МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ
РОССИЙСКОЙ ФЕДЕРАЦИИ

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ENGLISH FOR CONSTRUCTION

АНГЛИЙСКИЙ ЯЗЫК

Учебное пособие для студентов I курса направления
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Цель учебного пособия – обучение студентов I курса технического вуза по направлению подготовки 270800 «Строительство» чтению и переводу оригинальной литературы по специальности, а также устному профессиональному общению на иностранном языке.

При отборе текстовых материалов использовались образцы научно-технической литературы по строительству. Тематика текстов ориентирована на возможность осуществлять межпредметные связи в процессе обучения. Набор упражнений к каждому разделу содержит основные лексические и грамматические стереотипы по данному направлению подготовки.

Для активизации профессионального общения каждый раздел пособия содержит соответствующий словарь профессиональных терминов, а также краткий грамматический справочник.

Рассмотрено и одобрено на заседании кафедры ИЯиФ Рубцовского индустриального института.

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CONTENTS

PREFACE

Настоящее учебное пособие English for Construction предназначено для студентов 1 курса направления подготовки 270800 «Строительство». Пособие рассчитано на студентов, имеющих начальную языковую подготовку.

Целью пособия является обучение студентов чтению и переводу оригинальной литературы по специальности (в том числе с использованием словаря), а также устному профессиональному общению на иностранном языке по данному направлению подготовки. Для достижения этих целей в пособии предусмотрена регулярная учебная деятельность по изучению словаря активной лексики, включающего терминологию данного направления, а также общетехнического значения.

Каждый раздел пособия содержит тексты разнообразной тематики: The House; From the History of Human Dwelling; Egyptian Pyramids; Impressions of Modern Architecture; Different Kinds of Buildings; History of Building Materials; Metals as Building Materials; Cement; Silicon. Silica in Industries; Brick; Bridges and Tunnels; Lift Slab Method in Construction; Canals; Steel Roof Trusses; Air Conditioning in Building; Steel-Mill Buildings; A House of Glass and Plastics; Manufacture of Portland Cement; Classes of Cement; and others.

Кроме того, каждый раздел пособия имеет многочисленные лексические и грамматические упражнения. Основное внимание в разделах пособия уделено формированию и освоению активного словарного минимума, который позволит извлекать полезные для практики сведения из информативных источников. Разделы предусматривают и задания, направленные на формирование умений устного общения на определенную тему.

Задания на запоминание новых слов и выражений в их английском и русском вариантах способствуют увеличению словарного запаса, а также и тому, чтобы студент мог узнавать их при чтении оригинальной литературы и свободно, в хорошем темпе использовать эти слова и выражения в профессиональном общении в дальнейшем. Задания, построенные в форме вопросов и ответов, служат для контроля и самоконтроля степени усвоения лексики и структур данного раздела, а также могут помочь для составления и воспроизведения диалогов, для проведения ролевых игр и т.д.

Для развития умения работать со словарем студентам рекомендуется самостоятельно находить в словаре транскрипцию и перевод незнакомых слов, выписывать их в свой словарь к уроку, отрабатывать чтение этих слов с помощью транскрипции.

Кроме чтения и перевода текстовых материалов разной понятийной и языковой сложности, в число задач каждого раздела входит развитие и углубление навыков устной речи по конкретным темам, выполнение ролевых игр, выступление или сообщение по теме. Специальные задания направлены на активизацию мыслительной деятельности.

Раздел пособия Grammar Review содержит основные грамматические темы, необходимые для изучения на 1 курсе, помогает при выполнении грамматических упражнений, тестов, при формировании правильного высказывания.

Процесс изучения иностранного языка требует постоянной и напряженной работы, он требует преодолевания трудностей, большой самостоятельной подготовки. Но процесс этот очень интересный и захватывающий.

Желаем успеха!

UNIT 1

Text: THE HOUSE (Part I)

Man has always been a builder. The kind of house he built in the beginning depended upon the climate, upon his enemies and upon the building materials at hand. The first houses in many parts of the world were made of wood, for in those days the greater part of the earth was covered with forests. Men tied together the tops of several trees and covered them with the skins of animals or with leaves and grass. So a tent, or hut, was the first house of the primitive people who lived where there was much wood.

In other regions the most convenient building material was stone. Men began building houses out of stone very long ago. Although they were built without cement, the remains of a few of them still exist.

It appears that the most ancient homes on the territory of our country were earthen houses. One such home was discovered near Voronezh in 1927. It consisted of a shallow hole of oval shape. The floor was covered with limestone slabs. The roof had been conical and stood on poles (столб) covered by branches or animal skins. Such dwellings existed in that part of the country in the Upper Paleolithic Period (from 40,000 to 12,000 years ago).

Notes to the Text

to depend on (upon)	зависеть от, полагаться
to be made of	быть сделанным из
to be covered with	быть покрытым
to tie	связывать
building material	строительный материал
stone	камень
to build (out of) (built, built)	строить (из)
cement	цемент
to exist	существовать
to appear	появляться, случаться, происходить
to discover	открывать
to consist (of)	состоять (из)
dwelling	жилище, дом
limestone slab	известняковая плита
ancient	древний

EXERCISES

I. Answer the following questions:

1. What did the house men built depend upon? 2. What were the first houses made of? 3. How did men do their dwellings? 4. Did men begin building houses out of stone very long ago or not? 5. What did the most ancient homes consist of?

II. Translate the sentences into Russian:

1. The shape of the root was very strange. 2. There was a big hole in the wall of the old house. 3. The art of brick making dates from very early time. 4. A new building was put up in our district. 5. In Asia one can see many houses with flat roots. 6. Many families have moved into new comfortable flats. 7. The beautiful pictures of the Tretyakov Gallery arouse everybody interest.

III. Read the international words and guess their meaning:

climate, tent, primitive, cement, oval, conical, period, standard, pyramids, sphinx, tourist, technique, industrialize, season.

IV. Make up sentences:

1. The kind, depended, the climate, upon, enemies, of, the building materials, house. 2. A tent, the first, people, was, of the, house, people, primitive. 3. Man, of, very, began, ago, building, stone, long, houses, out. 4. Ancient, of, hole, homes, a shallow, shape, consisted, oval, of.

V. Read and translate the following text without using a dictionary:

FROM THE HISTORY OF HUMAN DWELLINGS (Part I)

Most of the time of a modern man is spent within the walls of some building. Houses are built for dwelling; large buildings are constructed for industrial purposes; theatres, museums, public and scientific institutions are built for cultural activities of the people. The purposes of modern buildings differ widely, but all of them originate from the efforts of

primitive (первобытный) men to protect themselves from stormy weather, wild animals and human enemies.

Protection was looked for everywhere. In prehistoric times men looked for protection under the branches of trees; some covered themselves with skins of animals to protect themselves from cold and rain; others settled in caves (пещера).

Notes to the Text

to spend (spent, spent)	проводить
industrial	промышленный
scientific	научный
cultural	культурный
activity	деятельность
to differ	различаться, отличаться
to protect	защищать

VI. Answer the following questions:

1. What are the houses built for?
2. Where did primitive people look for protection?

VII. Find sentences in Passive Voice in the text read and translate them. Use Grammar Review.

UNIT 2

Text: THE HOUSE (Part II)

The ancient Egyptians built very simple houses by present standards. Having dried the bricks in the sun, they put up four walls, and above these they placed a flat roof. The roof was flat because there was very little rain in Egypt. Although their buildings were simple in construction, the Egyptian art of building was very beautiful. Their pyramids and monuments, sphinxes and palaces arouse our wonder to this day. An important part in the history of building has been played by the column, and it was ancient Egypt that gave the world its first lessons in the art of making columns.

The Greeks learned much from Egypt. But they did not borrow the flat roof. They built a slanting roof because there was much rain in their country. The Greeks made the roof slant in two directions from the middle. They also improved on Egypt's columns and soon became the teachers of the world in column making.

The Romans, in turn, learned much from the Greeks. First of all, they borrowed the slanting roof and the columns. But they added the arch, thus adding much strength and beauty to their buildings.

In our country architecture flourished for the first time in Kiev Russ. Unfortunately, only a few of the church buildings of that period have remained. The churches of the time were strong buildings with thick walls and small windows. They often had to serve as fortresses during enemy invasions. Tourists from all over the world come to see the famous Cathedral of St. Sophia, the cornerstone of which was laid in 1037 to commemorate a victory over the Pechenegs. Having been forced out of Kiev the German fascists did their best to destroy its finest ancient architecture, although it had no military significance. Great effort has gone into restoring them.

Notes to the Text

brick	кирпич
to put up (put, put)	поднимать, возводить
flat	плоский
to construct	строить, конструировать
construction	строительство, строение
to arouse	пробуждать, вызывать
direction	направление
middle	середина
to borrow	заимствовать
to add	добавлять
strength	сила, прочность
to remain	сохранять
thick	толстый, густой
to serve	служить
to destroy	разрушать
effort	усилие
to restore	реставрировать

EXERCISES

I. Answer the following questions:

1. How did the Egyptians build houses? 2. Why was the roof flat in ancient Egyptian houses? 3. What can you say about the Egyptian art of building? 4. It was ancient Egypt that gave the world its first lessons in the art of making columns, wasn't it? 5. How did the Greeks make the roof? Why? 6. What was the Greeks contribution to construction? 7. What did the Romans do to add strength and beauty to their buildings? 8. Where did architecture flourish for the first time in our country?

II. Translate the following sentences into Russian:

1. The ancient Egyptians used brick as a building material. 2. The most efficient methods of construction are known to be preferred in this project. 3. Probably the strength of this material is great. 4. The people were safe behind the thick walls of the house. 5. A lot of beautiful buildings were almost completely destroyed during the war. 6. Many efforts had been made before the problem of transport in the city was solved. 7. The house is well restored. 8. They were driving in the direction of the building site (площадка). 9. Instead of restoring the old theatre they decided to build a new one in the centre of the town. 10. The monument needs restoring. 11. The monument of what century are you restoring?

III. Say some words about:

1. the houses of the ancient Egyptians; 2. the houses of the Greeks; 3. the churches in Kiev Russ.

IV. Read and translate the following text without using a dictionary:

FROM THE HISTORY OF HUMAN DWELLINGS (Part II)

When the Ice Age had passed Europe remained very cold, at least in winter, and so the people of the Old Stone Age had to find some warm and dry place to shelter from bad weather. They chose caves, dwelling places that storm and cold could not destroy. On the walls of their caves ancient

people painted pictures. Such decorated caves are found in Europe, Asia and Africa.

