas. 3. The scientist gave explanations of the observed facts, his report being accompanied by tables and diagrams. 4. All bodies in nature possess either potential or kinetic energy, most of them possessing both. 5. In the first test two samples were used, both of them having low conductivity. 6. A lot of new materials are used in construction currently, reinforced concrete being the most common. 7. Panel heating is a widespread heating method, its basic advantage being that of comfort.

C. 1. The car moving with constant speed, the distance traveled is directly proportional to the time. 2. The most advanced equipment having been used, the road pavement was greatly improved. 3. Plans for building a house are made by an architect, a separate plan being drawn for each individual floor. 4. There being the danger of explosion, no gas can be used in the houses that have more than 12 storeys. 5. Reinforced concrete is widely used in building modern structures, the technique having become a routine practice. 6. The building profession is very popular nowadays, it being also well paid.

5. 8. Герундий (The Gerund)

5.8.1. Определение.

Герундий – производный от глагола класс слов, имеющий свойства глагола и существительного.

to build (V) → building

строить →строительство

Building this power plant was absolutely necessary.

Строительство этой электростанции было совершенно необходимо.

They insist on ***building*** the power plant near the capital.

Они настаивают на ***строительстве*** электростанции поблизости от столицы.

5.8.2. Категории герундия.

Герундий передаёт информацию о времени и залоге. Соответственно, имеются следующие формы герундия:

Voice / Time	Active	Passive
Indefinite	building completing	being built being completed
Perfect	having built having completed	having been built having been completed

Completing the project will improve the city skyline.

Завершение этого проекта улучшит внешний вид города.

By ***having completed*** the project we improve the city skyline.

Завершив строительство, мы улучшим внешний вид города.

He prefers ***being taught*** individually.

Он предпочитает, чтобы его ***обучали*** индивидуально.

5.8.3. Функции герундия в предложении.

Таблица 29. Функция герундия в предложении

Функция	Пример	Перевод
Подлежащее **(subject)**	***Designing*** this concert hall was a challenge.	***Проектирование*** этого концертного зала представляло собой сложную задачу.
Дополнение **(object)**	We insist on your ***designing*** this concert hall.	Мы настаиваем на том, чтобы вы ***спроектировали*** этот концертный зал.
Определение **(attribute)**	The idea of ***designing*** a new concert hall must be discussed at the next meeting.	Идея ***спроектировать*** новый концертный зал должна быть обсуждена на следующем собрании.
Обстоятельство **(adverbial modifier)**	By ***designing*** the city concert hall he proved that he was the best architect in the capital.	***Спроектировав*** городской концертный зал, он доказал, что является лучшим архитектором столицы.

5.8.4. Герундий и другие -ing формы.

Поскольку герундий имеет такое же окончание, как у существительного с окончанием –ing и у причастия I, то необходимо различать употребление этих трех омонимичных форм в предложении (см. таблицу 30).

Упражнения

I. Найдите предложения с герундием и переведите их на русский язык.

1. Our professor likes discussing his experiments. 2. The scientist thanked them for being invited to the international conference. 3. The tradition of building tall buildings in the centre of a city is international. 4. The student was proud of having been invited

Таблица 30. Ing-формы

Functions	Noun	Participle I	Gerund
Подлежащее **(Subject)**	The Administration ***building*** faces the river. – Административное ***здание*** выходит на реку.	–	***Building*** is a profitable job nowadays. – ***Строительство/Строить*** сейчас является выгодной работой.
Дополнение **(Object)**	Look at that old ***building.–*** Взгляните на это старое ***здание.***	–	The company prefers ***building*** houses. – Компания предпочитает ***строить*** дома.
Часть сказуем. (**Part of a predicate)**	It is our Administration ***Building***. – Это наше административное ***здание.***	He is ***building*** a log house for his family. – Он ***строит*** для своей семьи бревенчатый дом.	Our task is ***building*** a big tractor plant.– Наша задача **– *построить*** крупный тракторный завод.
Определение **(Attribute)**	The ***building*** design is up to date. – Проект ***здания*** современен.	The workers ***building*** the stadium are from Finland.– Рабочие, ***строящие*** стадион, из Финляндии.	The idea of ***building*** a new stadium was approved by the committee. – Идея ***построить*** новый стадион была одобрена комитетом.
Обстоятельство **(Adverbial modifier)**	In the ***building*** there is a marble staircase. – В ***здании*** имеется мраморная лестница.	***Building*** his new house he used only high quality bricks.– ***Возводя*** свой новый дом, он использовал только высококачественный кирпич.	By ***building*** up a detailed model of the process you can definitely facilitate the research. – Посредством ***создания*** подробной модели, определенно можно облегчить исследование.

to the scientific conference. 5. He will not take part in the conference without being invited. 6. He remembers having been introduced to the well-known architect. 7. Our delegation got used to being introduced to the journalists. 8. You can't present the report without introducing the results of your research. 9. The young engineer was surprised at having been given this position. 10. He understood the importance of being given this position. 11. The students have no difficulty in translating these sentences. 12. The professor mentioned having read my report.

II. Переведите предложения, обращая внимание на герундий в функции:

а) подлежащего

1. Reinforcing concrete by steel makes it much stronger. 2. Heating a substance to high temperatures may change its properties. 3. Constructing tall buildings without modern building mechanisms is now impossible. 4. Boiling continued for as long as 80 hours. 5. Balancing is done with special equipment. 6. Carrying out this task required much efforts and knowledge. 7. Reconstructing this road will require much time and money. 8. Manufacturing the new engines started last year. 9. Discussing this problem allowed us to come to an important conclusion. 10. Working at a construction site helps to understand all stages of house construction.

б) части сказуемого

1. The task of the assistant is controlling the temperature level. 2. Our main duty was gathering information for the research. 3. His favourite occupation is watching the house construction process. 4. The main idea was analyzing the phenomenon in natural conditions. 5. The purpose of this report is presenting the results of the research. 6. They finished installing the equipment some days ago. 7. The designer went on working at the residence house interior. 8. Next year our laboratory will start investigating the properties of new materials. 9. At this temperature concrete starts hardening. 10. In spite of the failure they continued experimenting.

в) дополнения

1. He remembers having added some water to the mixture. 2. Science requires experimenting. 3. The mechanic recommended checking tyres regularly for

pressure. 4. A driver should avoid carrying loose objects in his car. 5. I'd advise replacing the old cylinders. 6. They preferred using timber for construction purposes. 7. What apparatus do we use for measuring air pressure? 8. They insisted on the second question being reconsidered. 9. The very first efforts of our ancestors were aimed at obtaining shelter. 10. The use of fine tools resulted in developing building methods. 11. It is possible to set up power stations based on utilizing the heat of the Sun. 12. Drivers are warned against exceeding the speed limit. 13. Our efforts are directed towards improving the material quality.

г) определения

1. Every student understands the importance of learning foreign languages. 2. At the meeting they discussed different ways of improving their work. 3. Our scientists try to find new possibilities for applying atomic energy. 4. High temperature resistance is the main reason for choosing this substance. 5. There remains the problem of obtaining accurate measurements during the experiment. 6. The usual means of identifying temperature parameters is not available under these conditions. 7. His research is restricted to ways and means of measuring the surface area. 8. A discussion on applying this method was not over. 9. The accident may be considered as a result of overloading. 10. The technique of determining the material purity can be made a subject of detailed discussion.

д) обстоятельства

1. After cooling the substance to 20 degrees, he registered a pressure drop to 25 atm. 2. The mineral tended to turn white on drying. 3. On finding out that the apparatus was working badly, they delayed the experiment. 4. This technique can be applied in building power stations. 5. Before carrying out the research the substance must be purified. 6. After placing the concrete was compacted with vibrators. 7. Metals cannot be dissolved without being changed into new substances. 8. In spite of having met failure they continued experimenting. 9. After adding water concrete must be well mixed. 10. Without being subjected to special treatment rubber cannot be extensively used.

III. Найдите в предложениях герундий, определите его форму и функцию. Переведите предложения.

1. Instead of restoring the old motorway they decided to build a new one. 2. The method has a disadvantage of being relatively expensive. 3. Cutting stones and timber became possible with the invention of tools. 4. Up-to-date building is based upon using industrial methods of work. 5. The workers were busy assembling the apparatus. 6. In lifting large structural elements use is made of gantry cranes. 7. Good drainage gives a possibility of removing water off the road surface. 8. A special liquid is used for cooling the engine. 9. Although they obtained negative results they didn't give up improving the method. 10. On being heated, these salts decompose. 11. They could not afford carrying out another unsuccessful experiment. 12. By avoiding this particular disadvantage we greatly improve the structural safety. 13. The opposite method is assembling large prefabricated structures at the site. 14. In planning an industrial enterprise the financial aspect is of prime significance. 15. In addition to carrying out installation work, our specialists will also give assistance in starting the atomic reactor. 16. They have worked for three years with a view to improving the quality of the ventilation system.

VI. Определите, является ли слово с окончанием –ing герундием или причастием. Предложения переведите.

1. Investigating the properties of different aggregates has led to important theories concerning the concrete nature. 2. Investigating the properties of different materials they formulated some important theories concerning the concrete nature. 3. Placing concrete can be carried out with or without vibrators. 4. Placing concrete the workers often use vibrators. 5. Before solving this problem it is desirable to consider the available data. 6. While solving this problem the scientists considered the available data. 7. The scientists solving this problem considered the available data. 8. The scientists considered different ways of solving the problem.

9. It was impossible to postpone testing the new engine before the exhibition. 10. Testing the new engine before the exhibition they found out some drawbacks.

5. 9. Неопределённая форма глагола или инфинитив (The Infinitive)

5.9.1. Определение.

Инфинитив – неличная форма глагола, имеющая свойства глагола и существительного. Как правило, имеет показатель “to”:

to obtain – получать, to demonstrate – показывать

5.9.2. Формы инфинитива.

	Active	Passive
Indefinite	to ask	to be asked
Continuous	to be asking	-
Perfect	to have asked	to have been asked

Таблица 31. Функции инфинитива в предложении

Функция	Пример	Перевод
Подлежащее **(subject)**	***To discuss*** this problem is very important. It was very difficult ***to discuss*** this problem.	***Обсудить*** эту проблему очень важно. Было очень сложно ***обсуждать*** эту проблему.
Часть сказуемого **(part of a predicate)**	We can ***discuss*** this problem. Our aim is ***to discuss*** this problem.	Мы можем ***обсудить*** эту проблему. Наша цель – ***обсудить*** эту проблему.
Дополнение **(object)**	We want ***to discuss*** this problem now.	Мы хотим ***обсудить*** эту проблему сейчас.
Определение **(attribute)**	The problem ***to be discussed*** at the conference is one of the most difficult.	Проблема, которую собираются ***обсудить*** на конференции, одна из самых сложных.

Обстоятельство **(adverbial modifier)**	(In order)***To discuss*** this problem we must invite an expert.	Чтобы ***обсудить*** эту проблему, мы должны пригласить эксперта.

5.9.3. Сложные дополнения (Complex Object)

Дополнение в предложении бывает 3 типов:

1. Простое дополнение, выраженное существительным или местоимением.

I want ***a*** new ***car***.

Я хочу новую машину.

He understands ***me***.

Он понимает меня.

2. Простое дополнение, выраженное глаголом в форме Infinitive.

I want ***to study*** English.

Я хочу изучать английский язык.

3. Сложное дополнение, выраженное существительным (или местоимением в объектном падеже) и глаголом в форме Infinitive.

I want ***my daughter to study*** English.

Я хочу, чтобы моя дочь изучала английский язык.

I want ***him to speak*** English.

Я хочу, чтобы он говорил по-английски.

Сложное дополнение (или «объектный падеж с инфинитивом») употребляется после глаголов, выражающих:

- желание (to want, to wish, to like)

I wish ***my elder son to be*** an engineer.

Я хочу, чтобы мой старший сын стал инженером.

- знание, предположение (to know, to suppose, to expect, to consider)

We know ***metals to conduct*** electricity.

Мы знаем, что металлы проводят электричество.

I expect ***them to pass*** the exam in time.

Я ожидаю, что они своевременно сдадут экзамены.

- констатацию факта (to find, to note, to state)

I found ***them to be experts*** in economics.

Я обнаружил, что они хорошо разбираются в экономике.

-физическое восприятие (to watch, to feel, to hear, to see)

The students heard ***their professor deliver*** his report at the conference.

Студенты слышали, как их преподаватель делал доклад на конференции.

Примечание: В обороте, следующем за глаголами физического восприятия, инфинитив употребляется без частицы «to».

В конструкции «Сложное дополнение» могут использоваться все формы инфинитива:

I suppose her ***to translate*** well.

Я полагаю, что она хорошо переводит.

I suppose her ***to be translating*** the article now.

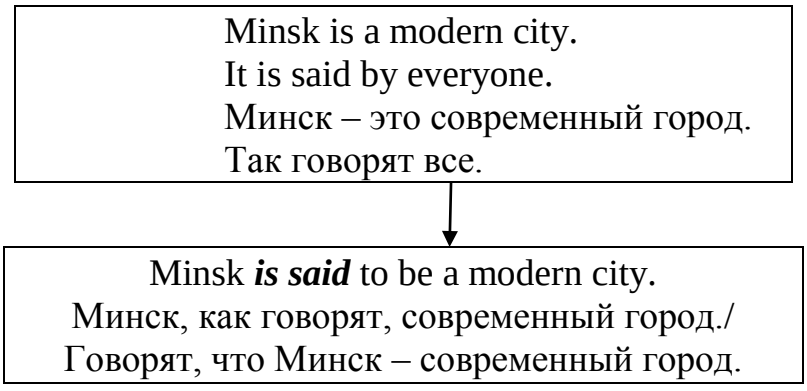
Я полагаю, что она сейчас переводит статью.

I suppose her ***to have translated*** the article.

Я полагаю, что она уже перевела статью.

5.9.4. Сложное подлежащее (Complex Subject)

Инфинитивный оборот **Complex Subject** – это механизм представления информации двух простых предложений в пределах одного предложения.



Можно выделить 3 типа предложений с оборотом **Complex Subject** (см. табл. 32).

Таблица 32. Сложное подлежащее (Complex Subject)

Тип I	Тип II	Тип III
is/ are said to как говорят ***is/are considered to*** как считают ***is/are thought/ believed to*** как думают ***is/are known to*** как известно	***appeared to*** ***happened to*** как оказалось ***proved to*** ***seems to*** кажется	***is certain/is sure to*** безусловно ***is likely to*** вероятно ***is unlikely to*** маловероятно
The technical university ***is said*** to be the largest university in Belarus. Технический университет, ***как говорят***, является крупнейшим в Беларуси. The Power Department ***is reported*** to be moving to a new building. Энергетический факультет, ***как сообщают***, переезжает в новое здание. They ***are known*** to have passed all the exams**.** Они, ***как известно***, сдали все экзамены.	English ***appeared*** to be an interesting subject**.** Английский ***оказался*** интересным предметом. The monitor ***proved*** to be a reliable person. Староста ***оказался*** ответственным человеком. They ***happened*** to be taking an English exam in room 736. ***Оказалось***, что они сдают экзамен в аудитории 736. The system ***seems*** to work well. Система, ***кажется***, хорошо функционирует.	My friend ***is certain*** to become a good architect. Мой друг, ***безусловно***, станет хорошим архитектором. The exam ***is likely*** to be difficult. Экзамен, ***вероятно***, будет сложным. The lecturer ***is unlikely*** to be late. ***Маловероятно***, что лектор опоздает.

Упражнения

I. Переведите предложения, в которых инфинитив выполняет функцию подлежащего. Измените предложения по образцу.

Model: To drive a car in a big city is difficult. →

It is difficult to drive a car in a big city.

1. To use local materials is cheaper when constructing a road. 2. To take into account the properties of natural materials is necessary. 3. To develop new methods of construction took many years. 4. To speed up construction is impossible without modern equipment. 5. To repair the old school building was necessary as soon as possible. 6. To use new sources of energy is absolutely vital for the mankind. 7. To read articles in scientific journals is useful. 8. To know at least one foreign language is necessary. 9. To solve this complicated problem is interesting. 10. To develop new kinds of building materials is important.