When man began to build a home for himself, caves were imitated in stone structures, trees were taken as a model for huts built of branches, skins were raised on poles and formed tents.

Primitive stone structures, huts and tents are the earliest types of human dwellings; they are lost in the prehistoric past but serve as prototypes for structures of later historic times.

Notes to the Text

to pass	проходить
to find (found, found)	находить
to choose (chose, chosen)	выбирать
to point	рисовать
to decorate	украшать
decoration	украшение
decorated	украшенный

V. Answer the following question:

What are the earliest types of human dwellings?

VI. Find sentences in Passive Voice read and translate them. Use Grammar Review.

UNIT 3

Text: THE HOUSE (Part III)

Having become very acute in many countries after World War II, the housing problem called for a solution. As a result of the damages caused by the war there has been a great housing shortage. The Soviet Government set itself the task of housing all the homeless people who had lost their flats and of improving the living conditions of those who lived in crowded and uncomfortable flats.

To solve the problem great housing construction has started since the end of the war. Millions of people have already moved into new flats.

A very advanced construction technique today is the use of precast concrete. According to this technique, the reinforced concrete units of which a building is to be made are manufactured at a factory and are then simply assembled on the site.

The use of precast concrete has many advantages over other building methods. For one thing, building work is industrialized more highly. The site becomes something like an assembly shop which cuts the labour needed for building by 60 to 70%, the main part of the work being done at the factory. The building season is also extended. After all, in the greater part of our country the winter lasts for several months.

Precast building units are manufactured in heated premises and can be assembled at the site all the year round in any frost. Furthermore, the duration of building is cut. And, finally, materials and money are saved, as, for example, it is possible to do away with expensive scaffolding (леса).

The precast concrete technique, which is continuously being improved in our country, has a big part to play in the country's huge building program.

Notes to the Text

to damage	наносить ущерб
damage	ущерб
shortage	нехватка, недостаток
advantage	преимущество
advanced	передовой
precast concrete	готовый бетон
to assemble	собирать
site	участок, местоположение
reinforced concrete	железобетон
technique	техника
to cut (cut, cut)	резать, сокращать
to manufacture	выпускать, производить
to extend	удлинять
premises	помещение
to do away	покончить
to improve	улучшать, усовершенствовать
huge	огромный

EXERCISES

I. Answer the following questions:

1. What is a very advanced construction technique today? 2. Has the use of precast concrete many advantages over other building methods? 3. What are these advantages?

II. Translate the following word combinations into Russian:

to depend on size; in the middle of the wood; to tie together; the top of a wooden house; a shallow hole; a flat roof; a stone wall; the strength of the material; thick clay; to destroy the city; to restore the building; advanced technology; steel and concrete; to manufacture tubes; to assemble houses; to cut down expenses for the construction; to extend the road.

III. Fill in the blanks with the words:

1. The old house was made of ... . 2. There was a big ... in the roof of a wooden house. 3. A building of stones has been ... this month not far from the bus stop. 4. Aluminium has many ... over other metals. 5. After the war many destroyed buildings had to be ... . 6. This ... building can be seen from all parts of the city. 7. New methods of construction allow us to ... ready made units on the site. 8. The house looked like a big box made of steel and ... . 9. Concrete as well as other building materials was widely used for the bridge ... .

concrete	wood	hole
advantages	huge	assemble
put up	restored	construction

IV. Translate sentences into Russian paying attention to the underlined words:

1. Concrete has become an important construction material. 2. The large hole was concreted over. 3. He carefully studied the shape of the stones. 4. Clay is easily shaped. 5. The region is cut into two parts by the river. 6. There was a deep cut on his hand. 7. We couldn't find a dry place

anywhere. 8. Why have they placed the bridge here? 9. His hands have been tied. 10. There are close cultural ties between these two countries. 11. Storms sometimes cause great damage. 12. Several pictures were damaged by fire. 13. Concrete as well as other building materials was widely used for the bridge construction. 14. Concrete units have been brought to the site. 15. The road was concreted long ago.

V. Express your agree or disagree with the following statements using: That's right; That's true; or That's wrong; according to the text:

1. The first houses in many parts of the world were made of earth. 2. Men cut the tops of several trees and covered them with skins of animals to make a house. 3. On the territory of our country the most ancient homes were earthen houses. 4. One such home was discovered hear Voronezh in the 19th century. 5. The floor of that house was covered with wood. 6. The roof of the Egyptian house was flat. 7. The Greeks borrowed the flat roof from Egypt. 8. The Greeks improved on Egypt's column. 9. The Greeks became the teachers of the world in column making. 10. In our country architecture flourished for the first time in Kiev Russ. 11. The famous Cathedral of St. Sophia was founded in the 12th century. 12. A very advanced construction technique today is the use of precast concrete. 13. The use of precast concrete has many advantages over other building methods. 14. Precast building units are manufactured in heated premises and can be assembled in summer season.

UNIT 4

Text: EGYPTIAN PYRAMIDS (Part I)

Architecture is the art which makes buildings beautiful to look at as well as useful. A man who designs buildings and makes the plans for them is called an architect. He has to think not only of what he wants the building to look like when it is finished but also what it is to be used for. He must not forget the sort of material to be used in the building. This may be stone, brick, wood or steel and concrete.

There have been many different styles or kinds of architecture in the past and there are many different styles today in different parts of the world.

The oldest monuments which are met within architecture are the colossal pyramids of Egypt most of which were constructed about 6,000 years ago.

Notes to the Text

to make (made, made)	делать, создавать
useful	полезный
to design	конструировать, проектировать
to look like	выглядеть
to look at	смотреть
to finish	заканчивать
art	искусство
steel	сталь
wood	дерево

EXERCISES

I. Answer the following questions:

1. What is architecture? 2. What is an architect? 3. What must not the architect forget? 4. What materials can be used in building? 5. Are there many different styles in architecture today? 6. When were the colossal pyramids of Egypt constructed?

II. Read the international words and make up sentences with them:

architecture, design, plan, an architect, finish, sort, material, styles, monuments, colossal, pyramids, Egypt, construct.

III. Choose the right answer:

1. An architect is a person who:
   a) makes a building;
   b) designs a building;
   c) founds a building.

2. The oldest architectural monuments are:
   a) the tents of primitive people;

b) the Cathedral of St. Sophia in Kiev;
c) Egyptian Pyramids.

3. An architect has to think of:
a) the sort of material for construction;
b) what the building looks like;
c) what the building is used for.

IV. Bead and translate the following text without using a dictionary:

FROM THE HISTORY OF HUMAN DWELLINGS (Part III)

In the days of early civilization, once men had learnt how to build simple houses for their families, they began to feel a need to have a number of different kinds of houses in one place. At first the difference was mainly in size - the chief or leader had a larger hut or tent than the rest of the people. Much later, when men began to build towns, there grew up a difference between town houses and country houses. The streets in towns were very narrow and there was not much place for building within the town walls, and therefore houses had to be built higher than they were in the country. A typical town house consisted of a shop opening on the street where the man did his work or sold his goods, with a kitchen behind and a bedroom above.

Notes to the Text

to learn (learnt, learnt)	учить, изучать
to feel (felt, felt)	чувствовать
to need	нуждаться
need	необходимость
different	разный, различный
difference	разница
narrow	узкий

V. Answer the following questions:

1. Why were the houses in town higher than in the country?
2. What did a typical town house consist of?

VI. Give three forms of the following verbs and translate them. Use Grammar Review.

to have	to learn	to feel
to build	to begin	to do
to be	to grow	to sell

VII. Find in the text the sentences with the verb "to be", read and translate them. Use Grammar Review.

UNIT 5

Text: EGYPTIAN PYRAMIDS (Part II)

The pyramids are large triangular buildings which were placed over the tombs (могила) of Egyptian kings. The best known of the pyramids are a group of three built at Giza south of Cairo. The largest of these is 482 feet high. They tell us of the advanced civilization of ancient Egypt which is much spoken about even in our days.

It was a country which had expert mathematicians and engineers, where astronomy and philosophy were known and studied.

The country was rich in hard and durable stone, but poor in timber and metal, so that the main material used for construction was granite, and this was the reason for the durability of the pyramids.

Large blocks of stone were transported over long distances by land and water, and placed into position with the help of the most primitive equipment. That was done by slaves (рабы) working for thirty or forty years. All this great amount of work was done, masses of material and a large territory, sometimes of about 52,000 square meters were used only for protecting the body of a dead king and constructing a dwelling place for his happy life in the "other world".

Notes to the Text

to place	размещать, располагать
high	высокий
foot (pl. feet)	фут = 30, 48 см
to use	употреблять, использовать

hard	крепкий, тяжелый
equipment	оборудование
to study	учить, изучать
amount	количество, сумма
to protect	защищать
protecting	зашита
rich	богатый
poor	бедный
to know (knew, known)	знать

EXERCISES

I. Answer the following questions:

1. What are pyramids? 2. What is the best known of the pyramids? 3. What can you say about ancient Egypt? 4. How were large blocks of stone transported over long distances?

II. Read the international words and find the sentences with them in the text.

Egyptian, group, Cairo, civilization, expert, mathematicians, engineers, astronomy, philosophy, metal, material, construction, granite, transport, distances, position, primitive, mass.

III. Choose the right answer:

1. The main building material for pyramids was:
   a) timber and metal; b) brick; c) granite.

2. Large blocks of building material were:
   a) found in place; b) transported over long distances;
   c) imported from Giza.

3. The pyramids were constructed for:
   a) slaves to live in; b) a dead king; c) military purposes.

IV. Make up the plan of the whole text.

V. Make up short dialogues on the following topics and act them:

1. The work of an architect.
2. Egyptian pyramids.

UNIT 6

Text: IMPRESSIONS OF MODERN ARCHITECTURE (A Letter from England) (Part I)

You ask what I think of modern architecture. I don't know very much about modern architecture in Europe but styles are probably similar in most countries today. I think this is because now architects have no opportunities they had in the past. They are seldom asked to design buildings like wonderful churches and cathedrals of the Middle Ages. Architects today have to design schools, hospitals and huge blocks of flats and offices. If they are asked to make plans for houses these are usually all alike or nearly alike.