II. Переведите предложения, в которых инфинитив выполняет функцию части сказуемого.

1. Our principal task is to become good engineers. 2. Today chemists are to find new methods of polymer synthesis. 3. You will have to repeat the material of the lecture before the exam. 4. The road from the airport to the city is to be reconstructed. 5. The experiment was to be carried out yesterday. 6. The difficulty was to transport the material to badly accessible parts of the country. 7. The purpose of an engineer is to consider all the factors in building any structure. 8. The main task is to reduce the cost of building operations. 9. They had to remove a thick layer of sand before they started the construction. 10. The purpose of this test is to check traffic intensity on individual road sections. 11. The collected samples are to be sent to the laboratory for examination. 12. Their aim was to complete the road reconstruction as soon as possible.

III. Переведите предложения, в которых инфинитив выполняет функцию дополнения.

1. Some students want to continue their education after the University. 2. They intended to carry out this test in an hour. 3. The best scientists of the country

were asked to take part in this research. 4. They suppose to improve the comfort of passengers. 5. He hoped to enter the Technical University. 6. The company promised to complete the construction in time. 7. The architect asked to change the construction site. 8. The professor demanded to improve the engine. 9. The students wanted to pass the exam successfully. 10. The mechanic was told to repair the car brake system. 11. They wanted to furnish the laboratory with up-to-date equipment. 12. Everybody likes to have some rest after hard work.

IV. Переведите предложения, в которых инфинитив выполняет функцию обстоятельства:

1. To produce suitable paving material all impurities have to be removed. 2. We had to use some lorries in order to bring bricks to the site. 3. They will need more concrete so as to finish the construction. 4. To begin the construction of the bridge they carried out a great amount of preliminary work. 5. This method is not tested enough to be used everywhere. 6. To change the project the engineers will have to do much work. 7. A new comfortable coach was developed to transport people over long distances. 8. In order to overcome this difficulty various means were tried. 9. This material is too brittle to be used in construction. 10. To solve this problem we need new methods of measurement. 11. In order to define the compound composition, some special procedures should be performed. 12. A specially constructed device is employed to assure the highest possible accuracy of processing.

V. Переведите предложения, в которых инфинитив выполняет функцию определения:

1. These are traffic rules to be remembered. 2. The engine to be installed in this car is very powerful. 3. He got the instructions to be followed. 4. There is a report about an exhibition to be opened next week. 5. He got a sample of the mix to be analyzed in the laboratory. 6. We had a new problem to be solved within a month. 7. They obtained the results of the tests to be taken into account. 8. The theory to be considered at the next conference is revolutionary. 9. The substance properties to be determined are of great importance for our research. 10. The bridge to be

constructed is very important for the local community. 11. A new skyscraper to be constructed in Moscow will be the highest in the world. 12. A new device to be used in the experiment is very accurate. 13. The engineers were given a complicated task to be carried out. 14. The scientist needed more information to be added to his research. 15. The problem to be solved is essential for our future work.

VI. Выпишите и переведите предложения, в которых инфинитив выполняет функцию:

а) подлежащего; б) части сказуемого; в) обстоятельства; г) определения;

1. The road surface to be repaired was destroyed many years ago by heavy vehicles. 2. To repair the main road surface the most advanced equipment should be used. 3. It is absolutely necessary to repair the main road surface as soon as possible. 4. The most complicated task was to repair the main road surface as soon as possible. 5. All samples to be tested were brought from different parts of the country. 6. These samples were brought from different parts of the country to be tested in our laboratory. 7. To test samples from different parts of the country was impossible in our laboratory. 8. The main task of our laboratory was to test samples from different parts of the country. 9. We were asked to test samples from different parts of the country. 10. To speed up construction work modern methods should be used. 11. The main task of modern methods is to speed up the construction process. 12. It is necessary to speed up the construction by means of modern methods.

VII. Найдите в предложениях инфинитивный оборот (сложное дополнение). Обратите внимание на перевод таких конструкций.

1. This method enabled the designing process to be simplified. 2. They wanted us to tell them about the results of our experiment. 3. Everybody knows James Watt to have invented the steam engine. 4. I want him to help me with my report on road construction. 5. This control system permits the engine of the car to run at its most efficient speed. 6. I know him to have been working at this problem for a long time. 7. The chief engineer allowed the new engine to be tested. 8. This building equipment permitted some additional costs

to be lowered. 9. Modern discoveries allow science and engineering to develop rapidly. 10. One cannot expect the problem of using solar energy to be solved in a year or two. 11. We expected our scientists to find new sources of energy. 12. Everybody wanted the construction of the new stadium to be completed in time.

VIII. Измените предложения по образцу, используя инфинитивный оборот.

Model: They want to stop the experiment.→

They want the experiment to be stopped.

Everybody knows that he was the best student.→

Everybody knows him to have been the best student.

1. We hoped that our project would win the first prize. 2. Everyone knows that concrete is widely used in house building. 3. We thought that the concrete quality was suitable. 4. I suppose that they took part in the expedition. 5. The commission found that the safety system was reliable. 6. We know that the students take exams in June. 7. We suppose that they are making an experiment. 8. Everybody expects that they will install a new ventilation system next year. 9. They state that the road has been reconstructed. 10. I believe that his ideas influenced physics of that time. 11. The teacher expected that the students would do the task. 12. We heard that he had conducted the experiment well.

IX. Найдите в предложениях инфинитивный оборот (сложное подлежащее). Обратите внимание на перевод таких конструкций.

A) 1. The building is known to be the highest in the city. 2. The building is known to have been the highest in the world. 3. Traffic safety is said to be one of the major important problems for all countries. 4. The road was supposed to be repaired in some months. 5. The road is supposed to have been repaired. 6. He was said to have been experimenting with dangerous substances. 7. His discovery was believed to have opened new possibilities in chemistry. 8. Many buildings were reported to have been damaged by fire. 9. The car design is said to have been improved. 10. The car design is expected to be improved. 11. The construction of the bridge was announced to

be completed in May. 12. The construction of the bridge is announced to have been completed.

B) 1. He seems to know nothing about new construction materials. 2. He appears to work much at the development of the new material quality. 3. The engineer proved to be an experienced designer. 4. The house appeared to have been built in the 19th century. 5. His knowledge of the subject proved to be both deep and many-sided. 6. He doesn't seem to have been upset by his failure. 7. The results of his measurements happened to be wrong. 8. The offer seems to have made no impression on him. 9. The task appeared to be too complicated for the students.

C) 1. The application of this material is likely to give better results. 2. The scientist is certain to make a great discovery. 3. The engine's capacity is unlikely to be increased. 4. This alloy is certain to improve the strength of the structure. 5. The student is sure to pass his exams. 6. His report is likely to attract much attention at the conference. 7. The new method is unlikely to be used in industry soon. 8. Modernization of the boiler is certain to have increased the efficiency of the heating system. 9. Central heating is sure to be the most common for our cities.

X. Измените предложения по образцу, используя инфинитивный оборот (Сложное подлежащее).

Model: It is known that the plant produces prefabricated structures.→
The plant is known to produce prefabricated structures.
It is said that the power plant was constructed in 1983 →
The power plant is said to have been constructed in 1983.

1. It is reported that he designed the longest bridge in his country. 2. It is considered that reinforced concrete is the most common material in construction. 3. It is announced that the motorway has been reconstructed. 4. It is unlikely that the engine test was a success. 5. It seems that the construction is coming to the end. 6. It is known that solar batteries convert the sun rays into electric energy. 7. It appears that the aluminum shows considerable resistance to corrosion. 8. It is certain that synthetic fibres make steel harder. 9. It is known that he won the Nobel Prize in 1998. 10. It is reported that the gasification of the region has been completed. 11. It is likely that applying plastics made the whole structure lighter.

Приложение 1. **Основные формы нестандартных глаголов**

Indefinite stem	*Past Indefinite*	*Participle II*	*Перевод*
be	was, were	been	быть
break	broke	broken	ломать
beat	beat	beaten	бить
begin	began	begun	начинать
bring	brought	brought	приносить
build	built	built	строить
burn	burnt	burnt	сжигать
buy	bought	bought	покупать
choose	chose	chosen	выбирать
come	came	come	приходить
deal	dealt	dealt	иметь дело
do	did	done	делать
draw	drew	drawn	тащить
drive	drove	driven	ехать
fall	fell	fallen	падать
feel	felt	felt	чувствовать
find	found	found	находить
get	got	got	получать
give	gave	given	давать
go	went	gone	идти
grow	grew	grown	расти
have	had	had	иметь
hear	heard	heard	слышать
hold	held	held	держать
keep	kept	kept	хранить
know	knew	known	знать
lay	laid	laid	класть

Indefinite stem	*Past Indefinite*	*Participle II*	*Перевод*
lead	led	led	вести
learn	learnt	learnt	учить(ся)
leave	left	left	оставлять
let	let	let	позволять
lose	lost	lost	терять
make	made	made	делать
meet	met	met	встречать
pay	paid	paid	платить
put	put	put	класть
read	read	read	читать
ring	rang	rung	звонить
rise	rose	risen	подниматься
run	ran	run	бежать
say	said	said	сказать
see	saw	seen	видеть
send	sent	sent	посылать
show	showed	shown	показывать
speak	spoke	spoken	говорить
spend	spent	spent	тратить
take	took	taken	брать
teach	taught	taught	обучать
tell	told	told	говорить
think	thought	thought	думать
throw	threw	thrown	бросать
understand	understood	understood	понимать
wear	wore	worn	носить
win	won	won	побеждать
write	wrote	written	писать

2. Практический раздел

2.1 Перечень тем учебной дисциплины:

1. Students' life. Youth problems
2. My Specialty. Teacher's duties
3. Information-Dependent Society
4. Development of Microelectronic
5. History of Computers
6. Data Processing Concepts
7. Computer Systems: An Overview
8. Functional Organization of the Computer
9. Storage
10. Central Processing Unit
11. Input-Output Units
12. Personal Computers
13. Computer Programming

2.2 Материалы, рекомендуемые для использования на практических занятиях:

1. См. Борисевич, Л.И. Challenges of Teaching. Обучение: вопросы и мотивы: пособие по английскому языку для педагогов-инженеров / Л.И. Борисевич, Н.Е. Денисенок. - Минск: БНТУ, 2009. - 135с.

2. См. Богданович, Е.Г. Учебная деятельность студента в техническом вузе: учебно-методич. пособие по английскому языку / Е.Г. Богданович, О.Н. Барлюгова, Т.В. Колосова. - Минск: БНТУ, 2005. - 72с.

3. См. Радовель В.А. Английский язык. Основы компьютерной грамотности: Учебное пособие / Радовель В.А. - Изд. 4-е, дополн. и исправл. - Ростов н/д: Феникс, 2007. - 224 с. - (Сам себе репетитор).

2.3. Тексты для чтения, перевода и реферирования.

См. Маркушевская Л.П. English for Part-Time Students – СПб: Учебное пособие по английскому языку для студентов вечерней и заочной формы обучения (Часть I) / Маркушевская Л.П., Рущенко Г.В., Сухарева М.Э., Примакина Т.В. - Санкт-Петербург: СПб ГУ ИТМО, 2005. – 161с.

HISTORY OF THE COMPUTER

For a long time a man has been looking for ways of increasing the speed of computations.

The history of computers starts out about 3000 B.C. at the birth of the abacus, a wooden rack holding two horizontal wires with beads which are moved around according to programming rules memorized by the user, so all regular arithmetic problems can be done. It is still in existence and used by some part of the world's population. It made valuable contributions, including positional notation. Another important invention around the same time was the Astrolabe, used for navigation. The achievements in this field which step by step led to the computer as we know it today include such names as Napier (1612) – the inventor of logarithms; Pascal (1642) – the creator of the first gear-driven calculating machine. It added numbers entered with dials. Calculating devices in use today closely resemble Pascal's machine.

In 1671 Gottfried Wilhelm von Leibniz improved on Pascal's machine. He invented a special mechanism, which is still used in many modern-day calculators. Ch.X.Thomas created the first successful mechanical calculator that could add, subtract, multiply and divide.

Jacquard (1801) developed the punched-card principle followed by Hollerith's(1800) "unit record" principle by which data were coded and represented by holes in cards. He developed an automatic sorting machine, a cardpunch machine and semiautomatic tabulating machine. He organized "The Tabulating Machine Company" which with some other companies became the International Business Machines Corporation in 1924 (the famous IBM).

By 1890 the range of improvements included accumulation of partial results, storage and automatic reentry of past results (a memory function), printing of the results.

Ch.Babbage (1850) a mathematics professor in Cambridge constructed large-scale calculating machines when he realized that many long calculations were really a series of predictable actions that were constantly repeated. He called his automatic mechanical calculating machine a difference machine. The difference machine was really a great advance. Babbage continued to work on it for 10 years but then he started to work at the construction of a fully program-controlled, automatic mechanical digital computer. He called this idea an Analytical Engine, but failed because the necessary parts couldn't be manufactured

precisely in his time. Despite failures, his work made a valuable contribution to the later engineering of calculating machines.

Between 1850 and 1900 great advances were made in mathematical physics and it came to be known that most observable dynamic phenomena can be identified by different equations (which meant that most events occurring in nature can be measured or described in one equation or another).

GENERATIONS OF COMPUTER

First Generation Computers (1954-59) were rather bulky in size, require large amounts of air conditioning and repair time also. The important advantages over earlier machines were speed of calculation, use of the stored program, the ability to apply logical decisions to calculated results, various types of input and output equipment, magnetic tape, paper tape, ability to modify its own program, etc.

Second Generation Computers (1959-64) replaced the vacuum tubes with the tiny transistor, thus requiring less power and offering greater reliability. Highspeed card readers and printers were introduced. Symbolic programming was replacing machine language programming during this period. Random access devices were introduced. Repair and maintenance time was greatly reduced.

Third Generation Computers (1964-70) were characterized by advanced miniaturization and refinement of computer components. Greater compilers, newer and faster methods of input and output, optical scanners, magnetic ink character readers, data transmission over long distances, displays on video tubes, multiprogramming, tremendous storage capacities, remote terminals with access to central computers – innovations introduced during this period.

Fourth Generation Computers (1970-1980) featured many changes in all sectors of the computer field. The concept of "Virtual Storage" increased the main storage capabilities of computers by allowing a computer to directly access outside storage devices as though they were part of main storage. The minicomputer made spectacular advances during this period.

Fifth Generation. In the 1980s very large scale integration (VISI), in which hundreds of thousands of transistors were placed on a single chip, became more and more common.

The "shrinking" trend continued with the introduction of personal computers (PCs) used by individuals. By the late 1980s some personal computers were run by microprocessors that could process about 4000000 instructions per second.
The new generation, the so-called "fifth" generation is using new technologies with new programming languages, capable of amazing feats in the area of artificial intelligence.

HISTORY OF PROGRAMMING LANGUAGES

Programming language is a composition of vocabulary and set of grammatical rules for instructing a computer to perform specific tasks. Each language has a

unique set of keywords* (words that it understands) and a special syntax for organizing program instructions.

Machine languages are the languages that the computer actually understands. They are the least complex and the closest to computer hardware programming languages. They consist entirely of numbers, and only numbers, — memory addresses and operation codes. Each different type of CPU (Central Processing Unit) has its own unique machine language. Lying between machine languages and high-level languages are languages called assembly languages.

Assembly languages, or assemblers are similar to machine languages, but they are much easier to program in because they allow a programmer to substitute names for numbers: ones and zeros and enable them to use meaningful names for instructions. In fact, the first assembler was simply a system for representing machine instructions with simple mnemonics.

But most often the term programming language refers to *high-level languages*, such as BASIC, C, C++, COBOL, FORTRAN, Ada, Pascal, etc. High-level programming languages are more complex than assemblers and much more complex than machine languages. They all fall into two major categories: imperative languages and declarative languages.

Imperative languages describe computation in terms of a program state and statements that change the program state. Imperative programs are a sequence of commands for the computer to perform. The earliest imperative languages were the machine languages of the original computers. In these languages, instructions were very simple. FORTRAN, Formula translation developed at IBM starting in 1954, was a compiled language that allowed named variables complex expressions, subprograms, and many other features now common in imperative languages.