Boxes - that's what a good deal of modern architecture reminds me of. The blocks of flats in our big towns are huge boxes, whether the fronts and sides are square or oblong. A man who lives in one of these boxes works in another big box, high up in the air. If he falls ill, he goes to another big box, called a hospital. And if the doctors make a mistake, the man is put into a coffin, which is another box, wooden this time, instead of stone or concrete.

Outside many of our large towns the main roads are often lined with really ugly little bungalows but probably the architects are not to be blamed for these. Many of them were put up by builders who saved money by not employing an architect. Retired shopkeepers and small business men usually live there. All their lives they were saving money to have "a home in the country". They don't always get what they hope for, because there are plenty of notices "For sale" outside these bungalows.

Notes to the Text

to think (thought, thought) of	думать о
modern	современный

style	стиль
opportunity	возможность (благоприятная)
blocks of flats	многоэтажный дом
square	квадратный
oblong	прямоугольный, продолговатый
to line with	тянуться вдоль
to save	экономить
to employ	пользоваться услугами, понимать
to get (got, got)	получать
to hope for	надеяться на
to be blamed for	обвинять, винить за
prefabricated	сборный

EXERCISES

I. Answer the following questions:

1. What kind of buildings do architects design now? 2. What do modern architectural buildings remind the author of the letter of? 3. Why do little bungalows look ugly?

II. Fill in the blanks with prepositions: in, for, of, with, about. Translate into Russian:

1. I don’t know very much ... modern architecture. 2. The blocks ... flats in our big towns are huge boxes, whether the fronts and sides are square or oblong. 3. The main roads are often lined ... really ugly little bungalows but probably the architects are not to be blamed ... these. 4. You ask what I think ... modern architecture. 5. If they are asked to make plans … houses these are usually all alike or nearly alike. 6. Styles are probably similar ... most countries today. 7. They don’t always get what they hope ... .

III. Find the equivalents in Russian:

1. damage	a. современный
2. concrete	b. пробуждать
3. advantage	c. древний
4. to assemble	d. ущерб

5. to depend on	e. собирать
6. to exist	f. зависеть от
7. to consist of	g. кирпич
8. ancient	h. существовать
9. stone	i. состоять из
10. modern	j. камень
11. brick	k. цемент
12. to arose	l. преимущество

IV. Read and translate the following text without using a dictionary:

FROM THE HISTORY OF HUMAN DWELLINGS (Part IV)

In the country ordinary people lived in simple one-storey cottages which did not differ much from the mud and stone huts of an earlier age.

The rich people in the country, on the other hand, built huge castles (замки) with thick walls and narrow windows. These castles were built not only as dwellings, but also to stand up to enemy attack and to be strong bases in time of war. The earliest houses of which anything is known are those of ancient Egypt. They were built of bricks dried in the sun. Some of them were built around a courtyard or garden with rooms opening into it.

Notes to the Text

one-storey	одноэтажный
narrow	узкий
to stand up (stood, stood)	противостоять
strong	сильный

V. Answer the following questions:

1. Where did ordinary people live in the country? 2. What kind of houses did the rich people build in the country? 3. What were the houses in Egypt built of?

UNIT 7

Text: IMPRESSIONS OF MODERN ARCHITECTURE (A Letter from England) (Part II)

Architects have done some very good work in designing new schools. Many of these are prefabricated, which means that as much of the building work as possible is done, not on the building site, but in factories where mass production methods can be used. The parts are taken to the site and put together there. Children who attend the best of these new schools are very happy. Their classrooms are light and big, and they have a fine large assembly hall. The children have dinner at school, and there is a dinning-hall complete with modern kitchen.

I began this letter by saying that modern buildings, especially the blocks of flats and business offices, were like big boxes. They do look like boxes from the outside, but when we go inside, we find them very well planned for their purposes. An architect today has to be an engineer too. The best modern buildings help us to live and work in comfort. They save plenty of unnecessary work. There is central heating, for example, instead of the dusty open fires we used to have, with coal to be carried up long stairs and ashes to be carried down.

I have given my opinion on what I have seen in England. I know a lot of interesting work has been done in Scandinavia, and, of course, I've read about the work of Le Corbusier in France and I'd like to see what American architects are doing now. You may know the work of the American architect Frank Lloyd Wright. He designed the Imperial Hotel in Tokyo. It was designed to resist earthquakes and it proved so strong that he did. It was one of the few buildings in Tokyo that did not fall in the terrible earthquake of 1923.

Notes to the Text

to use	использовать,	употреблять
to take (took, taken)	брать	
to attend	посещать	
to begin (began, begun)	начинать	
outside	снаружи	
inside	внутри	
purpose	цель	

heating	отопление
to see (saw, seen)	видеть
to resist	сопротивляться
to prove	доказывать
to fall (fell, fallen)	падать
fall	падение

EXERCISES

I. Answer the following questions:

1. What does a modern school building look like? 2. How can you explain the expression "a prefabricated school"? 3. Has an architect to be an engineer too? 4. What is the advantage of the central heating? 5. What is the Imperial Hotel in Tokyo famous for?

II. Give the derivatives from the following words:

to protect, to use, industry, to differ, to design, to resist, to heat, to construct, to direct, to build, to decorate.

III. Find the equivalents in Russian:

1. to put up	a. использовать
2. strength	b. внутри
3. to resist	c. толстый
4. heating	d. разрушать
5. to use	e. цель
6. inside	f. узкий
7. thick	g. прочность
8. purpose	h. отопление
9. narrow	i. поднимать, возводить
10. to destroy	j. сопротивляться

IV. Give the title to each part of the text.

V. Read and translate the following text without using a dictionary:

FROM THE HISTORY OF HUMAN DWELLINGS (Part V)

Greek houses, too, had a courtyard in the middle and round their courtyard ran a covered walk (аллея), its ceiling supported by pillars. There were special women's quarters, usually upstairs on the second storey.

In Rome bricks were used for building and houses were often finished with plaster over bricks on both inside and outside walls. The centre of family life was a garden-courtyard, surrounded by columns and with rooms opening out into it.

The earliest houses in Britain were round, built of wood or wicker basket work (плетение из прутьев) plastered over with clay. In the centre of the house was the hearth (очаг) and light came in because there were no windows.

Notes to the Text

to support	поддерживать
to run (ran, run)	проходить
courtyard	внутренний двор
pillar	колонна, опора
quarters	помещение
plaster	штукатурка
to surround	окружать
clay	глина

VI. Answer the following questions:

1. What can you say about Greek houses? 2. What material was used for building in Rome? 3. How did the light come into early English houses?

VII. Make short reports on the topics.

1. Earliest types of human dwellings. 2. First towns. 3. Earliest Egyptian houses. 4. Earliest Greek houses. 5. Earliest Roman houses. 6. Earliest British houses.

Find some information about:

1. Le Corbusier.
2. Frank Lloyd Wright.

The material from Wikipedia, the free encyclopedia may help you.

UNIT 8

Text: DIFFERENT KINDS OF BUILDINGS

Many thousands of years ago, there *were* (1) no houses such as people live in today. In those ancient times men sometimes made their homes in trees, using the leaves for keeping out rain and sun.

In colder countries the people of long ago used to dwell in caves.

As years went on and the human race progressed men *learned* (2) more about living in comfort and safety. They left their caves and trees and began building houses of different materials, such as mud, wood or stones.

Mud *was* often *used* (3) in hot countries because people found out that bricks made of mud and dried in the hot sunshine became almost as hard as stones. In ancient Egypt, especially, men learned the use of these sun-dried mud bricks. Some of their buildings *are* still *standing* (4) after several thousands of years.

After using sun-dried bricks for hundreds of years, the ancient Egyptians discovered how to cut stone for building purposes. With it they erected temples, palaces and huge tombs. The greatest tomb that *has* ever *been built* (5) is the stone pyramid of Khufu, King of Egypt.

Another race of ancient people, the Greeks, also understood the art of building with cut stone, and their buildings were beautiful as well as useful.

They used to decorate them with splendid carvings, and they were very fond of using upright pillars, partly for supporting the roofs and partly for decoration. The tops of the pillars *were decorated* (6) by carvings of men and animals. In Greece parts of many of these ancient buildings *can* still *be seen* (7) today.

During the last hundred years, many new methods of building *have been discovered* (8). One of the most recent discoveries is the usefulness

of steel as a building material.

Nowadays when it is necessary to have a very tall erection, the frame of it is first built in steel, and then the building *is completed* (9) in concrete. Concrete *is* (10) an artificial kind of stone, much cheaper than bricks or natural stone, and much stronger.

Very tall and huge buildings *are called* (11) skyscrapers. The great height of such buildings is made possible by the use of steel and concrete.

Notes to the Text

to keep (kept, kept)	хранить, защищать
for keeping out	для зашиты от
comfort	удобство
comfortable	удобный
mud	глина
to dry	сушить
erection	сооружение
frame	каркас
artificial	искусственный
strong	сильный
cheap	дешевый
height	высота

EXERCISES

I. Retell the text giving answers to the following questions:

1. What kinds of houses were used in ancient times? 2. In what countries did people live in caves? 3. What was used as a building material in hot countries? 4. When did the Egyptians begin to erect temples, palaces and huge tombs? 5. How did the Greeks decorate their houses? 6. What is one of the most recent discoveries in building? 7. How are very tall erections built nowadays? 8. What do we call very tall erections?

II. Translate the following sentences into Russian:

1. These are the materials modern structures are made of. 2. That is the system he had worked at. 3. The bricks ancient Egyptians made use of were as hard as stones. 4. The erection you are looking at was built in the

17th century. 5. This is the equipment we heard about yesterday. 6. The discovery written about in this article was made last year.

III. Define tense and voice of each verb form (1-11). Use Grammar Review.

IV. Translate the following sentences paying attention to the construction "used + infinitive"(бывало, обычно):

1. In those ancient times people used to dwell in caves. 2. The ancient Egyptians used to erect temples, palaces and huge tombs out of stone. 3. Greeks used to decorate their buildings with carvings. 4. Ancient Egyptians used to dry bricks made of mud in the hot sunshine. 5. He used to sit in his study lost in thought (размышляя). 6. In the evening he used to work in the library.

V. Read and translate the following synonyms. Make up sentences with some of them:

to carry out – to do; to keep out – to preserve from; to discover – to find out; preservation – protection; construction – building, erection; tall – high; covering – cover; to use – to make use; strength – power; to live – to dwell; to know – to learn; different – various; mud – clay.

UNIT 9

Text: HISTORY OF BUILDING MATERIALS

All the buildings erected nowadays are of two main types: they are intended either for housing or industrial purposes.

The main building materials are timber, stone (brick), concrete, steel, light metals, glass and plastics. Timber was one of the first materials to be used by man for constructional purposes. It is highly probable that it will be one of the last. Timber is unique among the materials of construction. It will be available when the earth’s capital deposits of iron, coal, clay and the rest have been consumed.

The buildings made of stone or brick are durable and fireproof, they have poor heat conductivity.

Concrete made with natural hydraulic binders was used in antiquity, particularly by the Romans. After the decline of the Roman Empire the art of making concrete has been forgotten, and the revival came much later.

Portland cement was produced more than a century ago. From the time of its first production there was a steady and gradual improvement in its compressive strength.

Reinforced concrete was patented in 1867 by Joseph Monier as a material for the manufacture of tubs for plants. Today reinforced concrete is used in all civilized countries as one of the most important building materials. One of the essential properties of concrete is its compressive strength.

Notes to the Text

to erect	сооружать, строить
to be intended for	быть предназначенным для
timber	строевой лес
deposits	месторождение, залежь
to consume	уничтожать
durable	прочный
binder	связывающее вещество
to forget (forgot, forgotten)	забывать
Portland cement	портландцемент
compressive strength	прочность на сжатие
application	применение
conductivity	проводимость

EXERCISES

I. Answer the following questions:

1. What are buildings intended for? *2.* What are the main building materials? 3. When was Portland cement produced? 4. When was reinforced concrete patented? 5. What was it first used for? 6. How is it used now? 7. What material was the first to be used for constructional purposes?

II. Find the equivalents in Russian:

1. concrete	a. каменный уголь
2. timber	b. стекло
3. steel	c. готовый бетон
4. stone	d. бетон
5. light metals	e. сталь
6. brick	f. железобетон
7. plastic	g. цемент
8. glass	h. камень
9. iron	i. строевой лес
10. coal	j. кирпич
11. clay	k. легкие металлы
12. cement	l. пластмасса
13. reinforced concrete	m. железо
14. precast concrete	n. глина

III. Combine the following pairs of sentences according to the model:

Model:

T.: Plastics will be widely used. Metals will have been consumed. (when)

St.: Plastics will be widely used when metals have been consumed.

1. This plant will have been constructed. You will come to our city again. (before) 2. The engineers will be able to continue their investigations. They will be given due time. (provided) 3. We shall obtain any desired properties of two or three metals. We shall combine them in an alloy. (if) 4. We shall do work. We shall rub two surfaces together. (when) 5. There will be no danger of overheating. Temperature will remain constant. (as long as) 6. These substances will ionize completely. They will be dissolved in natural water. (as soon as) 7. Timber will be widely used. New plastics will be developed. (until)

IV. Supply antonyms for the following words:

ancient	little
to remain	low

to destroy	to forget
to assemble	to put up
advantage	narrow
to extend	drawback
huge	weak
to begin	to consume
rich	to finish
high	modern
strong	to disassemble
wide	to cut
to remember	poor

V. Ask questions to all the parts of the following sentences. Use Grammar Review.

1. Timber was one of the first materials to be used by man for constructional purposes. 2. Today reinforced concrete is used in all civilized countries as one of the most important building materials.

VI. Translate into Russian paying attention to the word "one". Use Grammar Review.

1. To determine the density of a body one must know its mass and its volume. 2. Ductile materials have greater strength than brittle (хрупкий) ones. 3. Copper is one of the metals used in the prehistoric times.

VII. Read and translate the following text using notes to the text.

REINFORCED CONCRETE

Reinforced concrete is a composite material in which concrete's relatively low tensile strength and ductility are counteracted by the inclusion of reinforcement having higher tensile strength and/or ductility. The reinforcement is usually, though not necessarily, steel reinforcing bars (*or* rebars) and it is usually embedded passively in the concrete before it sets. Reinforcing schemes are generally designed to resist tensile stresses in particular regions of the country that might cause unacceptable cracking and/or structural failure. Modern reinforced concrete can contain varied reinforcing materials made of steel, polymers or alternate composite

material in conjunction with rebar or not. Reinforced concrete may also be permanently stressed (in compression), so as to improve the behaviour of the final structure under working loads. In the United States, the most common methods of doing this are known as pre-tensioning and post-tensioning.

For a strong, ductile and durable construction the reinforcement needs to have the following properties at least:

high relative strength;

high toleration of tensile strain;

good bond to the concrete, irrespective of pH, moisture, and similar factors;

thermal compatibility, not causing unacceptable stresses in response to changing temperatures;

durability in the concrete environment, irrespective of corrosion or sustained stress for example.

Notes to the Text

reinforced concrete	железобетон
concrete	бетон
tensile strength	прочность на разрыв
ductility	пластичность
reinforcement	усиление, укрепление
steel reinforcing bars	арматуры
to embed	встраивать
tensile stress	растягивающее напряжение
cracking	растрескивание
in conjunction with	в сочетании с
in compression	при сжатии
pre-tensioning	предварительное натяжение
post-tensioning	последующее натяжение
ductile	пластичный
tensile strain	прочность на растяжение
bond	сцепление
thermal compatibility	тепловая совместимость
durability	долговечность
sustained stress	устойчивое напряжение

VIII. Discuss the main properties of reinforced concrete.

UNIT 10

Text: METALS AS BUILDING MATERIALS

Metal is used as structural framework for larger buildings or as an external surface covering. There are many types of metals used for building. Metal is used in prefabricated structures which can be seen in large cities. It requires a great deal of human labour to produce metal, especially in large amounts needed for building industries. Corrosion is metal's prime enemy when it comes to longevity.

The history of building in iron and steel is more than a hundred years old. The construction of the first railways has given considerable impetus to cast and wrought iron production. The commonest quality of steel for building construction is known as mild steel (m.s.). Several qualities of high tensile steel are widely used everywhere. They vary both in their chemical composition and their mechanical properties.

Steel is a metal alloy. Its major component is iron. And it is the usual choice for metal structural building materials. It is strong, flexible, and if refined well and/or treated lasts a long time.

The elements used for most steel structures are the hot-rolled sections, produced in a great variety by the rolling mills.

Aluminium is the most important of the light metals used in the building industry. The lower density and better corrosion resistance of aluminium alloys and tin sometimes overcome their greater cost. The major characteristics of aluminium in which the architect is interested are its durability and its light weight.

Magnesium is still lighter, but it has not yet become a building material. It is used only as an alloying metal in conjunction with aluminium.

Copper is a valued building material because of its advantageous properties. These include corrosion resistance, durability, low thermal movement, light weight, radio frequency shielding, lightning protection, sustainability, recyclability, and a wide range of finishes. Copper is incorporated into roofing, gutters, downspouts, domes, spires, vaults, wall cladding, building expansion joints, and indoor design elements.

Other metals used include chrome, gold, silver, and titanium. Titanium can be used for structural purposes, but it is much more expensive than steel. Chrome, gold, and silver are used as decoration,

because these materials are expensive and lack structural qualities such as tensile strength or hardness.

Notes to the Text

cast iron	чугун
wrought iron	сварочное железо
quality	качество, сорт
mild steel (m.s.)	сварочная сталь
high-tensile steel	сталь с высоким сопротивлением разрыву
alloy	сплав
to vary	меняться
variety	разнообразие, множество
composition	состав
property	свойство
structure	устройство, сооружение
rolling mill	прокатный цех
alloying	легирующий
weight	вес
shielding	защита
sustainability	устойчивость
recyclability	легкая утилизация
roofing	кровельный материал, покрытие
gutter	желоб
downspout	водосточная труба
dome	купол
spire	шпиль
vault	свод
wall cladding	облицовка стен
expansion joint	деформационный шов

EXERCISES

I. Answer the following questions:

1. Where is metal used? 2. It requires a great deal of human labour to produce metal, doesn’t it? 3. What is metal’s prime enemy? 4. What do the qualities of steel depend on? 5. What is the major component of steel? 6.

What are the major characteristics of aluminium? 7. How is magnesium used? 8. What do you know about copper? 9. What metal is more expensive: steel or titanium?

II. Read and translate the following sentences paying attention to the Degrees of Comparison. Use Grammar Review.

1. The history of building in iron and steel is more than a hundred years old. 2. The commonest quality of steel for building construction is known as mild steel. Aluminium is the most important of the light metals used in the building industry. The lower density and better corrosion resistance of aluminium alloys and tin sometimes overcome their greater cost. Magnesium is still lighter than aluminium. Titanium can be used for structural purposes, but it is much more expensive than steel.

III. Put in the missing prepositions:

1. Modern buildings can be divided ... two types. 2. These buildings are made ... stone and brick. 3. Metals are used... the development ... new constructions. 4. Glass is employed ... the construction ... industrial buildings. 5. Timber was one ... the first materials used ... man.

IV. Ask questions on all the parts of the following sentences:

1. Timber has always been one of the most important materials used by man. 2. People employ glass for many purposes. 3. Iron is widely used as a building material. 4. Nowadays concrete is widely used in many countries.

UNIT 11

Text: CEMENT (Part I)

The requirements to be fulfilled by concrete vary to a great extent. One of the essential properties of concrete is its compressive strength. From the tine of its first production more than a century ago there was a steady and gradual improvement in the compressive strength of Portland cement until the beginning of the war. With the cements now available

much higher strengths can be obtained than some 50 or 60 years ago. The increase in strength is partly due to the increased fineness to which modern cements are ground.

Cement develops heat during hydration. This is of considerable importance in certain types of concrete construction, particularly in structures of large volume, such as dams, massive retaining walls and the like. A very high rate of heat development is advantageous in work, done in cold weather, so as to protect the fresh concrete from the effect of low temperatures.

It should be noted, of course, that not all properties desired can be obtained in any one cement.

Selection of the cement alone does not ensure concrete with the properties desired, which depend also on the choice of aggregates and mixes, the control of the quantity of water added to the mix, and on a series of other factors.