Declarative programming languages stand in contrast to imperative languages. Whereas imperative languages give the computer a list of instructions to execute in a particular order, declarative programming describes to the computer a set of conditions and relationships between variables, and then the language executor (an interpreter or compiler) applies a fixed algorithm to these relations to produce a result. The advantage of declarative languages is that programs written in them are closer to the program specification. Programming, therefore, is at a higher level than in the imperative languages**.**

NO WORMS IN THESE APPLES

Apple Computers may not have ever been considered as the state of art in Artificial Intelligence, but a second look should be given. Not only are today's PCs becoming more powerful but AI influence is showing up in them. From Macros to Voice Recognition technology, PCs are becoming our talking buddies. Who else would go surfing with you on short notice- even if it is the net. Who else would care to tell you that you have a business appointment scheduled at 8:35 and 28 seconds and would notify you about it every minute till you told it to shut up. Even with all the abuse we give today's PCs they still plug away to make us happy. We

use PCs more not because they do more or are faster but because they are getting so much easier to use. And their ease of use comes from their use of AI.

Speech Recognition. You tell the computer to do what you want without it having to learn your voice. This implication of AI in Personal computers is still very crude but it does work.

Script recognition. Cursive or Print can be recognized by notepad sized devices. With the pen that accompanies your silicon note pad you can write a little note to yourself which magically changes into computer text if desired. Your computer can read your handwriting. If it can't read it though- perhaps in the future, you can correct it by dictating your letters instead.

Your computer does faster what you could do more tediously. You have taught the computer to do something only by doing it once. In businesses, many times applications are upgraded. But the files must be converted. All of the businesses records but be changed into the new software's type. Macros save the work of conversion of hundred of files by a human by teaching the computer to mimic the actions of the programmer thus teaching the computer a task that it can repeat whenever ordered to do so.

AI is all around us. Don't think the change will be harder on us because AI has been developed to make our lives easier.

WHAT IS INTERNET?

Wherever you were, whatever you read, see or hear you can meet information about Internet. Whether you worked in the sphere of education or business, whether you were a employee of some official body, whether you worked with a computer you were probably once or twice asked: “What is your address in the Internet?”

So what is Internet? Why has this global network suddenly appeared? How many people use Internet? In what directions does Internet develop? Answers to these questions allow experts to develop this extremely important communication system.

There are three stages of computer development.

1. *The era of the “Black box” (*1939 – 1970).

That time computers represented the huge weight of electronic lamps, transistors or integrated circuits. They also filled huge black metal boxes. If you smoked or raised voice, they wheezed and stopped. IBM firm manufactured the majority of them.

2. *The era of personal computers* (1970 – 1990).

The invention of microcircuits and new operational systems meant that computers of cheaper and smaller sizes could perform the larger amount of work faster. Miniaturization and improvement of program maintenance have given computers at disposal of small business and families. By the end of this period the majority of people used programs of Microsoft firm.

3. *The era of the WorldNet* (1992).

The beginning of Internet was necessary for the defensive industry, and for investigators of the academic laboratories and computer communication network. There were dozens of experts in the USA, in the UK, and Norway who were true explorers of Internet.

The new communication facility became popular when operators started to send messages to each other to exchange new ideas and to discuss general scientific problems. It was e-mail. Internet is the largest communication network in the world. Recently some sources have been approved and now Internet connects more than 40000 various networks in more than one hundred countries. Imagine, that over 5 million main computers participate in Internet and service 40 million users all over the world.

However, it is very difficult to define real number of users to say how widely Internet is distributed. Nobody operates this network. It has no management establishing, the instructions for use, and allocated authority to introduce them. Internet extends faster and faster. It is easier to speak about how Internet has grown for years from the moment of its appearance than to name the exact amount of its users.

Internet is frequently considered by beginners as a big information "dump". But to help them with huge amount of facts there are various search systems, thematic sites etc. There are also such collectors of the information as encyclopedias. Due to them, you do not need to search for the necessary information on the sites. It is only necessary to find the thematic encyclopedia interesting to you and the address taken from Internet, and to read everything on the given theme. In the network there are both universal and specialized encyclopedias.

As an example it is possible to take Cyril and Mephody's site. Here you can find the encyclopedia and, besides 25 thematic sections. Search is conducted according to the thematic word or a word collocation. As a result you receive references to the thematic sections and then the articles in the encyclopedia. For example, at input of a word "mouse" articles from sections "Animals" and "Computers" will be offered to you.

Besides on a site you have an opportunity to take part in the conference. At your disposal there is a board of announcements, the information on news, weather, currency. It is possible to say that it is the best in Russia Internet encyclopedia. All its articles are absolutely exclusive.

Other example is Britannica. It is huge universal English-speaking encyclopedia. It is submitted without reductions. The encyclopedia consists of two parts: "Macromedia" and "Micromedia". First, you receive the brief information from "Micromedia", and then if it is necessary, from "Macromedia". Numerous references to the articles from books and magazines allow you to receive the exhaustive information on your question.

TRANSLATING MACHINES

There are many jokes about the uselessness of machine translation. The Control Intelligence Agency was said to have spent millions trying to program computers for translating from Russian into English. The best result was translation of the famous Russian proverb "The spirit is willing but the flesh is weak" into "The vodka is good but the meat is rotten". This story is a myth. But machine translation certainly produced its share of howlers and was too much relied upon.

Japanese researchers made energetic steps toward a reliable machine translation. Their efforts were imitated in the West. The earliest "translation engines" were based on a direct, so called "Transformer" approach. Input sentences of the source language were transformed directly into output sentences of the target language. At first the machine did a rough analysis of the source sentence dividing it into subject-object-verb, etc. Then source words were replaced by target words selected from a dictionary and their order was rearranged according to the rules of the target language.

These rough operations were resulted in a simplified transformation with lots of silly sentences so much laughed at now. Then came modern computers which had more processing power and more memory. Their translation engines are able to use "linguistic knowledge". It allowed to produce English-Japanese bank and succeed with "Tsunami" and "Typhoon" – the first Japanese – language – translation software to run on the standard (English) version of Microsoft Windows. Linguistic knowledge translators have two sets of grammatical rules – one for the source language and one for the target language.

They also have a lot of information about the idiomatic differences between the languages to stop them making silly mistakes. Having been designed from the start for use on a personal computer "Tsunami" and "Typhoon" use memory extremely efficiently. Their translating speed is more than 30.000 words per hour. Do they produce perfect translations at a click of a mouse? Not at all. The machine translation comes at first to the hands of expert translators to get their teeth into. One mistake that the earlier researchers had made was to imagine that fully automated machine translation was possible.

USES OF THE WEB

The fact that the Web is being widely used for multiple purposes is without question. But before overviewing its benefits it is worth considering one fact that became crucial event for it. The question is about a new mode of presenting information. Before, over the Internet and other wide area networks, the text has been the main mode of presentation. The Web changed that. Now the information could be presented in graphical format, complete with font choices and incorporated drawings, photographs, tables and other multimedia elements. These graphical elements offered different kinds of information and information

providers were able to search precisely the element. *The result of these innovations is that the Web's capabilities are increasing, its information becomes more comprehensible too*. Of course, the work has to be done right and those who care about their information perfectly know how to do it.

One of the first to use Web was science. Dissemination of research and scientific discoveries have always been one of the purposes of the Internet and of the Web project at CERN in Switzerland. Today the Web is used as a tool of exchanging scientific information as it has been considered to do. *But perhaps more important is that the Web is used to make research discoveries available to the general public, most of this information being presented so that it becomes as easy understandable as possible.* Publicly funded research agencies are interested in making their work known to the public, in finding new ways to place information. Booklets and pamphlets distributed through mailing are expensive and usually ignored. The Web is the best way out of the problem. Now on a well-designed HTML page a user can demonstrate its activities graphically and these pages can be updated inexpensively and frequently.

Providing services for clients as to technical documents, software patches and answers to frequently asked questions is another benefit of the Web using. Customers with a Web access are able to take care of their own information needs without resorting to the help of supplier's support staff. Many other services of this kind are likely to be developed for making the Web more friendly to users. For example, the possibility of Web based tutorials are offering step-by-step procedures for installation a new piece of equipment or for programming your VCR. *Well designed, this service is certain to be better than a usual, tech support phone call because it shows, rather than tells, the customer what to do and how to do.* It should be noted that these Web applications are not a one-way link. Customers need to know that they are not forgotten and that there is a place where they can learn from the experiences of other customers. It becomes possible due to HTML forms to provide a feedback and to answer questions on products. The latter is especially valuable in products ordering. Now there are many who are interested in this service rendered by the Web, and it is despite of the discussion as to the Web's security for credit cards use.

Why is the Web shopping so attractive? Imagine you can find a variety of products ranging from the flowers to books for your music CDs, and all this by browsing through the Web and without leaving your home. Moreover, unlike home shopping on TV, you needn't sit through the other products that are of no use for you in order to find the item you have been looking for. Shopping on the Web is like walking into a shopping mall (by the way, "mall" is the name given to many Web offerings). There is only one thing for the customer to do: click on the shop you want, turn on the online graphic to see a picture of the chosen product and address to the other forms page to do the ordering. Such services are expected to be more often used. At last, such spiritual part of human activity as creative arts is not aside from the Web pages. People in creative arts are often regarded as adherent to traditional forms of arts and resistant to new technologies. However, it would be an

erroneous opinion, because throughout the history people of arts have always been among the first to adopt new technologies to their work. Such examples as printing press or MIDI witness it.

Therefore, it is quite natural that the artists consider WWW to be a new medium suitable for presenting their works and for linking up with their colleagues. Now we see galleries of new visual art to appear online or the presentation of artworks that are asked to be evaluated by the Web users. As to creative writings, it becomes frequent on the Web and includes interactive stories, illustrated texts, and even Web-based drama. The Web attracts artists by an inexpensive way of presenting their work and a build-in global audience. This is something about which artists could only dream before.

Of course, there are some arts that couldn’t be placed on Web sites. But it may be a matter of future.

COMPUTER VIRUSES

A virus is a piece of software designed and written adversely affect your computer by altering the way it works without your knowledge or permission. In more technical terms, a virus is a segment of program code that implants itself to one of your executable files and spreads systematically from one file to another. Computer viruses must be written and have a specific purpose. Usually a virus has two distinct functions: spreads itself from one file to another without your input or knowledge and implements the symptom or damage planned by the perpetrator*. This could include erasing a disk, corrupting your programs or just creating havoc on your computer.

Technically, this is known as the virus payload, which can be benign or malignant. A benign virus is one that is designed to do no real damage to your computer. A malignant virus is one that attempts to inflict malicious damage to your computer, although the damage may not be intentional. There are a significant number of viruses that cause damage due to poor programming and outright bugs in the viral code. Some of the more malignant viruses will erase your entire hard disk, or delete files. Many of the currently known Macintosh viruses are not designed to do any damage. However, because of bugs (programming errors) within the virus, an infected system may behave erratically.

Computer viruses don't infect files on write-protected disks and don't infect documents, except in the case of Word macro viruses, which infect only documents and templates written in Word 6.0 or higher. They don't infect compressed files either. However, applications within a compressed file could have been infected before they were compressed. Viruses also don't infect computer hardware, such as monitors or computer chips; they only infect software. Finally, viruses don't necessarily let you know that they are there - even after they do something destructive.

Nowadays the number of viruses is about 55000. It increases constantly. New

unknown types of viruses appear. To classify them becomes more and more difficult. In common they can be divided by three basic signs: a place of situating, used operation system and work algorithms.

There are three groups of file infectors: Viruses of the **first group** are called overwriting viruses because they over write their code into infected file erasing contents. But these viruses are primitive and they can be found very quickly. **The second group** is called parasitic or cavity viruses. Infected file is capable of work fully or partly but contents of last one are changed. Viruses can copy itself into begin, middle or end of a file. **The third group** is called companion viruses. They don't change files. They make double of infected file so when infected file is being started a double file becomes managing, it means virus.

3. Раздел контроля знаний

3.1 Тематические тесты

См. Радовель В.А. «Английский язык. Основы компьютерной грамотности» Учебное пособие. — Изд. 4-е. — Ростов н/Д: Феникс, 2007. – 224 с.

TEST 1

Вставьте необходимые слова вместо пропусков.

1. Information is given into the computer in the form of ____
   a) ideas; b) characters; c) rules
2. The basic function of a computer is _____ information.
   a) to switch; b) to keep; c) to process
3. The data needed for solving problems are kept in the _____.
   a) memory; b) input device; c) output device
4. Inputting information into the computer is realized by means of ____.
   a) a printer; b) letters; c) diskettes
5. A computer can carry out arithmetic-logical operations _____.
   a) quickly; b) instantaneously; c) during some minutes
6. Computers have become _____ in homes, offices, research institutes.
   a) commonwealth; b) commonplace; c) common room
7. Space _____ uses computers widely.
   a) information; b) production; c) exploration
8. Computers are used for image _____.
   a) processing; b) operating; c) producing
9. Computers help in _____ of economy.
   a) environment; b) management; c) government.
10. Air traffic control depends on computer- _____ information.
    a) generated; b) instructed; c) combined

TEST 2

Вставьте необходимые слова вместо пропусков.

1. Transistors have many ____ over vacuum tubes.

a) patterns; b) advantages; c) scales
2. They _____very little power.
a) consume; b) generate; c) embrace
3. An integrated circuit is a group of elements connected together by some circuit _____ technique.
a) processing; b) assembly; c) manipulation
4. The transistor consists of a small piece of a with three electrodes.
a) diode; b) conductor; c) semiconductor.
5. Modern ____ began in the early 20th century with the invention of electronic tubes.
a) miniaturization; b) electronics; c) microelectronics
6. John Fleming was the _____ of the first two-electrode vacuum tube.
a) generator; b) receiver; c) inventor
7. One of the transistor advantages was lower power _____in comparison with vacuum tubes.
a) consumption; b) reception; c) transmission.
8. Microelectronics greatly extended man's intellectual _____.
a) subsystems; b) capabilities; c) dimensions

TEST 3

Подберите вместо пропусков подходящее по смыслу слово.

1. British scientists invented a _____ way of multiplying and dividing.
a) mechanical; b) electrical; c) optical
2. A new branch of mathematics, _____ , was invented in England and Germany independently.
a) mechanics; b) arithmetics; c) calculus
3. A young American clerk invented a means of coding ____ by punched cards.
a) letters; b) data; c) numbers
4. Soon punched cards were replaced by _____ terminals.
a) printer; b) scanner; c) keyboard
5. Mark I was the first _____ computer that could solve mathematical problems.
a) analog; b) digital; c) mechanical
6. J. von Neumann simplified his computer by storing information in a ____ code.
a) analytical; b) numerical; c) binary
7. Vacuum tubes could control and electric signals.
a) calculate; b) amplify; c) generate
8. The first generation computers were _____ and often burned out.
a) uncomfortable; b) uncommunicative; c) unreliable
9. Computers of the second generation used ____which reduced computational time greatly.
a) transistors; b) integrated circuits; c) vacuum tubes

10. Due to _____ the development of the fourth generation computers became possible.
a) microelectronics; b) miniaturization; c) microminiaturization

TEST 4

Подберите вместо пропусков подходящее по смыслу слово

1. Computer data _____system frees humans from routine error-prone tasks.
a) counting; b) computing: c) processing
2. Computers can store vast amount of information to organize it and _____it.
a) to travel; b) to retrieve; c) to respond
3. The entered data can be transmitted by _____networks.
a) communications; b) conversions; c) procession
4. The possibility of _____ is reduced if data were correctly put into the data processing system.
a) character; b) access; c) error
5. Computer data processing systems can_____ at a fraction of a second.
a) receive; b) respond; c) retrieve
6. Computer systems are vulnerable to the entry of _____ data.
a) invalid; b) invariable; c) invisible
7. As soon as data were entered into the system correctly, the human _____is limited.
a) computation; b) information; c) manipulation
8. The amount of data stored on magnetic discs is constantly_____.
a) decreasing; b) increasing; c) eliminating.