Notes to the Text

requirements	требования
to fulfill	выполнять, соответствовать
to obtain	получать
extent	мера, степень
to a great extent	в значительной степени
fineness	мелкозернистость
to develop heat	нагреваться
hydration	присоединение воды, гидротация
volume	объем
advantageous	выгодный, удобный
to select	выбирать
selection	выбор, подбор
to grind (ground, ground)	размалывать, молоть
retaining	удерживающий
to ensure	обеспечивать, гарантировать
aggregate	заполнитель (бетона)

EXERCISES

I. Answer the following questions:

1. What is one of the essential properties of concrete? 2. What occurs with cement during hydration? 3. What protects the fresh concrete from the effect of low temperatures?

II. Translate the following sentences into Russian paying attention to the preposition "of":

1. Bricks are made of mud. 2. Egyptian Pyramids are made of stone. 3. We usually make houses of bricks. 4. Nowadays very tall and huge buildings are made of steel and concrete. 5. There house was made of wood. 6. Windows are usually made of glass and wood. 7. What is your house made of? 8. What is the furniture of your flat made of? 9. Is it made of wood?

III. Give three forms of the following verbs and translate them into Russian. Use Grammar Review if necessary:

Be (быть, есть, находиться)	Was/were	been
depend on (upon)		
destroy		
differ		
embed		
employ		
find		
cut		
overcome		
obtain		
vary		

IV. Supply antonyms for the following words:

always, external, to soften, weakness, never, to harden, internal, strength, cheap, low, expensive, tall.

V. Translate the following text without using a dictionary:

The buildings erected nowadays can be divided into two general classes: buildings for housing and industrial buildings. Buildings can be divided into stone (or brick), wood and concrete buildings. Brick is an artificial material made of clay which is then burnt for hardening. Natural stone is used for footing (опора) and foundations for external walls carrying the load. The coverings or upper parts of buildings meant (предназначенные) for keeping out rain and wind and for preserving the interior from exposure to weather (для защиты от погодных условий) are called roofs. They tie the walls and give the construction strength and firmness. Men of long ago made their homes in trees, using the leaves for keeping off rain and sun.

UNIT 12

Text: CEMENT (Part II)

The tremendous expansion of the Portland cement industry is due to extensive road-building programs, to the development of reinforced concrete construction, and to the adaptability and uniformity of the material.

Reinforced concrete permits the construction for instance of a horizontal platform bridging the space between two walls, capable of carrying heavy loads without other support. Not only walls and piers, but girders of concrete are now freely used. Bridges, piers, tunnels, dams, and canal walls are built of concrete as well as sidewalks, steps, garage and factory floors, and building foundations.

One reason for the almost universal use of Portland cement is the comparative ease of working it, another is its strength, which increases with age; a third is its uniformity, which permits calculations of strength as reliable as those made for structural steel.

Portland cement is a greenish-gray powder. Its essential constituents are lime, silica, and alumina. The hardening of Portland cement continues for years; and the concrete made from it increases in strength. As time passes, the gelatinous calcium hydrate crystallizes, adding a further element of strength.

Portland cement sets under fresh water as well as in air.

Notes to the Text

adaptability	приспособляемость
uniformity	однородность
to permit	позволять
load	нагрузка
to support	поддерживать
support	помощь, поддержка
pier	столб
girder	балка
foundation	фундамент, основание
structural steel	машиностроительная сталь
lime	известь
silica	кварц
hardening	затвердение
to. set (set, set)	*зд.*: схватываться

EXERCISES

I. Answer the following questions:

1. Where do we use reinforced concrete? 2. What units are built of concrete? 3. What are the reasons for the universal use of Portland cement? 4. What are its essential constituents?

II. Translate the following word combinations into Russian:

wood building, expensive materials, concrete buildings, artificial building material, sun-dried mud bricks, the building erected nowadays, huge buildings, retaining walls, made of clay, natural stone, external walls carrying the load, the coverings of building, a greenish-gray powder, meant for, selection of the cement, the properties desired.

III. Fill in the blanks with the words "as ... as", "not so... as":

1. Ancient Greeks ... well ... ancient Egyptians know the art of building with cut stone. 2. Ancient Greeks used upright pillars for supporting the roofs ... well ... for decoration. 3. Stone is ... strong ...

concrete.4. Brick is ... cheap ... concrete. 5. Sun-dried mud bricks were ... hard ... stones. 6. In modern architecture upright pillars are ... often used ... they were in ancient times. 7. Those decorations are ... beautiful... these ones. 8. The interior of this building is ...beautiful ... the exterior. 9. Natural stone is used for footing (опора) ... well ... for foundations for external walls carrying the load. 10. Roofs tie the wall ... well ... give the construction strength and firmness.

IV. Translate the following sentences into English:

1. Бетон – искусственный камень. 2. Бетон широко применяется как (as) строительный материал. 3. Он прочнее и дешевле кирпича. 4. Огромная высота небоскребов достигается применением стали и бетона. 5. Древние люди не знали такого строительного материала, как бетон. 6. Древние египтяне строили свои пирамиды и дворцы из камня.

V. Find the equivalents in Russian:

1. to ensure	a. поддерживать
2. to grind	b. нагрузка
3. to support	c. затвердение
4. girder	d. мелкозернистый
5. load	e. известь
6. hardening	f. гарантировать
7. fineness	g. машиностроительная сталь
8. lime	h. однородность
9. uniformity	i. молоть
10. structural steel	j. балка

UNIT 13

Text: SILICON. SILICA IN INDUSTRIES

Silicon is one of the most abundant elements found in the earth’s crust. Silicon never occurs free, but in combination with oxygen or with oxygen and metals. It forms a great variety of organic and inorganic compounds.

Elementary silicon is used as an alloying constituent to strengthen aluminium, copper, magnesium and other metals. It has a deoxidizing effect on steel. It is formed by slow deposition from solution in water during the lapse of centuries (в течение столетий). At other times the silica separates from solution as a colorless gel, which is gradually dried and compact into flint. Flint is found in clay beds (залежи глины) in all parts of the world.

Silica (quartz) is a crystalline form of silicon dioxide.

Silica bricks made of nearly pure silica, are extensively used in metallurgical industry, as a refractory for furnace linings. Silica bricks have the advantage of a lower coefficient of expansion than ordinary bricks: that is they expend less when heated to high temperatures. Silica bricks of high temperatures must be protected from the action of metallic oxides and "basic" slag, since these materials react with silica to form fusible silicates.

Finely divided silica slowly reacts with alkaline solutions, even at room temperature, forming soluble silicates. Silica is mixed with lime and exposed to steam, the mixture sets to a hard mass (смесь затвердевает в крепкую массу), a hydrated calcium silicate. This reaction is the basis of an important industry - the production of sand-lime brick.

Silica melts at 1670 degrees c a temperature far above that reached in any gas- or coal-fired furnace.

Silica is also used as one of the raw materials for the manufacture of common glass.

Notes to the Text

silicon	кремний
silica	кварц
abundance	распространенность, изобилие
abundant	распространенный
to occur	встречаться
to alloy	сплавлять
alloying	легирующий
to strengthen	усиливать
deposition	осадок, отложение
solution	растворение
soluble	растворимый
to separate from	отделять от

to compact	спрессовывать, уплотнять
flint	кремень
slag	шлак
expansion	расширение
fusible	легкоплавкий
lime	известь
sand-lime brick	песчано-силикатный кирпич
constituent	элемент

EXERCISES

I. Answer the following questions:

1. What can you say about silicon? 2. How is elementary silicon used? 3. How is silicon formed? *4.* Where is flint found? 5. Where are silica bricks used? 6. What is the difference between silica bricks and ordinary bricks?

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

сырье; распространенный элемент; обычное стекло; кислород; никогда не встречается в свободном виде; кремниевый (кварцевый) кирпич; имеет преимущество; двуокись кремния; легирующий элемент; в сочетании с; в течение столетий; обычный кирпич; производство; алюминий.

III. Change active construction into passive according to the model. Mind the tenses. Use Grammar Review if necessary.

Model:

T.: We use various grades of copper for engineering purposes.
St.: Various grades of copper are used for engineering purposes.

1. We use some metals in the native state. 2. Chemists can convert chemical energy into heat. 3. Ancient people have employed bronze since the prehistoric times. 4. Metallurgists extract aluminium from rock with high alumina content. 5. A new gas field will supply natural gas to our city.

IV. Translate into English:

1. Кремний - один из наиболее распространенных элементов. 2. Кварц используется для производства обычного стекла. 3. Кремний образует большое разнообразие органических и неорганических соединений. 4. Он (кремний) никогда не встречается в свободном виде, но только с кислородом или с кислородом и металлами. 5. Кремниевые кирпичи широко используются в металлургической промышленности.

V. Ask questions on all the parts of the following sentences:

1. Flint is found in clay beds in all parts of the world.
2. Steel is ’used for the structural parts of buildings, rails and ships.

UNIT 14

Text: BRICK

Common building brick is made of clay containing a considerable proportion of fine sand. The material is kneaded with water, and the mass is pressed through a rectangular opening and cut crosswise with wires. The presence of the sand lowers the plasticity of the raw material, but decreases its tendency to crack, twist, or shrink during drying.

The fully dried material is heated until it begins to vitrify. This means that temperature is finally reached at which the more fusible components of the mixture begin to melt to a liquid, which flows around the unfused particles, cementing them firmly together. When it has been carried the ceramic material is said to be completely vitrified.

Notes to the Text

to contain	содержать
proportion	часть, пропорция
fine sand	мелкозернистый песок
to knead with	замешивать с
to press through	выжимать через

to cut crosswise	резать поперек
plasticity	гибкость
to decrease	сникать
to vitrify	превращаться в стекло

EXERCISES

I. Answer the following questions:

1. What is common building brick made of? 2. What lowers the plasticity of the raw material but decreases its tendency to crack, twist, or shrink during drying? 3. Can you explain the process of vitrifying?

II. Change passive construction into active according to the model. Mind the tenses:

Model: T.: Cast iron and steel *are produced* from pig iron.
St.: We *produce* cast iron and steel from pig iron.

1. Common building brick is made of clay containing a considerable proportion of fine sand. 2. The material is kneaded with water, and the mass is pressed through a rectangular opening and cut crosswise with wires. 3. The fully dried material is heated until it begins to vitrify. 4. Bridges, tunnels, piers, dams and canal walls are built of concrete. 5. Steel is used for the structural parts of buildings, rails and ships. 6. Aluminium is used in certain cases in wires and cables as conductors. 7. Windows are usually made of glass and wood. 8. Nowadays very tall and huge buildings are made of steel and concrete. 8. Ferrous metals are used in industry in two general forms. 9. A new steel plant has been constructed in our town.

III. Find the equivalents in Russian:

1. to alloy	a. уплотняться
2. to contain	b. шлак
3. fine sand	c. часть
4. plasticity	d. сжимать
5. silicon	e. мелкозернистый песок
6. to compact	f. превращаться в стекло
7. slag	g. содержать

8. to strengthen	h. кремний
9. solution	i. сплавлять
10. proportion	j. гибкость
11. to decrease	k. растворение
12. to vitrify	l. усиливать

IV. Read and translate the dialogue:

A HOUSE

Pete: Don't you know, Ann that not all buildings are houses?
Ann: Is that right? What do you call a house then, Pete?
Pete: A house is usually a building for human habitation.
Ann: I see now. And it can be intended for one family only to live in, or sometimes, if it's big enough, for several.
Pete: Certainly. Depending on its size small houses are generally occupied by one family, in big ones the number of flats can be large.
Ann: What are the main sections of a house, Pete?
Pete: Do you mean the main parts of a building?
Ann: Yes. That's what I meant to ask you.
Pete: Well, any building consists of the foundation, walls and partitions, floors and the ceiling and, certainly, the roof section.
Ann: And the set of rooms on the level of one floor is called a storey, isn't it?
Pete: Yes, Ann, it is. And, accordingly, we speak of one-, two-, three- and so on storey houses. In England, the storey closest to the ground is known as the ground floor.
Ann: Most houses in our town are four- or five-storey houses.
Pete: And, I wouldn't say they are low. What are they made of?
Ann: Mostly of bricks and concrete blocks. They are prefabricated, certainly.
Pete: And what about houses of plastic sections?
Ann: Oh, plastic houses are our future. How beautiful and light they are going to be!
Pete: Yes, and we shall build them. We need many good houses. Just look, there is not a single town in our country without hundreds of building cranes rising all above it, hoisting bricks and panels.
Ann: Yes, and new towns spring up everywhere like mushrooms.

Notes to the Text

to intend	предназначаться для
to occupy	занимать
the main parts	основные части
one-storey	одноэтажный
prefabricated concrete blocks	сборные бетонные блоки

V. Give English equivalents to the following word combinations:

знаешь ли ты; понимаю; в зависимости от размера; вы имеете в виду; ряд комнат; можно сказать; основные части; первый этаж; из чего они сделаны; строительные краны.

VI. Fill in the blanks with one of the phrases given below:

1. I live ... house. 2. This house ... brick. 3.1 live... floor. 4. A storey is ... on the level of one floor. 5. Any building ... the foundation section, walls, ceiling and the roof section.

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consists of; a set of rooms; on the second floor; is made of; in a big

UNIT 15

Text: BRIDGES AND TUNNELS
Part I. BRIDGES

One of the outstanding statesmen once said in his speech, "There can be little doubt that in many ways the story of bridge - building is the story of civilization. By it we can readily measure an important part of a people’s progress." Great rivers are important means of communication for in many parts of the world they have been, and still are, the chief roads. But they are also barriers to communication, and people have always been concerned with finding way to cross them.

For hundreds of years men have built bridges over fast-flowing rivers or deep and rocky canyons. Early man probably got the idea of a bridge from a tree fallen across a stream. From this, at a later stage, a bridge on a

very simple bracket or cantilever principle was evolved. Timber beams were embedded into the banks on each side of the river with their ends extending over the water. These made simple supports for a central beam reaching across from one bracket to the other. Bridges of this type are still used in Japan, and in India. A simple bridge on the suspension principle was made by early man by means of ropes, and is still used in countries such as Tibet. Two parallel ropes suspended from rocks or trees on each bank of the river, with a platform of woven mats laid across them, made a secure crossing. Further ropes as handrails were added. When the Spaniards reached South America, they found that the Incas or Peru used suspension bridges made of six strong cables, four of which supported a platform and two served as rails.

All these bridges made possible crossings only over narrow rivers. The type of temporary floating bridge, the pontoon bridge has been used for military purposes; military engineers can construct a temporary bridge on this principle, able to carry all the heavy equipment of a modern army, in an extremely short time.

Notes to the Text

means of communication	средство сообщения
road	дорога
to be concerned with	быть заинтересованным
to cross	пересекать, переправляться
deep	глубокий
a bridge on a bracket or cantilever principle (= a bracket or cantilever bridge)	консольный мост
to evolve	развивать(ся)
beam	балка
to support	поддерживать
support	поддержка, опора
to reach	доставать, достигать
a bridge on the suspension principle (= a suspension bridge)	висячий (подвесной) мост
to suspend	подвешивать, откладывать
secure	надежный
handrails	поручни
to lay (laid, laid)	класть, положить

a floating bridge	понтонный мост
equipment	оборудование
rope	веревка

EXERCISES

I. Answer the following questions:

1. From what did early man get an idea of a bridge? 2. What kind of bridge is a cantilever one? 3. Where are bridges of this type still used? 4. By what means was a suspension bridge made of? 5. For what purpose is a temporary floating bridge used?

II. Read the international words and translate them into Russian:

civilization, progress, communication, principle, central, construct, modern, army, story, barrier, canyon, cable, lift, peak.

III. Fill in the blanks with one of the words given below:

1. A big engineering ... was suggested by a group of designers. 2. ... in the structure may lead to its collapse (крушение) 3. The road needs widening as its ... is not enough for its modern traffic. 4. No sound could ... the thick walls of the building. 5. They had to remove a thick ... of sand before they started the construction. 6. Timber ... were transported by special lorries.

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beams, penetrate (проникать), project, width, cracks, layer (слой)

IV. Translate the following sentences into Russian:

1. Great rivers are important means of communication for in many parts of the world they have been, and still are, the chief roads. 2. Communication over long distances is made possible by means of radio. 3. Timber beams were embedded into the banks on each side of the river with their ends extending over the water. 4. A simple bridge on the suspension principle was made by early man by means of ropes. 5. A rope was stretched across the street. 6. Two parallel ropes suspended from rocks on each side of the river, with a platform of woven mats laid across them,

made a secure crossing. 7. They could reach rock after many metres of sand and clay. 8. They laid the foundation of a new school.

V. Make up sentences using the words given in the table:

There is	a large number of a set of a great demand for	railways schemes instructions districts devices stones cracks units bridges rivers buildings bricks	here (?)
There are	several some no a few plenty of		
There are not Are there	any many		

UNIT 16

Text: BRIDGES AND TUNNELS
Part II. BRIDGES

The idea of driving wooden piles into the bed of the river in order to support a platform was put into practice 3,500 years ago. This is the basis of the "trestle" or pile bridge which makes it possible to build a wider crossing easier for the transport of animals and goods.

With the coming of the railway in the 19th century there was a great demand for bridges, and the railways had capital for building them. The first railway bridges were built of stone or brick. In many places long lines of viaducts were built to carry railways; for instance, there are miles of brick viaducts supporting railways to London.

The next important development in bridge-building was the use of iron, and later, steel. The first iron bridge crossed the river Severn in Great Britain.

The idea of a drawbridge, a bridge hinged so that it can be lifted by chains from inside to prevent passage, is an old one. Some Leningrad bridges were built on this principle. A modern bridge probably demands

greater skill from designer and builder than any other civil engineering project. Many things should be taken into consideration, and these may vary widely according to local conditions. In deciding what type of bridge is most suitable the designer has to allow for the type and weight of the traffic, and width and depth of the gap to be bridged, the nature of the foundations and the method of erecting the bridge. The designer has to calculate carefully how the various loads would be distributed and to decide which building materials are more suitable for carrying these loads.

Notes to the Text

to drive	вбивать
pile	свая
basis	основание
a "trestle"(pile) bridge	мост на рамных основах
to demand	требовать
demand	требование
a drawbridge	разводной мост
to prevent	предотвращать
passage	проход
to project	проектировать
project	проект
civil engineering	гражданское строительство
width	ширина
depth	глубина
to distribute	распределять
skill	умение, мастерство

EXERCISES

I. Answer the following questions:

1. Why are piles driven into the bed of the river? 2. Why was there a great demand for bridges in the 19th century? 3. What were the first railway bridges built of? 4. When was the first iron bridge built in Great Britain? 5. Is the idea of a drawbridge an old one? 6. Can you give an example of a drawbridge? 7. What things should be taken into consideration before erecting the bridge?

II. Translate the following sentences into Russian paying attention to the modal verbs and their equivalents. Use Grammar Review.

1. The load should be distributed among all piles. 2. The builders are to erect the structure in two months. 3. You will have to take measures to prevent spring waters from penetrating the foundation. 4. The workers will be able to finish the construction of the temporary bridge across the river next month. 5. You may change some details of this plan. It's just a model. 6. You should increase the width of the bridge. 7. He was allowed to have a rest after a busy day at the building site. 8. After the war the country was in ruins and the people had to work hard to restore national economy. 9. Having widened and deepened the canal, they could use it for transportation. 10. The road must be extended and widened; it is the decision of the administration. 11. The manager said that he can take measures for providing road safety. 12. You ought to finish this work in time. 13. I need your help, it's very important.

III. Translate the following word combinations into Russian:

outstanding invention; outstanding results; no doubt about it; a fallen tree; to evolve a theory; supporting beam; to get support; to rope a box; to lay bricks; to be secure from danger; to prevent an accident; a bridge pile; to drive piles; civil engineer; a number of projects; local transport; the width and the depth of the river; to erect buildings; circular cross-section; to suggest a scheme; to carry railways; to cross the river; to take into consideration; local conditions.

IV. Translate the following sentences into English:

1. Большие реки являются важными средствами сообщения во многих частях мира. 2. Сотни лет люди возводят мосты над быстрыми реками. 3. Сооружение было построено на сваях. 4. Строители жили во временных зданиях. 5. Простой висячий мост делается при помощи веревок. 6. Висячий мост все еще используется в таких странах, как Тибет. 7. Временный понтонный мост используется в военных условиях. 8. Возведение современного моста требует большого умения конструктора и строителя. 9. Многие веши должны быть приняты во внимание при конструировании моста.