TEST 5

Подберите вместо пропусков подходящее по смыслу слово

1. Computers and their _____equipment are designed by a computer system architect.
a) engineering; b) accessory: c) specific
2. Digital computers use numbers instead of analogous physical _____.
a) symbols; b) equipment; c) quantities
3. Systems _____ are usually stored in read-only memory.
a) hardware; b) software; c) firmware
4. A computer is a machine with a complex network of electronic ___ that operate switches.
a) circuits; b) cores; c) characters
5. In modern electronic computers the _____ is the device that acts as a switch.
a) integrated circuit; b) diode; c) transistor
6. A number of actions that convert data into useful information is defined as_____.

a) data; b) processing; c) data processing

7. Computers can store, organize and retrieve great amounts of information, far beyond the _____ of humans.
   a) capacities; b) capabilities; c) accuracy
8. The analyst _____ a computer for solving problems, while the computer system architect computers.
   a) requires; b) designs; c) uses
9. The use of ___computers will continue to increase with the growth in applications of microprocessors and minicomputers.
   a) analog; b) digital; c) hybrid
10. The development of third generation computers became possible due to the invention of _____ .
   a) integrated circuits; b) electronic tubes; c) transistors

TEST 6

Подберите вместо пропусков подходящие по смыслу слова.

I. The method of _____ all functional categories to one another represents the functional organization of a computer,
   a) showing; b) relating; c) performing
2. Instructions and data are fed through the _____ equipment to the _____
   a) output; b) memory; c) input; d) control
3. The main units of the computer communicate with each other _____ a machine language.
   a) in spite of; b) because of; c) by means of
4. The input also _____ the information into the pulse - no-pulse combinations understandable to the computer.
   a) converts; b) removes; c) accomplishes
5. The four ____ are used to perform basic operations in a computer.
   a) basics; b) circuits; c) equipment
6. A computer can solve very complex numerical.
   a) communication; b) computations; c) instructions
7. Numbers and instructions forming the program are _____ in the memory.
   a) solved; b) stored; c) simulated
8. The control unit serves for _____ orders.
   a) reading; b) interpreting; c) inputting
9. The function of memory is to store _____ the original input data the partial results.
   a) not only ... but also; b) either ... or; c) no sooner ... than
10. The _____ includes the control and arithmetic-logical units.
   a) flip-flop; b) digital computer; c) central processor

TEST 7

Вставьте вместо пропусков необходимые слова.

1. The time required for the computer to locate and transfer data in the storage device is called the data _____ time.
   a) sequence; b) access; c) value
2. _____ memories have no moving parts.
   a) electronic; b) mechanical; c) electromechanical
3. Magnetic _____ were the main elements used for primary memory in digital computers for many years.
   a) cores; b) tapes; c) disks
4. _____ is more commonly used for memory at present.
   a) bipolar semiconductor; b) MOS; c) field-effect transistor
5. Magnetic disks constitute the _____ storage media.
   a) internal; b) primary; c) secondary
6. Data are stored in _____ codes in primary as well as in secondary storage.
   a) digital; b) binary; c) numerical
7. Data access time is _____ in electronic memories than that in electromechanical memories.
   a) longer; b) much longer; c) shorter
8. Electronic memories have _____ capacities for data storage.
   a) more; b) larger; c) less

TEST 8

Вставьте необходимые слова вместо пропусков.

1. Programs and data to be processed must be in the _____ memory.
   a) internal; b) external; c) secondary
2. The control unit _____ instructions from the program.
   a) sends; b) changes; c) obtains
3. The results of arithmetic operations are returned to the _____ for transferring to main storage.
   a) decoder; b) counter; c) accumulator
4. The instruction to be _____ in control unit is read out from primary storage into the storage register.
   a) calculated; b) executed; c) read out
5. The _____ performs logical comparisons of the contents of the storage register and the _____ .
   a) adder; b) accumulator; c) comparer
6. The read out command is passed from the _____ register to the _____ register.
   a) instruction; b) address; c) storage
7. CPU is designed to _____ and to _____ basic instructions for the computer.
   a) control; b) consist; c) carry out

8. CU and ALU consist of electronic circuits with millions of _____ .
a) sensors; b) servers; c) switches

TEST 9

Вставьте необходимые слова вместо пропусков.

1. Input-output devices allow the computer to _____with its external environment.
a) compute; b) command; c) communicate
2. An I/O interface is a special _____ that converts input data to the internal codes.
a) register; b) processor; c) plotter
3. The _____ devices allow the computer to communicate with its external environment.
a) high-speed; b) medium-speed; c) low-speed
4. The low-speed devices are those with complex _____ motion or those that operate at the speed of a human operator.
a) mechanical; b) electrical; c) electronic
5. Data are entered from a _____ in a manner similar to typing.
a) keyboard; b) digitizer; c) printer
6. A remote banking terminal is an example of a _____ input environment.
a) human-dependent; b) human-independent; c) human-related
7. Input _____ match the physical or electrical characteristics of input devices to the requirements of the computer system.
a) interconnections; b) interfaces; c) intercommunication
8. They _____ data into the binary codes.
a) transmit; b) translate; c) transform

TEST 10

Вставьте необходимые слова вместо пропусков.

1.A personal computer is a small relatively inexpensive device designed for an individual _____ .
a) person; b) producer; c) user
2. One of the first and most popular personal computer was _____ in 1977.
a) interpreted; b) introduced; c) integrated
3. All personal computers are based on _____ technology, its CPU being called MPU.
a) microscopy; b) microprocessor; c) microelement
4. Very soon a microcomputer was _____ from a calculator into a PC for everyone.
a) transformed; b) transferred; c) transported
5. Input in PC is usually performed by means of a _____ .
a) mouse; b) scanner; c) keyboard
6. A personal computer uses disks as input and output media.
a) hard; b) fixed; c) floppy

7. Personal computers have a lot of _____ , scientific, engineering, educational being among them.
   a) multiplication; b) application; c) investigation
8. Personal computers have a great _____ upon pupils, educators, accountants, stock brokers and who not.
   a) influence; b) information; c) environment
9. A word processing program called application _____ enables you to modify any document in a manner you wish.
   a) hardware; b) software; c) firmware
10. Using a display you can _____ mistakes, _____ words and replace sentences.
    a) delete; b) dial; c) correct

3.2. Тесты для промежуточного и итогового контроля

Вступительный тест

THE BELARUSIAN NATIONAL TECHNICAL UNIVERSITY
65,The Independence Avenue, 22OO27 Minsk, Belarus
(The Introductory Questionnaire & Test)

Your full name.....
Date to Begin Your Major Course.....
In Your Opinion, What is Your Level Of English
Advanced/ Intermediate/ Elementary/ Beginner ?
……. ……. ……. …….
Please, Give Some More Personal Information:
a) *Address* ..... ……..
b) *Phone Number* ..... ……..
c) *Native Place* ……..
d) *Education* ……..
e) *Date of Birth* ……..
f) *Family* ……
g) *How Did You Learn of the BNTU* ……...
h) *Special Skills* ……

Make the Right Choice of Grammar & Lexical Peculiarities. (Only One Variant is Correct). Translate the Complete Sentences in a Written Form.
Discuss the Sentences Marked by the Stars.

1 The BNTU ….. founded in 1920.
a) be □ □ c) was
b) am □ □ d) are

2 The University … 18 buildings.
a) occupy □ □ c) occupies
b) occupying □ □ d) to occupy

3 Scientific conferences … at the BNTU every year.
a) held □ □ c) are holding
b) are held □ □ d) are being held

4 Doctor of Philosophy (PhD) is the … degree.
a) high □ □ c) more high
b) highest □ □ d) bigger

5 Atomic Power station … in Belarus.
a) is built □ □ c) will be built
b) was built □ □ d) has been built

6 There is a considerable difference … "sensible" and "sensitive".
a) between □ □ c) among
b) amongst □ □ d) behind

7 This mobile phone…. . There's something wrong with it.
a) doesn't function □ □ c) doesn't work
b) isn't well □ □ d) isn't mine

8 The BNTU … to be an Institute and then an Academy.
a) had □ □ c) was
b) used □ □ d) has

9 By the time the teacher arrived, the classroom was empty; the students ... .
a) left □ □ c) were leaving
b) had left □ □ d) have left

10 Engineering is the design, analysis, and/or construction of works … practical purposes.
a) in □ □ c) for
b) about □ □ d) on

11 … you answer the phone? I'm in the shower.
a) do □ □ c) could
b) should □ □ d) may

12 Knowledge is … .
a) nothing □ □ c) something
b) power □ □ d) anything

13 … of the future will be able to use methods and materials that are only dreams today.
a) architecture □ □ c) architectors
b) architecters □ □ d) architects

14 Every modern thing is made … engineers.
a) for □ □ c) buy
b) with □ □ d) by

15 Thomas Edison couldn't help … the laws of electricity.
a) study □ □ c) to study
b) studying □ □ d) studied

16 "Wonders are many and nothing is more wonderful …
a) that □ □ c) then
b) than □ □ d) than that

17 Not everybody is … … vacuum and compressor technology, but she is.
a) interest □ □ c) interesting
b) interested in □ □ d) interested

18 He has been studying music and foreign languages … childhood.
a) for □ □ c) since
b) during □ □ d) science

19 He thinks … many interesting places to visit in Belarus.
a) it is □ □ c) there
b) there are □ □ d) are

20 Students want their teachers … well qualified and understanding.
a) be □ □ c) to be
b) are □ □ d) being

21 … must be careful when one drives a car or caries laboratory experiments or does engineering works.
a) you □ □ c) he
b) one □ □ d) everybody

22 One good … of calming down is to change scenery.
a) technique □ □ c) technical
b) technology □ □ d) technics

23 Denis is good at English. He does and translates English texts …
a) better □ □ c) well
b) good □ □ d) badly

24 "What does your teacher of mathematics look like?"
a) He likes girls □ □ c) He's very nice
b) He's tall and handsome □ □ d) Very carefully

25 At the BNTU students can get knowledge in … fields of science.
a) few □ □ c) little
b) a few □ □ d) many

26 If I … good at technical subjects, I would enter the BNTU.
a) was □ □ c) am
b) were □ □ d) feel

Test 1

Variant A

№ 1. Skim the text.

What is a computer?

Computers are well-known to represent a completely new **branch** of science. They were developed to help humans to store and recall information, to analyse incoming information, to carry out speedily numerical calculations. A high speed electronic computer permits to do in hours what have taken hundreds of years to accomplish without a computer.

How does a computer solve a problem? How does it store information and retrieve it? How does it remember instructions, follow them, and even change them on the basis of pre-established conditions?

Very generally a computer is outwardly an assemblage of electromechanical and electronic modules. The modules contain interconnected transistors, diodes, capacitors and other parts designed into different switching devices. All are microminiaturized to the extent that scores of complete integrated circuits are chemically formed on thin film "chips". This electronic machine works according to a programme prepared in advance which determines the sequence of operation.

The computer performs all the mentioned feats much the same as a human being or like a calculating machine. The five basic functions of any digital computer are: (1) input, (2) storage, (3)control, (4) processing, (5) output.

Before solving a problem you must gather facts and data and store them in your **mind**. The computer receives them in the form at binary codes and stores them on tapes, discs, drums, cores or plastic cards, i.e. its electronic memory.

The computer does have the properties similar to those of the adding machine. It can add, subtract, multiply, divide, list, and also uniquely make decisions, i.e. select on the basis of stored instructions. This stored-programme concept and memory **capability** are the two main characteristics of any computer.

The control function simply means following the instructions very precisely as programmed and stored. The computer must be instructed (programmed) every step of the way. Thus programming appears to be the primary essential of computer control.

The output of the computer takes many forms. Generally, it is printed, put on cards or tape, stored in memory, displayed on a cathode-ray tube, or communicated to other remote devices. One might compare the five computer functions to the simple calculator, where the keyboard is an input device.

The sequence and method of manipulation of the keys represents the control function, i.e. the sequence of steps. The use of scratch paper for data could be **considered** memory or storage means. The movement of gears, counters and levers on a calculator would correspond to the processing of the computer. The figures printed on the tapes **relate** to the output of the computer. This is much too simplified, but it does aid to explain the five general logic components of the computer.

Notes:

1. outwardly – внешне

2. extent - экстент (непрерывная область памяти на диске)
3. scores - множество (большое количество)
4. eat - ловкость, искусство, мастерство
5. scratch paper - бумага для заметок, черновиков
6. gear - устройство, прибор
7. lever рычаг; средство воздействия

№ 2. Choose the contextual meaning of the words.

1. *branch*	a)ветка	b) отрасль	c) филиал
2. *capability*	a) способность	b) производительность	c) стойкость
3. *mind*	a) психика	b) память	c) мнение
4. *consider*	a) обдумывать	b) обсуждать	c) рассматривать
5. *relate*	a) реагировать	b) рассказывать	c) относиться

№ 3. Choose the best translation.

1. The computer does have the properties similar to those of the adding machine.

a) Компьютер делает свойства подобно счетной машине.

b) Компьютер действительно имеет свойства подобные свойствам счетной машины.

c) Компьютер действительно имеет свойства подобные тем, что у добавленной машины.

2. Computers are well-known to represent a completely new branch of science.

a) Широко известно, что компьютеры представляют совершенно новую отрасль науки.

b) Хорошо известные компьютеры представляют полностью новую отрасль науки.

c) Компьютеры являются хорошо известными устройствами, чтобы представлять совершенно новую отрасль науки.

№ 4. Decide whether the following statements are true or false.

1. A high speed electronic computer permits to do in minutes what have taken hundreds of years to accomplish without a computer.
2. A computer is outwardly an assemblage of electromechanical and electronic modules.
3. A computer works according to a programme prepared in advance which determines the sequence of operation.
4. Before solving a problem you must analyse facts and data.
5. The stored-programmed concept and memory capability are the two main characteristics of the adding machine.

№ 5. Choose a, b or c.

Electronic computers are basically of two types, analog and digital, according to the manner in which they – 1- data.

An analog computer is so – 2 - because it performs setting up physical situations that are analogous to mathematical situations. An analog computer – 3 -on data in the form of continuously variable quantities such as pressure, temperature, revolutions, speed of sound, or voltage. Thus an analog computer – 4 - essentially a measuring device. Digital computers operate in representations of real numbers or other characters – 5 - numerically.

1. a) represents b) representing c) represent
2. a) naming b) named c) name
3. a) operate b) had operated c) operates
4. a) is b) are c) have been
5. a) coding b) coded c) code

№ 6. Read the text. Choose the best summary.

A general purpose computer has four main components: the arithmetic logic unit (ALU), the control unit, the memory, and the input and output devices (collectively termed I/O). These parts are interconnected by busses, often made of groups of wires.

Inside each of these parts are thousands to trillions of small electrical circuits which can be turned off or on by means of an electronic switch. Each circuit represents a bit (binary digit) of information so that when the circuit is on it represents a "1", and when off it represents a "0". The circuits are arranged in logic gates so that one or more of the circuits may control the state of one or more of the other circuits.

The control unit, ALU(the arithmetic logic unit), registers, and basic I/O (the input and output devices) (and often other hardware closely linked with these) are collectively known as a central processing unit (CPU). Early CPUs were composed of many separate components but since the mid-1970s CPUs have typically been constructed on a single integrated circuit called a microprocessor.

A The text deals with small electrical circuits inside each of the main part of the computer.

B The text is about a central processing unit.

C The circuits which are arranged in logic gates are described in the text.

№7. Make double translation.

1.Soon punched cards were replaced by keyboard terminals.

2. Данные, необходимые для решения проблем, хранятся в памяти компьютера.

Test 1

Variant B

№ 2. Skim the text.

What is a computer?

Computers are well-known to represent a completely new branch of science. They were developed to help humans to store and recall information, to analyse incoming information, to carry out speedily numerical calculations. A high speed electronic computer permits to do in hours what have taken hundreds of years to accomplish without a computer.

How does a computer solve a problem? How does it store information and retrieve it? How does it remember instructions, follow them, and even change them on the basis of pre-established conditions?

Very generally a computer is outwardly an **assemblage** of electromechanical and electronic modules. The modules contain interconnected transistors, diodes, capacitors and other parts designed into different switching devices. All are microminiaturized to the extent that scores of complete integrated circuits are chemically formed on thin film "chips". This electronic machine works according to a programme prepared in advance which determines the sequence of operation.

The computer performs all the mentioned feats much the same as a human being or like a calculating machine. The five basic functions of any digital computer are: (1) input, (2) storage, (3)control, (4) processing, (5) output.

Before solving a problem you must gather facts and data and store them in your mind. The computer receives them in the form at binary codes and stores them on tapes, discs, drums, cores or plastic cards, i.e. its electronic memory.

The computer does have the properties similar to those of the adding machine. It can add, subtract, multiply, divide, list, and also uniquely make decisions, i.e. select on the basis of stored instructions. This stored-programme concept and memory capability are the two main characteristics of any computer.

The control function simply means following the instructions very precisely as programmed and stored. The computer must be instructed (programmed) every step of the way. Thus programming **appears** to be the primary essential of computer control.

The output of the computer takes many forms. Generally, it is printed, put on cards or tape, stored in memory, displayed on a cathode-ray tube, or communicated to other remote devices.

One might compare the five computer functions to the simple calculator, where the keyboard is an input device.

The **sequence** and method of manipulation of the keys represents the control function, i.e. the sequence of steps. The use of scratch paper for data could be considered memory or storage means. The movement of gears, **counters** and levers on a calculator would correspond to the processing of the computer. The figures printed on the tapes relate to the output of the computer. This is much too simplified, but it does **aid** to explain the five general logic components of the computer.

Notes:
1. outwardly – внешне
2. extent - экстент (непрерывная область памяти на диске)
3. scores - множество (большое количество)
4. eat - ловкость, искусство, мастерство
5. scratch paper - бумага для заметок, черновиков
6. gear - устройство, прибор
7. lever рычаг; средство воздействия

№ 2. Choose the contextual meaning of the words.

1. *assemblage*	a) собирание	b) комплект	c) скопление
2. *appear*	a) оказаться	b) появляться	c) издаваться
3. *sequence*	a) результат	b) очередность	c) последовательность
4. *counter*	a) прилавок	b) счетчик	c) пересчетная схема
5. *aid*	a) добавлять	b) помогать	c) содействовать

№ 3. Choose the best translation.

1. Thus programming appears to be the primary essential of computer control.

a) Такое программирование является первичной сущностью контроля компьютера.
b) Таким образом появляется программирование, чтобы стать сущностью контроля компьютера.
c) Таким образом, оказывается, что программирование является главной сущностью компьютерного контроля.

2. This is much too simplified, but it does aid to explain the five general logic components of the computer.

a) Это слишком упрощенно, но это действительно помогает объяснить пять основных логических компонентов компьютера.
b) Это также упрощает, но и действительно помогает раскрыть пять основных логических компонентов компьютера.
c) Это многое также упрощает, но и делает возможным раскрыть пять основных логических компонентов компьютера.

№ 4. Decide whether the following statements are true or false.

1. Computers were developed to help humans to store and recall information, to analyse incoming information, to carry out speedily numerical calculations.
2. All are microminiaturized to the extent that scores of complete integrated circuits are chemically formed on thick film "chips".
3. The four basic functions of any digital computer are: (1) input, (2) storage, (3) processing, (4) output.
4. The computer receives facts and data in the form at binary codes and stores them in its electronic memory.
5. The output of the computer is printed, put on cards or tape, stored in memory, displayed on a cathode-ray tube, or communicated to other remote devices.

№ 5. Choose a, b or c.

The digital computer has a memory and solves problems by counting precisely, adding, subtracting, multiplying, dividing and comparing.

Modern digital computers - 1 - only one – 2 - instruction in the same instant of time. But their speed – 3 - them to jump quickly from programme to programme, to permit them to continuously monitor several processes simultaneously. They – 4 - a significant tool for factory automation. It is even possible to think of this type of a computer as a robot since it is doing a job that – 5 - earlier by a man.

1. a) execute b) executes c) were execute
2. a) code b) coding c) coded
3. a) enable b) enabling c) enables
4. a) has become b) have become c) have became
5. a) is performed b) was performed c) will be performed

№ 6. Read the text. Choose the best summary.

Computer memory refers to devices that are used to store data or programs (sequences of instructions) on a temporary or permanent basis for use in an electronic digital computer. Computers represent information in binary code, written as sequences of 0s and 1s. Each binary digit (or "bit") may be stored by any physical system that can be in either of two stable states, to represent 0 and 1. Such a system is called biostable. This could be an on-off switch, an electrical capacitor that can store or lose a charge, a magnet with its polarity up or down or a surface that can have a pit or not. Today, capacitors and transistors, functioning as tiny electrical switches, are used for temporary storage, and either disks or tape with a magnetic coating, or plastic discs with patterns of pits are used for long-term storage.

Computer memory is usually meant to refer to the semiconductor technology that is used to store information in electronic devices. Current primary computer memory makes use of integrated circuits consisting of silicon-based transistors.

A The text deals with a binary code.
B The text is about capacitors and transistors.
C Computer memory is discussed in this text.

№7. Make double translation.

1. The first-generation computers were unreliable and often burned out.
2. Введение информации в компьютер осуществляется посредством дискет.

Test 2

Variant A

№ 1. Skim the text.

Computers in science.

Computers are perhaps the most useful tools ever invented by mankind. In this, the era of computers, they are used to count our votes, figure our bank accounts, help plan new buildings and bridges, guide our astronauts through space and assist management in its everyday decisions.

The dynamic introduction of the computer has changed man's information needs entirely. Man has developed methods of compiling and analyzing large quantities of data with a minimum amount of human **intervention**. Technological advances in all fields have been dynamic and extensive. The methods of applying data processing systems to information needs are boundless. With each new application, data processing systems can be used to help man increase his productivity and **advance** civilization further. It's a giant step forward in man's utilization of science and knowledge as a means of progress.

What can computers do for the scientist? Now weather scientists are able to work out astronomical number of calculations for predicting weather changes. They are even working on a mathematic model of the world's weather that may some day enable us to make accurate weather forecasts a year or more ahead of time.

In medicine computers are helping researchers test drugs by extrapolating the information gained in limited **trial**s, so that large scale tests will not only be safer, but will yield far more useful information. Computers are helping doctors make diagnoses by winnowing down the information a doctor has to go through to arrive at a valid conclusion.

Biochemists are using computers as a sort of mathematical microscope, in delving into the secret of the living **cell;** they have found a physical limit to the information they can obtain with their instruments. By using computers they have already obtained and are beginning to construct an accurate picture of the giant molecules that are the building blocks of all living things.

In astronomy, computers, of course, serve as computational workhorses, figuring out the exact positions and orbits of planets, stars and other **heavenly** bodies. With the growing importance of radio telescope, computers have been especially valuable in analyzing the patterns of signal received from outer space, separating the meaningful signals from the electronic roar of background "noise" that accompanies them.

Space technology would be almost unthinkable without the power of the computer. This is an area of science that requires the combined knowledge of all other sciences - physics,
chemistry, thermodynamics, electronics, mathematics, even psychology. Only computers can bring this large amount of information under control to make it serve our efforts.

The achievements of computers in the fields of space exploration, weather reporting, medical, research and other areas of scientific study have been fantastic. The tremendous storage capacities and rapid processing of data have produced the valuable information necessary for research in the unknown areas of science. Scientific research has moved into the foreground of human activity. In both the pure and applied sciences, computers are

being used to multiply man's thinking power - and to reduce the time he can spend thinking.

Notes:

1. compile - выбирать информацию, собирать материал
2. yield - давать результат, приводить к чему-л.
3. winnow - отсеивать, отбирать
4. delve - тщательно исследовать

№ 2. Choose the contextual meaning of the words.

1. intervention - a) вмешательство b) посредничество c) соучастие
2. advance - a) ускорять b) продвигать c) наступать
3. trial - a) исследование b) переживание c) судебный процесс
4. cell - a) хижина b) ячейка c) клетка
5. heavenly - a) небесный b) божественный c) восхитительный

№ 3. Choose the best translation.

1. ***Computers are helping doctors make diagnoses by winnowing down the information a doctor has to go through to arrive at a valid conclusion.***

a) Компьютеры помогают врачам ставить диагноз, отсеивая информацию, через которую доктор должен пройти, чтобы прийти к верному заключению.

b) Компьютеры помогают врачам ставить диагноз, отбирая информацию, которую доктор имеет, чтобы прийти к верному заключению.

c) Компьютеры помогают врачам ставить диагноз, отбирая информацию, которую доктор должен тщательно изучить, чтобы прийти к верному заключению.

2. ***Only computers can bring this large amount of information under control to make it serve our efforts.***

a) Только компьютеры могут принести это огромное количество информации для контролирования, чтобы заставить служить ее нашим достижениям.

b) Только компьютеры могут контролировать это огромное количество информации, чтобы заставить служить ее нашим исследованиям.

c) Только компьютеры могут контролировать такое огромное количество информации, чтобы она служила нашим усилиям.

№ 4. Decide whether the following statements are true or false.

1. The dynamic introduction of the computer has partially changed man's information needs.
2. The methods of applying data processing systems are limited.
3. Weather scientists are working on a mathematic model of the world's weather that may some day enable us to make accurate weather forecasts a year or more ahead of time.
4. In medicine computers are helping doctors make diagnoses by winnowing down the information.
5. Space technology is an area of science that requires the combined knowledge of all other sciences - physics, chemistry, thermodynamics, electronics, mathematics, even psychology.

№ 5. Choose a, b or c.

In 1983, researcher Fred Cohen – **1** - a computer virus as "a program that can "infect" other programs by – **2** - them to include a version of itself." This means that viruses copy themselves, usually by encryption or by mutating slightly each time they copy. There are several types of viruses, but the – **3** - that are the – **4** - dangerous – **5** - to corrupt your computer or software programs. Viruses can range from an irritating message flashing on your computer screen to eliminating data on your hard drive.

Notes:

1. encryption - кодирование
2. mutating - мутация
3. irritating – раздражающий

1. a) defines b) defined c) will define
2. a) modifying b) modified c) being modified
3. a) ones b) second c) third
4. a) much b) more c) most
5. a) designing b) is designed c) are designed

№6. Match the words with their definitions.

1. capacity a) facts unorganized but able to be organized
2. computer b) one of the performance characteristics of storage measured in binary digits
3. storage c) the resources required to accomplish the processing of data. These resources are personnel, material, facilities and equipment
4. data d) a device which can carry out routine mental tasks by performing simple operations at high speed
5. data processing e) the part of the computer that receives and stores data for processing
6. data processing system f) a series of operations that result in the conversion of data into useful. Information

№7. Read the text. Choose the best summary.

The fact that the Web is being widely used for multiple purposes is without question. But before overviewing its benefits it is worth considering one fact that became crucial event for it. The question is about a new mode of presenting information. Before, over the Internet and other wide area networks, the text has been the main mode of presentation. The Web changed that. Now the information could be presented in graphical format, complete with font choices and incorporated drawings, photographs, tables and other multimedia elements. These graphical elements offered different kinds of information and information providers were able to search precisely the element. The result of these innovations is that the Web's capabilities are increasing, its information becomes more comprehensible too.

Notes:

1. crucial - ключевой, решающий
2. mode - метод, способ
3. font - шрифт

4. comprehensible - понятный, ясный

A. The text deals with the uses of the Web.
B. The text is about a mode of presenting information in the Web.
C. Incorporated drawings, photographs, tables are described in the text.

№8. Translate the following sentences into Russian.
1. Biochemists are using computers as a sort of mathematical microscope, in delving into the secret of the living cell**;** they have found a physical limit to the information they can obtain with their instruments.
2. The tremendous storage capacities and rapid processing of data have produced the valuable information necessary for research in the unknown areas of science.

Test 2

Variant B
№ 1. Skim the text.

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2. yield - давать результат, приводить к чему-л.
3. winnow - отсеивать, удалять

№ 2. Choose the contextual meaning of the words.

1. advance	a) продвижение	b) наступление	c) достижение
2. drug	a) краситель	b) наркотик	c) лекарство
3. delve	a) копать	b) тщательно исследовать	c) надрываться
4. exact	a) точный	b) аккуратный	c) безошибочный,
5. foreground	a) авансцена	b) самое важное место	c) линия фронта

№ 3. Choose the best translation.

1. ***In both the pure and applied sciences, computers are being used to multiply man's thinking power - and to reduce the time he can spend thinking.***

a) И в теоретической и прикладной науке компьютеры используются для того, чтобы увеличивать мыслительную способность человека и сократить время, которое он может потратить на обдумывание.

b) Обе науки и теоретическая и прикладная используют компьютеры, увеличивая мыслительную силу человека, чтобы сократить время, которое он может потратить на обдумывание.

c) В обеих науках и теоретической и прикладной используются компьютеры, чтобы приумножить человеческую мыслительную силу и уменьшить время, которое он может потратить думая.

2. ***By using computers they have already obtained the information and are beginning to construct an accurate picture of the giant molecules that are the building blocks of all living things.***

a) При использовании компьютеров они уже получили информацию и начинают создавать аккуратную картину гигантских молекул, которые строят блоки всех живых существ.

b) Путем использования компьютеров они уже получили информацию и начинают строить точную картину гигантских молекул, те что являются строительными блоками всех живых существ.

c) Используя компьютеры они уже получили информацию и начинают создавать достоверное описание огромных молекул, которые являются строительными блоками живых существ.

№ 4. Decide whether the following statements are true or false.

1. Man has developed methods of compiling and analyzing large quantities of data with a great amount of human intervention.
2. It's a giant step forward in man's application of science and knowledge as a means of progress.
3. Biochemists are using computers to work out astronomical number of calculations for predicting weather changes.
4. In astronomy, computers, of course, serve as computational workhorses, calculating the exact positions and orbits of planets, stars and other heavenly bodies.
5. The tremendous capacities of storage and rapid data processing have produced the valuable information necessary for research in the unknown areas of science.

№ 5. Choose a, b or c.

The – **1** - "translation engines" were based on a direct, so called "Transformer" approach. Input sentences of the source language – **2** - directly into output sentences of the target language. At first the machine – **3** - a rough analysis of the source sentence – **4** - it into subject-object-verb, etc. Then source words were replaced by target words – **5** - from a dictionary and their order was rearranged according to the rules of the target language.

Notes:

1. source language - язык оригинала
2. target language - язык перевода

1. a) earlier	b) earliest	c) most earliest
2. a) transformed	b) is transformed	c) were transformed
3. a) do	b) have done	c) did
4. a) dividing	b) having been divided	c) being divided
5. a) selecting	b) selected	c) having selected

№6. Match the words with their definitions.

1. capacity	a) a series of operations that result in the conversion of data into useful information
2. computer	b) the resources required to accomplish the processing of data. These resources are personnel, material, facilities and equipment
3. storage	c) a device which can carry out routine mental tasks by performing simple operations at high speed
4. data	d) one of the performance characteristics of storage measured in binary digits

5. data processing e) facts unorganized but able to be organized
6. data processing system f) the part of the computer that receives and stores data for processing

№ 7. Read the text. Choose the best summary.

One of the first to use Web was science. Dissemination of research and scientific discoveries have always been one of the purposes of the Internet and of the Web project at CERN in Switzerland. Today the Web is used as a tool of exchanging scientific information as it has been considered to do. But perhaps more important is that the Web is used to make research discoveries available to the general public, most of this information being presented so that it becomes as easy understandable as possible. Publicly funded research agencies are interested in making their work known to the public, in finding new ways to place information. Booklets and pamphlets distributed through mailing are expensive and usually ignored. The Web is the best way out of the problem.

Notes:

1. dissemination – распространение
2. CERN - ЦЕРН(Conseil Europeen pour la Recherche Nucleaire) Европейская организация по ядерным исследованиям

A. The text is about the Web which is used to make research discoveries available to the general public.
B. The text deals with dissemination of research and scientific discoveries.
C. Numerous applications of the Web are described in the text.

№8. Translate the following sentences into Russian.

1. In medicine computers are helping researchers test drugs by extrapolating the information gained in limited trials, so that large scale tests will not only be safer, but will yield far more useful information**.**

2. With the growing importance of radio telescope, computers have been especially valuable in analyzing the patterns of signal received from outer space, separating the meaningful signals from the electronic roar of background "noise" that accompanies them.

Test 3

Variant A

№ 1. Skim the text.