V. Find the equivalents in Russian:

1. support	a. висячий мост
2. handrails	b. проектировать
3. a floating bridge	c. разводной мост
4. to project	d. понтонный мост
5. a suspension bridge	e. глубина
6. width	f. опора
7. depth	g. свая
8. a pile bridge	h. поручни
9. pile	i. ширина
10. a drawbridge	j. мост на рамных основах
11. basis	k. глубокий
12. deep	l. основание

VI. Make up sentences using the words given in the table:

There is	some no a great deal of a large amount of a little plenty of	air clay coal sand oil steam light concrete timber iron steel fuel	here (?)
There are not Are there	any much		

UNIT 17

Text: BRIDGES AND TUNNELS
Part III. TUNNELS

Tunnelling is difficult, expensive and dangerous engineering work. Tunnels are built to provide direct automobile or railway routes through mountain ranges, under or over rivers. They can also provide underground

channels for water, sewage or oil. Before the 19th century men had not acquired enough skill in engineering to carry out extensive tunnelling. Tunnels however were known in ancient times. They were, for instance, driven into the rock under the Pyramids of Egypt, and the Romans built one in Rome for their chief drain, parts of which still remain. One of the earliest tunnels known was made in Babylon. It passed under the Euphrates River and was built of arched brickwork being 12 feet high and 15 wide. Other ancient tunnels were built for water supply and for drainage.

Modern tunnels are often very long and deep. The Simplon tunnel on the France-to-Italy railway, for example, is 12 miles long and in one place the peaks of the Alps rise over 6,000 feet above it. Some tunnels are over 50 feet in diameter. Many are circular in cross-section. Others are horseshoe-shaped, with a level floor on which it is easy to lay permanent roads and railways.

Notes to the Text

to provide	обеспечивать, снабжать
range	линия, цель
channel	канал
drain	дренаж, водосток
drainage	осушение, сток
to supply	снабжать
circular	круглый, окружность
cross-section	поперечное сечение
horseshoe-shaped	подковообразный
permanent	постоянный
to acquire	приобретать
mile	миля (= 1609 м - сухопутная миля; 1852 м - морская миля)

EXERCISES

I. Answer the following questions:

1. What are tunnels built for? 2. Where did one of the earliest tunnels pass? 3. How long is the Simplon tunnel?

II. Translate the following sentences into Russian:

1. Driving piles into a bed of the river is considered to be very hard work. 2. They went through a long passage. 3. Civil engineering means the building of roads, railways, bridges, tunnels, canals, etc. 4. The new project has some advantages over the previous one. 5. When constructing a road it is cheaper to use local materials. 6. This machine is suitable for loading and unloading earth material. 7. The width of the channel was not enough for big ships. 8. A range of mountains goes through the whole continent from the north to the south. 9. The construction has already started of a new circular road which will link several of the city's districts. 10. The cross-section of the tube has been measured. 11. He suggested a good plan of replacing the old equipment. 12. According to the scheme this channel will be deepened and widened. 13. This device can be used for studying the upper layers of the earth.

III. Translate the following sentences paying attention to the underlined words. Define the form and part of speech of these words:

1. Suspension bridges were made of six strong cables four of which supported a platform and two served as rails. 2. They hope to have your support. 3. He supports a big family. 4. The work was suspended for a week. 5. The construction was not ready. There was some suspended matter in it. 6. The house was built on piles. 7. The workers piled bricks on each other. 8. By strengthening the river banks, the city secured itself against floods (наводнение). 9. Is this bridge secure? 10. Mother wants to feel secure about her children's future. 11. There is a great demand for cars in many countries. 12. A modern bridge probably demands greater skill from designer and builder than any other civil engineering project. 13. The designers projected the rebuilding of a street. 14. They saw a chain of mountains in the distance. 15. The dog was chained to the tree. 16. The ground was full of cracks after the hot dry summer. 17. Some parts of the structure cracked.

IV. Translate the following sentences into English:

1. Строительство туннеля – это сложная и опасная работа. 2. Люди думали о туннелях с давних времен. 3. Один из самых первых туннелей был построен в Вавилоне. 4. Его высота была 12 футов, а ширина – 15. 5. Современные туннели очень длинные и глубокие. 6.

Некоторые туннели строят круглыми или подковообразными по форме.

V. Agree or disagree with the following statements beginning with the words: It’s wrong; That’s right; According to the text; As far as I know:

1. The bridge that can be lifted by chains from inside is a suspension bridge. 2. The Incas or Peru used iron bridges. 3. Pile bridges are used for very narrow rivers. 4. The first railway bridges were made of timber. 5. Tunnels are built only to provide direct routes through mountain ranges or under or over rivers. 6. Tunnels were quite unknown in ancient times. 7. One of the earliest tunnels known was made in Egypt. 8. The Simplon tunnel on the France-to-Italy railway is 20 miles long and in one place the peaks of the Alps rise over 5,000 feet above it.

VI. Find some more information in the Internet and make reports on the following topics:

1. Rivers as a means of communication. 2. Types of bridges (cantilever bridge, suspension bridge, pontoon bridge, trestle bridge, and drawbridge). 3. The purposes of building tunnels. 4. The Simplon tunnel.

VII. Read the texts without using a dictionary:

TUNNEL UNDER CHANNEL

A tunnel under the English Channel was first suggested in 1856. It was agreed in 1875 to build it and this work actually began. However, the British War Office objected that an enemy on the European mainland could easily invade England through such a tunnel, and the British Government objected to the scheme.

In 1957 interest revived in the idea of a Channel Tunnel and the question was studied afresh by a group of French and British engineers. Such a Tunnel between Dover and Saggate would have a length of about 36 miles of which 24 miles would be under the sea, and would run through a layer of dense chalk which is known to be free from cracks and allows water to penetrate it slowly. It would probably have to be a twin railway tunnel. There are several difficulties in having a road tunnel of this length, the chief of which is the enormous cost of ventilating it. Total cost is

estimated at between 450 and 560 million dollars, to be shared by Britain and France with possibly some other European country.

No dates have so far been mentioned definitely but it might be completed at the earliest in 1980. The plan for the railway is to sink a metal pipe or bore a hole across the 21 mile Dover - Calais Strait (Дуврский пролив). Trains would each carry about 300 automobiles, driven by owners on to flatcars, and journeys would last 45 minutes.

CHANNEL TUNNEL

The Channel Tunnel also known as Chunnel or Eurotunnel is a 50.450 km long rail tunnel beneath the English Channel at the Strait of Dover, connecting Folkestone, Kent in England to Coquelles near Calais in northern France. The "tunnel" consists of three separate tunnels; two 7.6m diameter single track, single direction rail tunnels which are 30m apart and one 4.8m diameter service tunnel between them.

It was a megaproject with several false starts, but it was finally completed in 1994. It is the second-longest rail tunnel in the world, with the Seikan Tunnel in Japan being longer, but the undersea section of the Channel Tunnel, at 37.9 km, is the longest undersea tunnel in the world. The American Society of Civil Engineers has declared the tunnel to be one of the Seven Wonders of the Modern World.

CONSTRUCTION

Tunnels are dug in types of materials varying from soft clay to hard rock. The method of tunnel construction depends on such factors as the ground conditions, the ground water conditions, the length and diameter of the tunnel drive, the depth of the tunnel, the logistics of supporting the tunnel excavation, the final use and shape of the tunnel and appropriate risk management.

There are three basic types of tunnel construction in common use.

Cut and cover tunnels, constructed in a shallow trench and then covered over.

Bored tunnels, constructed in situ (=on site), without removing the ground above. They are usually of circular or horseshoe cross-section.

Immersed tube tunnels, sunk into a body of water and sit on, or are buried just under, its bed.

Notes to the Text

to object	возражать
object	цель, объект
dense	плотный
to penetrate	проникать
to estimate	устанавливать, подсчитывать, оценивать
to mention	упоминать
to sink (sank, sunk)	тонуть, утопать
scheme	схема, план, проект
to bore	сверлить, бурить
to suggest	предлагать

VIII. Answer the following questions:

1. Why did the British War Office object to the building of the tunnel under the English Channel? 2. How long will the tunnel across the English Channel be? 3. What countries will share the cost of the construction? 4. What is Eurotunnel? 5. What is the undersea section of the Channel Tunnel? 6. Which of two tunnels is longer? 7. What factors does the method of tunnel construction depend on?

IX. Form sentences using the following words:

1. A tunnel, suggested, under, in 1856, was, the English Channel, first. 2. The question, French, studied, engineers, by, was, a group, British, of, and. 3. There, difficulties, this, are, in, road, of, several, having, a tunnel, length.

UNIT 18

HOUSE BUILDING

Text: LIFT-SLAB METHOD IN CONSTRUCTION

The lift-slab construction technique uses conventional materials in a new way. Buildings constructed by this method consist of reinforced or

prestressed concrete floors supported by steel columns. The concrete slab floors and roofs are all cast at ground level and lifted to the desired elevation by hydraulic jacks supported on the steel columns.

The first step in the construction of a building using the lift-slab method is the clearing and grading of the site area. Then foundations are prepared to support the steel columns which will carry the weight of the floors. The first slab to be constructed is the ground slab which is usually placed on the leveled or lifted ground. Before the concrete is poured all service pipes and ducts must be placed in position.

Formwork for the ground slab is placed in position and only edge shuttering is required as the slab is resting upon the prepared fill.

When the ground floor slab has hardened and the surface of the concrete has been cleaned, the work on the first floor slab begins. Collars are placed and the steel reinforcement is fixed in position. Any electrical conduits or other pipes should also be incorporated in the slab before the concrete is placed. According to the number of floors the process is repeated, each slab being separated by a layer of wax base material for it not to adhere, to the slab below it. After sufficient time for curing has elapsed and the required strength reached hydraulic jacks are attached to the heads of columns and specially threaded lifting rods are connected between the jacks and the collars cast into the concrete, and lifting operation begins. When a small clearance has been obtained the slab is leveled and lifting goes on.

At the desired height fillets are welded to the columns and the jacks released.