Memory

A computer's memory can be viewed as a list of cells into which numbers can be placed or read. Each cell has a numbered "address" and can store a single number. The information stored in memory may represent practically anything. Letters, numbers, even computer instructions can be placed into memory with equal **ease**. Since the CPU does not differentiate between different types of information, it is the software's responsibility to give significance to what the memory sees as nothing but a series of numbers.

In almost all modern computers, each memory cell is set up to store binary numbers in groups of eight bits (called a byte). Each byte is able to represent 256 different numbers . To store larger numbers, several **consecutive** bytes may be used (typically, two, four or eight). A computer can store any kind of information in memory if it can be represented numerically. Modern computers have billions or even trillions of bytes of memory.

The CPU contains a special set of memory cells called **register**s that can be read and written to much more rapidly than the main memory area. There are typically between two and one hundred registers depending on the type of CPU. Registers are used for the most frequently needed data items to avoid having to access main memory every time data is needed.

Computer main memory comes in two principal **varieti**es: random-access memory or RAM and read-only memory or ROM. RAM can be read and written to anytime the CPU commands it, but ROM is pre-loaded with data and software that never changes, so the CPU can only read from it. ROM is typically used to store the computer's initial start-up instructions. In general, the contents of RAM are erased when the power to the computer is turned off, but ROM **retain**s its data indefinitely. In a PC, the ROM contains a specialized program called the BIOS that orchestrates loading the computer's operating system from the hard disk drive into RAM whenever the computer is turned on or reset. In embedded computers, which frequently do not have disk drives, all of the required software may be stored in ROM. Software stored in ROM is often called firmware, because it is notionally more like hardware than software. Flash memory blurs the distinction between ROM and RAM, as it retains its data when turned off but is also rewritable. It is typically much slower than conventional ROM and RAM however, so its use is restricted to applications where high speed is unnecessary.

In more sophisticated computers there may be one or more RAM cache memories which are slower than registers but faster than main memory. Generally computers with this sort of cache are designed to move frequently needed data into the cache automatically, often without the need for any intervention on the programmer's part.

Notes:

1. set up - устанавливать
2. consecutive - последующий, следующий
3. erase - стирать, удалять, уничтожать
4. indefinitely - неограниченно

5. orchestrate - управлять
6. reset - сбрасывать
7. BIOS - Basic Input-Output System — базовая система ввода-вывода;
8. embedded computer - встроенный компьютер
9. notionally - теоретически, номинально;
10. blur - размывать, смазывать
11. cache memory - кэш-память

№ 2. Choose the contextual meaning of the words.

1. *ease*	a)облегчение	b) легкость	c) естественность
2. *consecutive*	a) последовательный	b) параллельный	c) следственный
3. *register*	a) запись	b) регистр	c) перечень
4. *variety*	a) многообразие	b) различие	c) вид
5. *retain*	a) сохранять	b) поддерживать	c) аккумулировать

№ 3. Choose the best translation.

1. ***The CPU contains a special set of memory cells called registers that can be read and written to much more rapidly than the main memory area.***

a) Центральный процессор ограничивает тенденцию ячеек памяти, которые называются регистрами, считывать и записывать намного быстрее области основной памяти.

b) Центральный процессор содержит специальный набор ячеек памяти, названые .регистрами, которые могут считываться и записываться намного быстрее чем область основной памяти.

c) Центральный процессор содержит специальный набор ячеек памяти, названые .регистрами, которые могут считывать и записывать информацию намного быстрее чем область основной памяти.

2. ***In general, the contents of RAM are erased when the power to the computer is turned off, but ROM retains its data indefinitely.***

a) В общем, содержание оперативного запоминающего устройства удаляется, когда компьютер выключен, но постоянное запоминающее устройство сохраняет свои данные неограниченно долго.

b) Вообще. содержание постоянного запоминающего устройства стирается, когда мощность компьютера выключается, но оперативное запоминающее устройство сохраняет свои данные неограниченно долго.

c) В общем, содержание оперативного запоминающего устройства удаляется, когда компьютер включен, но постоянное запоминающее устройство сохраняет свои данные неограниченно долго.

№ 4. Decide whether the following statements are true or false.

1. A computer's memory can be viewed as a list of cells or boxes into which numbers can be placed or read.
2. It is the hardware`s responsibility to give significance to what the memory sees as nothing but a series of numbers.

3. There are typically between two and one hundred condensers depending on the type of CPU.
4. Computer main memory includes random-access memory or RAM and read-only memory or ROM.
5. BIOS orchestrates loading the computer's operating system from the hard disk drive into RAM whenever the computer is turned on or reset.

№ 5. Choose a, b or c.

The early foundations of what would become computer science predate the invention of the modern digital computer. Machines for **-1-** fixed numerical tasks, such as the abacus, **-2-** since antiquity. Wilhelm Schickard **-3-** the first mechanical calculator in 1623. Charles Babbage designed a difference engine in Victorian times **-4-** by Ada Lovelace. Around 1900, punch-card machines **-5-** .However, all of these machines were constrained to perform a single task, or at best some subset of all possible tasks.

1. a) calculate	b) calculated	c) calculating
2. a) have existed	b) existed	c) exist
3. a) built	b) build	c) was built
4. a) helping	b) helped	c) having helped
5. a) introduced	b) was introduced	c)were introduced

№ 6. Read the text. Choose the best summary.

Computers are all around us and avoiding them is virtually impossible. We have been exposed in the world of computer hype, computer advertisements and computer headlines. We interact with computers in our daily lives - whether we are at the cinemas, the school, or the public library. The beginnings of computer literacy are already apparent. Whether or not people know anything about it, they invoke computers in every day lives when they make a bank withdrawal, buy groceries at the supermarket and even when they drive a car. Today, millions of people are purchasing fully functional personal computers for individual reasons

There are so many applications of computers, that it is impractical to mention all of them. This is the Computer Age and these machines are beginning to affect out lives in many ways. Computers are now becoming faster, more reliable, effective and whole lot cheaper than they had been ever before.

A The text deals with the computers which are becoming faster, more reliable, effective and more expensive than they had been ever before.

B The text is about people who are purchasing fully functional personal computers for individual reasons

C Numerous applications of computers are described in the text.

№7. Make double translation.

1.The principal primary storage circuit elements are solid-state devices: magnetic cores and semiconductors

2. Большинство компьютерных систем используют электронную память для первичного ЗУ и электромеханическую память для вторичного ЗУ.

Test 3

Variant B

№ 1. Skim the text.

Memory

A computer's memory can be viewed as a list of cells into which numbers can be placed or read. Each cell has a numbered "address" and can store a single number. The information stored in memory may represent practically anything. Letters, numbers, even computer instructions can be placed into memory with equal ease. Since the CPU does not differentiate between different types of information, it is the software's responsibility to give significance to what the memory sees as nothing but a series of numbers.

In almost all modern computers, each memory **cell** is set up to store binary numbers in groups of eight bits (called a byte). Each byte is able to represent 256 different numbers . To store larger numbers, several consecutive bytes may be used (typically, two, four or eight). A computer can store any kind of information in memory if it can be represented numerically. Modern computers have billions or even trillions of bytes of memory.

The CPU contains a special **set** of memory cells called registers that can be read and written to much more rapidly than the main memory area. There are typically between two and one hundred registers depending on the type of CPU. Registers are used for the most frequently needed data **item**s to avoid having to access main memory every time data is needed.

Computer main memory comes in two principal varieties: random-access memory or RAM and read-only memory or ROM. RAM can be read and written to anytime the CPU commands it, but ROM is pre-loaded with data and software that never changes, so the CPU can only read from it. ROM is typically used to store the computer's **initial** start-up instructions. In general, the contents of RAM are erased when the power to the computer is turned off, but ROM retains its data indefinitely. In a PC, the ROM contains a specialized program called the BIOS that **orchestrates** loading the computer's operating system from the hard disk drive into RAM whenever the computer is turned on or reset. In embedded computers, which frequently do not have disk drives, all of the required software may be stored in ROM. Software stored in ROM is often called firmware, because it is notionally more like hardware than software. Flash memory blurs the distinction between ROM and RAM, as it retains its data when turned off but is also rewritable. It is typically much slower than conventional ROM and RAM however, so its use is restricted to applications where high speed is unnecessary.

In more sophisticated computers there may be one or more RAM cache memories which are slower than registers but faster than main memory. Generally computers with this sort of cache are designed to move frequently needed data into the cache automatically, often without the need for any intervention on the programmer's part.

Notes:

1. set up - устанавливать

2. consecutive - последующий, следующий
3. erase - стирать, удалять, уничтожать
4. indefinitely - неограниченно
5. reset – сбрасывать
6. BIOS - Basic Input-Output System — базовая система ввода-вывода;
7. embedded computer - встроенный компьютер
8. notionally - теоретически, номинально;
9. blur - размывать, смазывать
10. cache memory кэш-память

№ 2. Choose the contextual meaning of the words.

1. *cell*	a) ячейка	b) ящик	c) камера
2. *set*	a) затвердевание	b) тенденция	c) набор
3. *item*	a) предмет	b) статья	c) элемент
4. *initial*	a) исходный	b) заглавный	c) примитивный
5. *orchestrate*	a) оркестровать	b) управлять	c) сочетать

№ 3. Choose the best translation.

1. ***There are typically between two and one hundred registers depending on the type of CPU.***

a) Существуют типично между двумястами и сотней регистров в зависимости от типа центрального процессора.
b) Обычно существуют от двухсот до ста регистров, зависимых от типа центрального процессора.
c) Обычно существуют от двухсот до ста регистров в зависимости от типа центрального процессора.

2. ***Software stored in ROM is often called firmware, because it is notionally more like hardware than software.***

a) Программное обеспечение сохранялось в постоянном запоминающем устройстве и часто называлось встроенным программным обеспечением, потому что ему теоретически больше нравится аппаратное обеспечение чем программное.
b) Программное обеспечение, сохраненное в постоянном запоминающем устройстве, часто называется встроенным программным обеспечением, потому что оно теоретически больше похоже на аппаратное обеспечение чем на программное.
c) Программное обеспечение сохранялось в оперативном запоминающем устройстве, оно часто называется встроенным программным обеспечением, потому что оно теоретически больше похоже на аппаратное обеспечение чем на программное.

№ 4. Decide whether the following statements are true or false.

1. The information stored in memory may represent letters, numbers, even computer instructions

2. In almost all modern computers, each memory cell is set up to store binary numbers in groups of eight or nine bits
3. A special set of memory cells is used for the most frequently needed data items to avoid having to access main memory every time data is needed.
4. CPU can read and write from ROM.
5. Flash memory retains its data when turned off and is also rewritable.

№ 5. Choose a, b or c.

During the 1940s, as newer and **-1-** computing machines were developed, the term *computer* **-2-** to refer to the machines rather than their human predecessors. As it became clear that computers **-3-** be used for more than just mathematical calculations, the field of computer science broadened to study computation in general. Computer science began **-4-** as a distinct academic discipline in the 1950s and early 1960s. The first computer science degree program in the United States **-5-** at Purdue University in 1962. Since practical computers became available, many applications of computing have become distinct areas of study in their own right.

1. a) more powerful	b) powerful	c) most powerful
2. a) comes	b) came	c) will come
3. a) could	b) can	c) have to
4. a) to establish	b) to be establishing	c) to be established
5. a) was formed	b) is formed	c) formed

№ 6. Read the text. Choose the best summary.

The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronic and optical networking technologies. The Internet carries a vast array of information resources and services, most notably the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail.

Most traditional communications media, such as telephone and television services, are reshaped or redefined using the technologies of the Internet, giving rise to services such as Voice over Internet Protocol (VoIP). Newspaper publishing has been reshaped into Web sites, blogging, and web feeds. The Internet has enabled or accelerated the creation of new forms of human interactions through instant messaging, Internet forums, and social networking sites.

Notes:
1.array – массив
2.Internet Protocol Suite – стек протоколов IP

A The text deals with the most traditional communications media.
B The text is about internet users.
C Internet and its applications are discussed in this text.

№7. Make double translation.

1. Magnetic tape, which was invented by the Germans during World War II for sound recording, is the oldest secondary storage medium in common use.
2. Числа и команды, образующие программу, хранятся в памяти.

4. Итоговый лексико-грамматический тест

Вариант I

I. Переведите на русский язык следующие предложения, обращая внимание на функции причастия.

1. Early computers, using vacuum tubes could perform computations in thousands of seconds, called milliseconds.
2. When written in a symbolic language programs require the translation into the machine language.
3. Being discrete events commercial transactions are in a natural form for a digital computer.
4. The control unit interpreting instructions is one of the important parts of any computer system.
5. Having been coded the instruction was transmitted to the central processing unit.

II. Выберите предложения, в которых употреблен «независимый причастный оборот», и переведите их.

1. Being built on the basis of transistors lasers are successfully used in technology.
2. We use the term data processing to include the resources applied for processing of information.
3. The results of arithmetic operations are returned to the accumulator, the storage register transferring them to main memory.
4. An electron leaving the surface, the metal becomes positively changed.
5. The necessary data having been obtained, we could continue our experiment.

III. Найдите предложения, в которых употреблен герундий, и переведите их.

1. Neumann developed the idea of keeping instructions for the computer inside the computers' memory.
2. Electromechanical memories depend upon moving mechanical parts for their operation.
3. Another important achievement in developing computers came in 1947.
4. We can make the computers do what we want by inputting signals and turning switchers on and off.
5. Having invented magnetic tapes the Germans used them as the secondary storage medium.

IV. Переведите следующие предложения, обращая внимание на функции инфинитива.

1. Data are processed to become useful information.

2. The high-speed devices to be used as secondary storage are both input and output devices.
3. Processing is operations on data to convert them into useful information.
4. Mendeleyev`s periodic law to have been accepted as a universal law of nature is of great importance nowadays.
5. Russia was the first country to start the cosmic era.

V. Найдите предложения, в которых употреблена конструкция «Complex Object», и переведите их.

1. Personal computers are known to enjoy great popularity.
2. The students saw the computer began to work.
3. He is certain to become a good computer system architect.
4. We know the machine to react to a series of electrical impulses that can be represented in binary numbers.
5. Engineers expect these new devices to be tested very soon.

VI. Найдите предложения, в которых употреблена конструкция «Complex Subject», и переведите их.

1. The substances are said to vary in their composition.
2. The words «computer» and «processor» are known to be used interchangeably.
3. They want their son to become a computer operator.
4. It was not difficult for the pupils to understand the function of the mouse in a computer operation.
5. Primary storage appears to have the least capacity and to be the most expensive.

Вариант II

I Переведите на русский язык следующие предложения, обращая внимание на функции причастия.

1. The computer could create ballistic tables used by naval artillery.
2. When using a microcomputer you are constantly making choice – to open a file, to close a file, and so on.
3. The designer left the office having looked through all the documents.
4. Being not visible software makes possible the effective operation of computer system.
5. Having been well regulated by the operator the equipment operated well.

II Выберите предложения, в которых употреблен «независимый причастный оборот», и переведите их.

1. Primary storage having similarity to a function of the human brain, the storage is also called memory.
2. The first machines designed to manipulate punched card data were widely used for business data processing.

3. Computer system architecture is organized around the primary storage unit, all instructions passing through it.
4. Free electrons passing through a conductor form an electric current.
5. All the necessary preparations having been done, the operator began assembling the machine.

III Найдите предложения, в которых употреблен герундий, и переведите их.

1. Information to be put into the computer for processing should be coded into ones and zeros.
2. Neumann`s machine called EDVAC was able to store both data and instructions.
3. Having translated the program into machine language the computer architect put the program into the machine.
4. Neumann also contributed to the idea of storing data and instructions in a binary code.
5. Computing is a concept embracing not only arithmetics, but also computer literacy.

IV Переведите следующие предложения, обращая внимание на функции инфинитива.

1. They discussed the problem to be solved within a month.
2. Computers use 2 conditions, high voltage and low voltage, to translate the symbols into combination of electrical pulses.
3. Microelectronics made it possible to reduce the size of transistors.
4. A printer is an example of a device to produce output in a human-readable format.
5. Computers to have been designed originally for arithmetic purposes are applied for great variety of tasks at present.

V Найдите предложения, в которых употреблена конструкция «Complex Object», и переведите их.

1. Scientists consider silicon to be one of the best materials.
2. There is no reason for computer experts to use computers of the first generation nowadays.
3. The memory is known to store the instructions and the data.
4. We believe personal computers to enjoy great popularity.
5. We know all the data to be translated into binary code before being stored in main storage.

VI Найдите предложения, в которых употреблена конструкция «Complex Subject», и переведите их.

1. My friend is unlikely to become a good applications programmer.
2. We expect the results of the experiment to be of great importance for our research.
3. The new equipment is sure to find wide application.
4. They are considered to be the most commonly used devices.
5. The mechanism is provided with special devices for the whole system to function automatically.

3.3. Предметно-тематическое содержание зачета и экзамена

Зачет по дисциплине «Иностранный язык (английский)» основывается на результатах текущего и промежуточного контроля и направлен, с одной стороны, на проверку умения работы с текстом, а с другой стороны, на проверку коммуникативных навыков и умений, приобретенных студентами на соответствующем этапе обучения.

Требования к зачету:

Письменная часть

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального общенаучного или общетехнического текста с иностранного языка на родной со словарем. Объем - 1000 печатных знаков. Время выполнения - 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации (10-12 предложений) и неподготовленная беседа с преподавателем в рамках данной ситуации (6-7 реплик).

2. Реферирование оригинального или частично адаптированного культурологического или научно-популярного текста на иностранном языке; беседа на иностранном языке по содержанию текста. Объем текста - 700 печатных знаков. Время выполнения - 10 мин.

Экзамен включает следующие задания:

Письменная часть

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального профессионально-ориентированного текста с иностранного языка на родной со словарем. Объем - 1300-1500 печатных знаков. Время - 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации и неподготовленная беседа с преподавателем в рамках данной ситуации (по предметно-тематическому содержанию дисциплины).

2. Реферирование аутентичного или частично адаптированного общественно-политического, культурологического, научно-популярного текста; беседа на иностранном языке по содержанию текста. Объем текста - 900 печатных знаков. Время - 5-7 мин.

Перечень тем, выносимых на экзамен для устного собеседования:

1. Students’ life.
2. My Specialty.
3. What is a computer?
4. Four Generations of Computers.
5. Data Processing Systems.
6. Hardware, Software and Firmware.
7. Functional Units of Digital Computers.
8. Storage Units and Devices.
9. The CPU Main Components.

10. Input-Output Devices.
11. Personal Computers and Their Application.
12. Computer Programming Languages.

4. Вспомогательный раздел

4.1. Учебная программа по дисциплине «Иностранный язык (английский)»

ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Цели и задачи дисциплины «Иностранный язык (английский)»

Учебная программа «Иностранный язык (английский)» разработана для специальностей 1-08 01 01 «Профессиональное обучение (по направлениям)» и 1-08 01 01-07 «Профессиональное обучение (информатика)» инженерно-педагогического факультета БНТУ.

Целью изучения дисциплины является формирование иноязычной коммуникативной компетенции будущего специалиста, позволяющей использовать иностранный язык как средство профессионального и межличностного общения.

В процессе достижения главной цели решаются следующие **задачи:**

познавательные, позволяющие сформировать представление об образе мира как целостной многоуровневой системе (этнической, языковой, социокультурной и т.п.); об уровне материальной и духовной культуры; системе ценностей (религиозно-философских, эстетических и нравственных); особенностях профессиональной деятельности в соизучаемых странах;

развивающие, позволяющие совершенствовать речемыслительные и коммуникативные способности, память, внимание, воображение, формирование потребности к самостоятельной познавательной деятельности и т. д.;

воспитательные, связанные с формированием общечеловеческих, общенациональных и личностных ценностей, таких как: гуманистическое мировоззрение, уважение к другим культурам, патриотизм, нравственность, культура общения;

практические, предполагающие овладение иноязычным общением в единстве всех его компетенций (языковой, речевой, социокультурной, компенсаторной, учебно-познавательной), функций (этикетной, познавательной, регулятивной, ценностно-ориентационной) и форм (устной и письменной), что осуществляется посредством взаимосвязанного обучения всем видам речевой деятельности в рамках определенного программой предметно-тематического содержания, а также овладения технологиями языкового самообразования.

В качестве стратегической интегративной компетенции в процессе обучения английскому языку выступает коммуникативная в единстве всех составляющих: - языковой, речевой, социокультурной, компенсаторной, учебно-познавательной компетенций.

Языковая компетенция - совокупность языковых средств (фонетических, лексических, грамматических), а также правил их использования в коммуникативных целях.

Речевая компетенция - совокупность навыков и умений всех видов речевой деятельности (говорение, письмо, аудирование, чтение), знание норм речевого поведения, способность использовать языковые средства в связной речи в соответствии с ситуацией общения.

Социокультурная компетенция - совокупность знаний о национально-культурной специфике стран изучаемого языка и связанных с этим умений корректно строить свое речевое и неречевое поведение.

Компенсаторная компетенция - совокупность умений использовать дополнительные вербальные средства и невербальные способы решения коммуникативных задач в условиях дефицита имеющихся языковых средств.

Учебно-познавательная компетенция — совокупность общих и специальных учебных умений, необходимых для осуществления самостоятельной деятельности по овладению иностранным языком.

В результате изучения дисциплины «Иностранный язык (английский)» студент должен **знать*:***

- систему иностранного языка в его фонетическом, лексическом и грамматическом аспектах;
- социокультурные нормы бытового и делового общения в современном поликультурном мире;
- историю и культуру страны изучаемого языка;

уметь:

- анализировать иноязычный текст с позиций его структурных, лексических и стилистических особенностей;
- оперировать различными видами речевой деятельности (говорение, аудирование, чтение, письмо);
- вести общение профессионального и социокультурного характера на иностранном языке, сочетая диалогические и монологические формы речи;
- читать литературу на иностранном языке по профилю обучения (изучающее, ознакомительное, просмотровое и поисковое чтение);
- понимать аутентичную иноязычную речь в объеме программной тематики;
- использовать иностранный язык в качестве инструмента профессиональной деятельности: перевод и реферирование профессионально ориентированных и научных текстов, выступление с публичной речью, составление деловой документации;
- пользоваться правилами речевого этикета.

Требования к практическому владению видами речевой деятельности

Рецептивные умения

Аудирование

Студент должен уметь:

- воспринимать на слух иноязычную речь в естественном темпе (аутентичные монологические и диалогические тексты, в том числе профессионально ориентированные), с разной полнотой и точностью понимания их содержания;
- воспроизводить услышанное при помощи повторения, перефразирования, пересказа.

Учебные аудио- и видеотексты могут включать до 5 % незнакомых слов, не влияющих на понимание основного содержания.

Чтение

Студент должен уметь:

- владеть всеми видами чтения (изучающее, ознакомительное, просмотровое, поисковое), предполагающими разную степень понимания прочитанного;
- полно и точно понимать содержание разножанровых аутентичных текстов, в том числе профессионально ориентированных, используя двуязычный словарь (изучающее чтение);
- понимать общее содержание текста (70 %), определять не только круг затрагиваемых вопросов, но и то, как они решаются (ознакомительное чтение).
- получать общее представление о теме, круге вопросов, которые затрагиваются в тексте (просмотровое чтение);
- найти конкретную информацию (определение, правило, цифровые и другие данные), о которой заранее известно, что она содержится в данном тексте (поисковое чтение).

Тексты, предназначенные для просмотрового, поискового и ознакомительного чтения, могут включать до 10 % незнакомых слов.

Продуктивные умения

Говорение

Монологическая речь

Студент должен уметь:

- продуцировать развернутое подготовленное и неподготовленное высказывание по проблемам социокультурного и профессионального общения, перечисленным в настоящей программе;
- резюмировать полученную информацию;
- аргументированно представлять свою точку зрения по описанным фактам и событиям, делать выводы.

Примерный объем высказывания 15 фраз.

Диалогическая речь

Студент должен уметь:

- вступать в контакт с собеседником, поддерживать и завершать беседу, используя адекватные речевые формулы и правила речевого этикета;
- обмениваться профессиональной и непрофессиональной информацией с собеседником, выражая согласие/несогласие, сомнение, удивление, просьбу, совет, предложение и т.п.;
- участвовать в дискуссии по теме/проблеме, аргументированно отстаивать свою точку зрения;

• сочетать диалогическую и монологическую формы речи.

Примерное количество реплик - 8-10 с каждой стороны.

Письмо

Студент должен уметь:

• выполнять письменные задания к прослушанному, увиденному, прочитанному, логично и аргументированно излагать свои мысли, соблюдая стилистические и жанровые особенности;

• владеть навыками составления частного и делового письма, правильно использовать соответствующие реквизиты и формулы письменного общения;

• реферировать и аннотировать профессионально ориентированные и общенаучные тексты с учетом разной степени смысловой компрессии.

Методы (технологии) обучения

Основными **методами (технологиями)** обучения, отвечающими целям изучения дисциплины, являются:

проектная технология, представляющая самостоятельную, долгосрочную групповую работу по теме-проблеме, выбранную самими студентами, включающую поиск, отбор и организацию информации. В процессе работы над проектом речевое иноязычное общение «вплетено в интеллектуально-эмоциональный контекст другой деятельности»;

кейс-технология, основу которой составляют осмысление, критический анализ и решение конкретных социальных проблем. Кейс-технология ориентирована на развитие способности студентов решать определенные жизненные ситуации, важные повседневные проблемы, с которыми они непосредственно сталкиваются в жизни;

симуляция, которая применительно к иностранному языку представляет собой подражательное, разыгранное воспроизведение межличностных контактов, организованных вокруг проблемной ситуации, максимально приближенной к реальной;

технология обучения в сотрудничестве, предполагающая создание условий для активной совместной учебной деятельности студентов в разных учебных ситуациях. Это обучение в процессе общения студентов друг с другом и с преподавателем при наличии общей цели и индивидуальной ответственности каждого члена группы за собственный вклад в общее дело, за выполнение общего задания;

технология дебатов, представляющая собой полемический диалог, проходящий по определенному сценарию и имеющий целью убеждение третьей стороны - судей или аудитории.

компьютерные технологии, предполагающие широкое использование Интернет-ресурсов и мультимедийных обучающих программ. Компьютерные технологии позволяют интенсифицировать и активизировать учебно-познавательную деятельность студентов, эффективно организовать и спланировать

самостоятельную работу, совершенствовать контрольно-оценочные функции (компьютерное тестирование).

Организация самостоятельной работы студентов

При изучении дисциплины рекомендуется использовать следующие виды самостоятельной работы:

- контролируемую самостоятельную работу в форме проведения практических занятий, направленную на решение индивидуальных задач в аудитории и выполняемую под контролем преподавателя в соответствии с расписанием;
- управляемую самостоятельную работу в формах подготовки к практическим занятиям, аннотирования и реферирования статей, конспектирования информации, необходимой для изучения других дисциплин.

Диагностика компетенций студента

Для оценки достижений студента рекомендуется использовать следующий диагностический инструментарий:

- устный и письменный опрос во время практических занятий;
- проведение текущих контрольных работ (заданий) по отдельным темам;
- защита выполненных в рамках управляемой самостоятельной работы индивидуальных заданий;
- зачет;
- экзамен.

Требования к различным этапам диагностики компетенций студентов дисциплине «Иностранный язык (английский)»

Проверка знаний и умений осуществляется в форме текущего, промежуточного и итогового контроля. *Текущий контроль* предусмотрен программой и осуществляется на аудиторных занятиях с целью проверки уровня владения пройденной частью языкового и речевого материала и степени сформированное коммуникативных навыков и умений. Текущий контроль осуществляется в форме комплексных заданий, лексико-грамматических тестов, коллоквиумов, собеседований.

Промежуточный контроль проводится в конце прохождения каждой темы в виде лексико-грамматических тестов и самостоятельной работы по текстам по специальности.

Итоговый контроль носит комплексный характер и проводится в двух формах: зачета и экзамена.

Зачет по дисциплине «Иностранный язык (английский)» основывается на результатах текущего и промежуточного контроля и направлен, с одной стороны, на проверку умения работы с текстом, а с другой стороны, на проверку коммуникативных навыков и умений, приобретенных студентами на соответствующем этапе обучения.

Требования к зачету:

Письменная часть

1. Лексико-грамматический тест.

2. Чтение и письменный перевод оригинального общенаучного или общетехнического текста с иностранного языка на родной со словарем. Объем - 1000 печатных знаков. Время выполнения - 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации (10-12 предложений) и неподготовленная беседа с преподавателем в рамках данной ситуации (6-7 реплик).

2. Реферирование оригинального или частично адаптированного культурологического или научно-популярного текста на иностранном языке; беседа на иностранном языке по содержанию текста. Объем текста - 700 печатных знаков. Время выполнения - 10 мин.

Экзамен включает следующие задания:

Письменная часть

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального профессионально-ориентированного текста с иностранного языка на родной со словарем. Объем - 1300-1500 печатных знаков. Время - 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации и неподготовленная беседа с преподавателем в рамках данной ситуации (по предметно-тематическому содержанию дисциплины).

2. Реферирование аутентичного или частично адаптированного общественно-политического, культурологического, научно-популярного текста; беседа на иностранном языке по содержанию текста. Объем текста - 900 печатных знаков. Время - 5-7 мин.

Шкалы оценок

Оценка учебных достижений студентов на экзаменах по дисциплине «Иностранный язык (английский)» производится по десятибалльной шкале.

Оценка учебных достижений студентов, выполняемая поэтапно по конкретным модулям учебной дисциплины, осуществляется кафедрой в соответствии с избранной вузом шкалой оценок.

Критерии оценок

Для оценки учебных достижений студентов используются критерии, утвержденные Министерством образования Республики Беларусь.

Структура учебной дисциплины

Изучение дисциплины «Иностранный язык (английский)» на инженерно-педагогическом факультете рассчитано на 270 учебных часов, из них 140 часов аудиторной и 130 часов самостоятельной работы студента. Рабочая программа составлена с учетом следующего распределения часов по семестрам:

Семестр	Практические занятия	Самостоятельная работа	Итоговый контроль знаний
1	70	65	Зачет
2	70	65	Эзамен
	140	130	

В основу структурирования содержания учебного материала положен **принцип модульного похода,** который предполагает разбивку учебного материала на относительно самостоятельные модули (разделы) курса. Таким образом, структура содержания учебной дисциплины включает модуль социального общения, модуль профессионального общения, модуль контроля.

№ модуля	Название модулей Сфера общения	Количество часов		
		Аудиторные		Самостоятельная работа студента
		Лекции	Практические занятия	
М-1	**Модуль социального общения**		**62**	**60**
	Социально-бытовое общение		10	8
	Социокультурное общение		42	42
	Социально-политическое общение		10	10
М-2	**Модуль профессионального общения**		**62**	**60**
	Учебно-профессиональное общение		40	40
	Производственное общение		22	20
М-3	**Модуль контроля**		**16**	**10**
	Итого:		140	130

ПРЕДМЕТНО-ТЕМАТИЧЕСКОЕ СОДЕРЖАНИЕ ДИСЦИПЛИНЫ

Модуль социального общения	
Сферы общения	**Содержание**
1.Социально-бытовое общение	**Личностные характеристики (биографические сведения, работа, хобби и т.д.). Коммуникативно-поведенческие стереотипы в ситуациях бытового общения (вокзал, гостиница, магазин, банк, кафе, поликлиника и т. п.).**
2.Социокультурное общение	**Социокультурный портрет страны изучаемого языка и Республики Беларусь: национальные традиции и ценности. Социокультурный портрет молодежи: образование, спорт, досуг и т.п. Проблемы молодежи. Нравственность и духовность в современном обществе. Экологическая культура. Технический прогресс и глобальные проблемы человечества. Текущие события культурной жизни в соизучаемых странах.**
3.Социально-политическое общение	**Страны изучаемого языка и Республика Беларусь в современном мире (социально-политический профиль). Текущие события социально-политической жизни в соизучаемых странах.**

Модуль профессионального общения	
Сферы общения	**Содержание**
1.Учебно-профессиональное общение	**Предмет и содержание специальности «Технология. Информатика». Избранная специальность как научная отрасль. Организация инженерно-педагогического образования в Республике Беларусь и странах изучаемого языка: США и Великобритании. Учеба в университете. Студенческая научно-практическая конференция: доклады, сообщения. Реферирование и аннотирование статей по специальности. Информационный поиск (иноязычная база данных, Интернет- ресурсы)**
2. Производственное общение	**Типичные ситуации производственного общения. Социокультурные нормы делового общения. Профессиональная этика.**
Модуль контроля	
Содержание	
Данный модуль является интегральным и обеспечивает промежуточный и итоговый контроль усвоения содержания Модуля 1 и Модуля 2 . Он представляет собой обобщение и систематизацию пройденного учебного материала по всем аспектам языка и видам речевой деятельности. Текущий контроль осуществляется в форме комплексных заданий, лексико-грамматических тестов, коллоквиумов, собеседований, итоговый контроль - в форме зачетов и экзаменов.	

В учебном процессе предполагается взаимосвязанное обучение видам речевой деятельности, осуществляемое на предметно-тематическом материале курса:

Аудирование - умение воспринимать на слух иноязычную речь с разной полнотой и точностью понимания содержания, а также понимать разножанровые аудио- и видеотексты.

Говорение - умение осуществлять монологическое, диалогическое и полилогическое общение в соответствии с ситуацией и коммуникативной задачей с соблюдением норм речевого и неречевого этикета.

Чтение - умение владеть всеми видами чтения (изучающее, ознакомительное, просмотровое, поисковое), предполагающими разную степень понимания и смысловой компрессии разножанровых текстов.

Письменная речь - умение порождать различные виды письменных текстов (резюме, аннотации, эссе, анкеты, заявки на участие, деловые письма) в соответствии с коммуникативной задачей и нормами, принятыми в странах изучаемого языка.

ЯЗЫКОВОЙ МАТЕРИАЛ

1. Фонетика (систематизация)

- совершенствование слухо-произносительных и ритмико-интонационных навыков;

- просодическое оформление фраз различного коммуникативного типа: повествования, вопроса, просьбы, приказа, восклицания;

- фразовое и логическое ударение в сложном предложении.

2. Грамматика (систематизация)

Морфология:

- *имя существительное*: категория числа и падежа;
- *артикль*: определенный, неопределенный, нулевой;
- *имя прилагательное*: категория степеней сравнения; сравнительные конструкции;
- *местоимение*: классификация местоимений;
- *числительное*: простые, производные и сложные, количественные, порядковые, дробные;
- *наречие*: классификация; категория степеней сравнения;
- *глагол*: видо-временная система; активный и страдательный залог; модальные глаголы и их эквиваленты; согласование времен;
- *неличные формы глагола*: инфинитив, причастие, герундий и конструкции с ними;
- *словообразовательные модели* (существительное, прилагательное, наречие, глагол);
- сослагательное наклонение*;*
- *служебные слова*: предлоги, союзы, союзные слова.

Синтаксис:

- *простое предложение*: типы простых предложений; порядок слов; члены предложения, способы выражения подлежащего и сказуемого, правила их согласования; специфические конструкции и обороты;
- *сложное предложение*: сложносочиненное и сложноподчиненное; типы придаточных предложений;
- *прямая и косвенная речь*: правила перевода в косвенную речь предложений различных типов;
- *слова-заменители;*
- *вводные слова и вводные предложения.*

3. Лексика и фразеология

- наиболее употребительная лексика и фразеология, соответствующая предметно-тематическому содержанию курса;
- сочетаемость слов, свободные и устойчивые словосочетания;
- наиболее распространенные формулы-клише: знакомство,
- установление/поддержание контакта, выражение просьбы,

согласия/несогласия с мнением собеседника/автора, начало, продолжение, завершение беседы;

- общенаучная лексика и терминология.

Объем лексического материала - 1500 лексических единиц (продуктивно), из них 300 - терминологическая лексика.

Учебно-методическая карта учебной дисциплины

1 семестр

Номер раздела, темы, занятия	Название раздела, темы, учебного занятия; перечень изучаемых вопросов	Количество аудиторных часов					Методические пособия, средства обучения (оборудование, учебно-наглядные пособия и др.)	Литература	Формы контроля знаний
		лекции	практические занятия	лабораторные занятия	управляемая (контролируемая) самостоятельная	иное			
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1.	**М-3. Вступительный лексико-грамматический тест.**		**2**		**2**				
2.	**М-1. Знакомство.**		**8**		**8**				
2.1	**Тема: Студенческая жизнь. Проблемы молодежи.**								
2.1.1.	Грамматика: Повторение видо-временных форм глагола в действительном залоге (настоящие времена). Типы вопросов. Аудирование: док.фильм“Fringes” (США, 2012г., реж. Эд. Моретти). Дискуссия: Youth problems		4		2		Раздаточный материал, видеозапись	УДС, с.6-7 пг, с. 59-62	Фронтальный опрос
2.1.2	Чтение: 1)State Education in Great Britain 2)Oxford and Cambridge 3)Svstem of Education in Belarus Устная презентация «My student’s Life»		4		6		Раздаточный материал	УДС, с. 14-36; 58-60	Индивидуальный опрос.
3.	**М-2. Моя будущая профессия**		**30**		**27**				
3.1.	**Тема: Инженерно-педагогическое образование**								
3.1.1.	Грамматика: Повторение видо-временных форм глагола в действительном залоге (прошедшие времена). Словообразовательные модели: *v+er=n; v+ion=n; adj+ness=n; n+less=adj; adj+ly=adv; un+adj=adj; v+able=adj; adj+ize=v; un+v=v; dis+v=v; n+n=n.* *Чтение: 1)History of Education*		6		3		Раздаточный материал	ОВиМ, с. 6-14; пг, с.60-63	Фронтальный опрос

	2) What makes a good teacher? Письмо: аннотирование и реферирование учебного текста.								
3.1.2	Грамматика: Повторение видо-временных форм глагола в действительном залоге (будущие времена). Категории рода, числа и падежа имени существительного. Чтение: 1)What role is for teachers 2)Thinking about teaching Дискуссия: Effective teacher's strategies; Письмо: аннотирование и реферирование уч. текста.		6		5		Раздаточный материал	ОВиМ, с. 19-26; пг, с.28-35	Фронтальный опрос
3.1.3.	Устная презентация: "The great educators' Commitments and principles"		4		4				
3.1.4.	Грамматика: Обороты there + to be; обороты с формальным подлежащим it; личные местоимения в именительном падеже (I, he, she, they, we, you). Чтение: Vision in Science. Аудирование: "Do we really need the moon?" (BBC Documentary, 2011) Дискуссия: Creative scientists. Письмо: аннотирование и реферирование уч. текста.		6		6		Раздаточный материал, видеозапись	ПГ, с. 3- 16; ОВиМ, с.49-54;	Индивидуальный опрос
3.1.5.	Грамматика: Согласование времен (формы Perfect). Чтение: Teacher's duties. Аудирование: "Why do we talk" (BBC Documentary, 2010) Дискуссия:The Philosophy of Rights and Duties. Письмо: аннотирование и реферирование аутентичного текста по специальности.		6		6		Раздаточный материал, видеозапись	пг, с.59-68; ОВиМ, с.34-37;	Фронтальный опрос
3.2	М-3. Лексико-грамматический тест.		2						
4.	**М-2. Основы информационных технологий.**		**32**		**28**				
4.1.	**Тема: Компьютер как основной инструмент инженера.**								
4.1.1.	Грамматика: Количественные и порядковые числительные. Исчисление времени. Даты. Дроби. Разговорные формулы с числительными. Чтение: 1)Computer Literacy; 2)What is a computer 3) Applications of computers Дискуссия: Technological progress without computers. Письмо: аннотирование и реферирование аутентичного текста по специальности.		8		7		Раздаточный материал	ОКГ, с.11-16; пг, с.54-57.	Индивидуальный опрос

4.1.2.	Грамматика: Модальные глаголы can (could), may (might), must, ought, need. Простые и перфектные формы инфинитива после модальных глаголов *must, may, can, to be, have, should*. Чтение: Development of electronics. Аудирование: “Tokyo’s sky city” (TV Extreme engineering) Письмо: аннотирование и реферирование аутентичного текста по специальности.		6		4		Раздаточный материал, видеозапись	ОКГ, с. 18-23; пг, с.78-82.	Фронтальный опрос
4.1.3	Грамматика: Степени сравнения прилагательных. Сравнительные конструкции (as (so)...as, more...then, less…than). Суффиксы прилагательных Чтение: 1) History of computers 2)First computers 3)Four generations of computers Дискуссия: Advantages of computer data. Письмо: аннотирование и реферирование аутентичного текста по специальности.		4		5			ОКГ, с.34-37; ПГ, с.48-51.	Фронтальный опрос
4.1.4	Грамматика: Сложные предложения. Сложносочиненные и сложноподчиненные предложения. Чтение: “Data Processing Systems” Аудирование: “City in a Pyramid” (TV Extreme Engineering) Дискуссия: Virtual Reality Systems: For and against Письмо: аннотирование и реферирование аутентичного текста по специальности.		6		6		Раздаточный материал, видеозапись	ОКГ, с.44-49; с.; ПГ, с. 17-21.	Фронтальный опрос
4.1.5	Устные презентации «Значение информационных технологий в современном обществе»		4		3				Индивидуальный
4.2.	М-3. Лексико-грамматический тест.		2		2				Итоговый лексико-грамматический тест
	М-3. Повторение пройденного материала.		2		2				
			72		**65**				Зачет.

2-ой семестр

Номер раздела, темы, занятия	Название раздела. темы. учебного занятия; перечень изучаемых вопросов	Количество аудиторных часов					Методические пособия. средства обучения (оборудование. учебно-наглядные пособия и др.)	Литература	Формы контроля знаний
		лекции	практические занятия	лабораторные занятия	управляемая (контролируемая) самостоятельная работа студента	иное			
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1.	**М-1. Информационные технологии в образовании**		**32**		**28**				
1.1	**Тема: Искусственный интеллект.**								
1.1.1	Грамматика: Усложненные структуры (конструкции) в составе предложения Чтение: 1) Intelligence 2) IQ Дискуссия: Should we measure IQ? Письмо: аннотирование и реферирование аутентичного		6		6		Раздаточный материал	пг, с.97-99; ОВиМ, с.55-60;	Фронтальный опрос
1.1.2	Грамматика: Формальные признаки сложного дополнения. Чтение: 1)Theory on intelligence by Howard Earl Gardner Дискуссия: The Theory of Multiple Intelligences		4		4		Раздаточный материал	ОВиМ, с.59-60.	Фронтальный опрос
1.1.3	Устная презентация “Computers in Education Process”		4		4				Индивидуальный опрос
1.1.4	Грамматика: Формальные признаки цепочки определений в составе именной группы (наличие нескольких левых определений между детерминативом существительного и ядром именной группы). Чтение: 1) Hardware, Software and Firmware 2)Function Units of Digital Computers 3)Artificial Intelligence Аудирование: Док. Фильм “Louder than a bomb ” (США, 2010, реж. Гр.Джейкобс и Дж.Сискел) Письмо: аннотирование и реферирование аутентичного текста по специальности.		8		6		Раздаточный материал. видеозапись	ОВиМ, с.62-74; ОКТ, С.60-63.	Фронтальный опрос

1.1.5	Грамматика: Формальные признаки конструкции «Именительный падеж с инфинитивом». Чтение: 1)Imaginative Communication 2)Persuasive Communication Аудирование: “Why do we talk” (BBC Documentary, 2010)		6		4		Раздаточный материал, видеозапись	пг, с.96; ОВиМ, с.55-60;	Фронтальный опрос
1.1.6	Устная презентация “Art of Communications”		2		4				Индивидуальный опрос
1.2	М-3. Лексико-грамматический тест.		2						
2.	**М-1. Аппаратное и программное обеспечение компьютера.**		**36**		**37**				
2.1	**Тема: Функциональные узлы компьютера.**								
2.1.1	Грамматика: Формальные признаки конструкции «независимый причастный оборот» Чтение: 1)Functional Units of Digital Computers 2)Some features of a Digital computer 3)Storage Units Дискуссия: Modern Computers in our life		8		7		Раздаточный материал	ОКГ, С.72-88.	Фронтальный опрос
2.1.2	Грамматика: Формальные признаки конструкции «независимый причастный оборот». Чтение: 1)Digital computer operation 2)Memory 3) Central Processing Unit Дискуссия: Does everybody use the computer today? Письмо: аннотирование и реферирование аутентичного текста по специальности.		6		6		Раздаточный материал	ОКГ, С93-102.	Фронтальный опрос
2.1.3	Устная презентация: «Application of computers: For and against»		4		4				Индивидуальный опрос

2.1.4	Грамматика: Формальные признаки логико-смысловых связей между элементами текста (союзы, союзные слова, вводные обороты и т.д.) Чтение: 1)The CPU Main Components 2)Microprocessor – a brain to the Hardware 3)Input-output environment Дискуссия: Does everybody use computer now? Письмо: аннотирование и реферирование аутентичного текста по специальности.		6		8		Раздаточный материал	ПГ, с.20-26; ОКГ, С.103-115	Фронтальный опрос
2.1.5	Грамматика: Местоимения somebody, anybody, nobody etc. Чтение: 1)Output Devices. Printers 2)Magnetic Media Devices 3)Personal Computers Дискуссия: Is iPad mini Useful Device? Письмо: аннотирование и реферирование аутентичного текста по специальности.							с.40-48; ОКГ, С.123-135	
2.1.6	Устная презентация «Future intelligent machine»		2		2				
2.2.	**М-3. Экзаменационный лексико-грамматический тест.**		2		2				
			68		65				Экзамен
			140		130				

Список рекомендуемой литературы

Основная литература

1. Борисевич, Л.И. Challenges of Teaching. Обучение: вопросы и мотивы: пособие по английскому языку для педагогов-инженеров / Л.И. Борисевич, Н.Е. Денисенок. - Минск: БНТУ, 2009. - 135с.

2. Богданович, Е.Г. Учебная деятельность студента в техническом вузе: учебно-методич. пособие по английскому языку / Е.Г. Богданович, О.Н. Барлюгова, Т.В. Колосова. - Минск: БНТУ, 2005. - 72с.

3. Колосова, Т.В. Практическая грамматика английского языка: Учебно-методическое пособие / Т.В. Колосова, Л.А. Крюкова. - Минск: БНТУ, 2005.- 108с.

4. Радовель, В.А. Английский язык. Основы компьютерной грамотности: Учебное пособие / Радовель В.А. - Изд. 4-е, дополн. и исправл. - Ростов н/д: Феникс, 2007. - 224 с. - (Сам себе репетитор).

Дополнительная литература

1. Radford, A. Syntactic Theory and the Structure of English: A Minimalist Approach / A. Radford. - UK: Cambridge Univ. Press, 1998. - 558 p.

2. Rambow, O. Formal and Computational Aspects of Natural Language Syntax / O. Rambow. - PhD thesis. IRCS Technical Report, University of Pensyl vania, 1994.

3. Sager, N. Syntactic analysis of natural language / N. Sager // Advances in Computers. - 1967.- Vol.8. - P.153 - 188.

4. Stabler, E. Remnant movement and structural complexity / E. Stabler // Constrains and Resources in Natural Language Syntax and Semantics / Eds. G. Bouma, E. Hinrichs, G.-L.M. Kruijff, R. Oehrle. - Stanford: CSLI Publications, 1999. - P. 299 - 326.

5. http://online-joumals.Org/index.php/i-jep/article/view/2167

Компьютерные средства обучения:

Вид	Наименование программного продукта	Назначение
Компьютерная программа	“Table Referat”	обучающая программа
Компьютерная программа	“Publicistic Reading”	обучающая программа
Интернет-сайт	http://online-joumals.org/index.php/i-jep/article/view/2167	Журнал “International Journal of Engineering Pedagogy” (iJEP)
Интернет-сайт	www.ijcis.info	Журнал “International Journal of Computing and Information Sciences”
Интернет-сайт	www.wikipedia.org (английский язык)	Энциклопедия
Интернет-сайт	www.britanica.org (английский язык)	Энциклопедия Британии