Notes to the Text

lift-slab method	способ возведения сооружения с подъемом готовых плит для укладки в перекрытиях
floor	междуэтажное перекрытие
reinforced concrete floor	железобетонное перекрытие
prestressed concrete floor	перекрытие из предварительно напряженного бетона
slab	плита
cast	литой, отлитый
reinforcement	укрепление, арматура
elevation	высота, возвышенность

hydraulic jack	гидравлический домкрат
to pour	лить, заливать
duct	воздуховод, труба, вентиляционный канал
formwork	опалубка для бетонных и железобетонных конструкций
to rest upon	опираться на
fill	насыпь, закладка
to harden	твердеть, затвердевать
collar	кольцо, муфта, втулка
conduit	изоляционная труба, кабелепровод
curing	заготовка
lifting rod	подъемная тяга
to weld	сваривать, приваривать
to adhere	липнуть, прилипать

EXERCISES

I. Answer the following questions:

1. What do buildings constructed by lift-slab method consist of? 2. What are the concrete slab floors and roofs lifted to the desired elevation by? 3. What is the first step in the construction of a building using lift-slab method? 4. What supports the steel columns? 5. What must be done before the concrete is poured? 6. When does the work on the first floor begin?

II. Read the following international words:

lift, construction, technique, material, method, columns, hydraulic, foundation, service, position, fix, electrical, incorporate, process, separate, base, wax, time, specially.

III. Translate the following sentences into Russian:

l. It is with the help of the designer that we reconstruct most of the buildings in our town. 2. It was in 1863 that the London’s tube (метрополитен) was built. 3. Tunnelling a tube through miles of clay, and sometimes sand and gravel is not an easy task, and it was James Henry Greathead who developed the method which was to make most of London’s

tube tunnels possible. 4. It was the building that was constructed by lift-slab method. 5. It was hydraulic jacks that lifted the concrete slab floors and roofs to the desired elevation. 6. It is the material that we can' use in this construction. 7. It was on April 26, 1755 that the opening of the Moscow University took place. 8. It was the Russian scientist Lodygin who invented the electric lamp. 9. It is the designer who has to calculate carefully how the various loads would be distributed and to decide which building materials are most suitable for carrying these loads. 10. It is concrete that has become an important construction material.

IV. Translate the following word combinations into Russian:

Sufficient time; lift-slab method; conventional materials; steel columns; electrical conduits; the surface of the concrete; wax base material; in a new way; reinforced concrete floors; ground level; desired elevation; clearing of the site area; the weight of the floors; prestressed concrete floors; service pipes; the heads of columns; lifting operation; to prepare the foundation; to support the columns; to carry the weight; to place on the lifted ground; to pour the concrete; to fix in position; to repeat the process; to reach the required strength; to incorporate electrical conduits; to release jacks.

V. Fill in the blanks with one of the words or word combinations given below:

1. The first step in the construction of a building using ... is clearing and grading of the site area. 2. Formwork for the ground slab is placed in ... 3. Any electrical ... or other pipes should be incorporated in the slab before the concrete is placed. 4. The lift-slab construction technique uses ... in a new way. 5. According to ... the process is repeated. 6. Buildings constructed by this method consist of concrete floors supported by ... . 7. Foundations are prepared to support the steel columns which will carry ... . 8. Collars are placed and the steel ... is fixed in position.

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position; weight of the floors; the lift-slab method; conduits; conventional materials; steel columns; the number of floors; reinforcement

VI. Read the text:

CANALS

Did you know that there are more miles of canals in Birmingham than in Venice? Great Britain has many canals. Nearly all of them are now used by people on holiday and not by heavy, commercial boats. Some are not used at all!

In the eighteenth century, when roads were very bad, it took two days to go from Bristol to London (115 miles); now, on the motorway, it takes two hours. But there was a very good alternative to bad roads - canals. In the nineteenth century, canals appeared everywhere in Britain. Many families actually lived on their boats on the canals. They earned their money by transporting things like flour or coal across Britain. Canal families had their own special fashions in clothes and art. People today are only just beginning to discover the fascinating world of canals which is so different from anything else.

England is not a flat country; tunnels, bridges, aqueducts and locks are necessary so that canals can go over and under the hills.

VII. Find the correct variant:

1. There are more miles of canals in ... than in ... .
   a. Bristol b. London c. Venice d. Birmingham

2. It took ... days to go from Bristol to London.
   a. five b. seven c. three d. two

3. There was a very good alternative to bad roads - ... .
   a. bridges b. tunnels c. canals d. railways

UNIT 19

HOUSE BUILDUNG

Text: STEEL ROOF TRUSSES

A roof truss is a framework designed to support the roof covering over large rooms, thereby avoiding the use of interior columns. Different types of trusses are used in building construction. The form depends upon the character of the roof covering and the architecture of the structure.

When the nature of the support is such that the reactions are vertical under vertical loading, the framework is known as a simple truss. Where the reactions are inclined, even under vertical loading, the framework is known as an arch.

In general, a roof truss should consist preferably of a system of triangles. The component parts of a truss are as follows: the upper members (top chords) and the lower members (bottom chords). The interior compression members are known as struts, and the interior tension members are known as ties. The points of intersection of truss members are known as the joints or panel points, and the distance between adjacent chord joints is known as a panel. A sag tie is a member supporting a long horizontal member which would otherwise deflect excessively under its own weight.

Roof trusses provide adequate support for a roof and for the loads that may act upon the roof.

A roof truss is generally more economical than a rolled beam or plate girder for spans longer than 30 ft. and for snow loads that exceed 25 lb. per sq. ft. of horizontal area. Roof trusses are frequently used in preference to beams or girders when head room is required for ventilation or when overhead lighting is desired.

Notes to the Text

roof truss	стропильная ферма, перекрытие
framework	каркас, конструкция
roof	крыша, покрытие, навес
interior columns	внутренние колонны
simple truss	балочная ферма; безраспорная ферма
reaction	противодействие, взаимодействие

incline	уклон, наклон
arch	арка, свод
triangle	треугольник
chord	пояс составной балки (фермы); хорда
top	вершина, верхняя часть
bottom	дно, основание
strut	стойка, распорка
tie	соединительная тяга, раскос, затяжка
joint	соединение; шов
panel	панель, стена
adjacent	смежный, соседний
sag	прогиб
to deflect	прогибаться
rolled	листовой
girder	балка, перекладина
span	расстояние между опорами (арки, свода)
show load	снеговая нагрузка
ft (foot, *pl*. feet)	фут (30,4 см)
lb (libra, pound)	фунт (453,6 г)

EXERCISES

I. Answer the following questions:

1. What is a roof truss? 2. What does the form of a roof truss depend upon? 3. What types of trusses are used in building construction? 4. What are the component parts of a truss? 5. Do roof trusses provide support only for a roof? 6. What is more economical: a roof truss, a rolled beam or a plate girder?

II. Fill in the blanks with the following prepositions: in, upon, to, of, for:

1. Different types ... trusses are used ... building construction. 2. The form depends ... the character ... the roof covering and the architecture ... a structure. 3. Roof trusses are frequently used in preference ... beams. 4. Roof trusses provide support ... a roof and ... the loads. 5. In general, a roof truss should consist ... a system ... triangles.

III. Give Russian equivalents to the following words:

incline, load, lighting, ventilation, beam, framework, formwork, chord, area, span, girder, support, weight, panel, intersection, tie, top, bottom, arch, use, roof.

IV. Read and translate the text, find sentences in the Passive Voice:

House-building is the process which normally starts with a planning stage in which plans are prepared by an architect and approved by the client and any regulatory authority. Then the site is cleared, foundations are laid and trenches for connection to services such as sewerage, water and electricity are established. If the house is wooden-framed then a framework is constructed which will support the boards, siding and roof. If the house is of brick construction, then courses of bricks are laid to construct the walls. Floors, beams and internal walls are constructed as the building develops, with plumbing and wiring for water and electricity being installed as appropriate. Once the main structure is complete then internal fitting out with lights and other fitments is done and the house is decorated and furnished with furniture, cupboards, carpets, curtains and other fittings.

V. Read the text:

TUNNELS

Hills are major obstacles for men building a canal. When they were first building them, the engineer decided to build tunnels to take the canals under the hills. Before there were engines on boats, horses pulled them along with ropes. The horses walked along the banks. In the tunnels there was no space for the horses to walk. One man walked with the horses over the hill, and the others went through the tunnel. How did the boats move without an engine and without a horse? They used leggers. A legger was a man who lay on his back in the boat, touched the roof of the tunnel with his feet and pushed the boat along. It took three or four hours to push the boat through the Huddersfield tunnel which is three miles long. The tunnels were very dark and wet. Even today, it’s a good idea to take an umbrella into the tunnel because so much water drips from the roof.

VI. Find the correct variant:

1. Hills are major obstacles for men building a ... .
a. bridge b. road c. tunnel d. canal

2. The engineer decided to build tunnels to take the canals under the ... .
a. mountains b. railroads c. hills d. buildings

3. In the tunnels there was no ... for the horses to walk.
a. room b. air c. place d. space

UNIT 20

HOUSE BUILDING

Text: AIRCONDITIONING IN BUILDING

Air conditioning is not a luxury. It is a fundamental necessity of new buildings, such as offices, public assembly, department stores, apartment houses, hospitals, hotels, or other continually occupied space. The demand for air conditioning increases. Houses of future are inconceivable without it.

Unfortunately, the techniques of air conditioning have not kept pace with this increasing demand. Besides the introduction of clean, properly conditioned air and the evacuation of it after it is partially vitiated, many other things are involved in the conditioning of large buildings which are to be solved.

Prior to practice large-scale air conditioning, engineers, architects, and construction men are to solve such problems as space for central apparatus, space for cooling towers, loss of usable area to care for networks of conduits carrying the conditioned fluid, cost of the original installation, cost of operation and maintenance, and others. But principally the air conditioning system must satisfy the greatest number of individual ideas of comfort among the occupants of the building.

Notes to the Text

necessity — необходимый

to occupy	занимать
introduction	введение
to involve	включать в себя, содержать
installation	оборудование
to maintain	поддерживать, сохранять
maintenance	содержание, уход

EXERCISES

I. Answer the following questions:

1. Air conditioning is a luxury, isn’t it? 2. What things are involved in the conditioning of large buildings? 3. What problems are the engineers, architects and construction men to solve?

II. Form the nouns from the following verbs:

to build	to cool
to occupy	to use
to increase	to install
to introduce	to operate
to evacuate	to maintain
to construct	to react
to object	to penetrate
to estimate	to suggest

III. Make the following sentences interrogative and negative:

1. All the necessary equipment is housed in a special building. 2. The ventilating equipment will be installed in the technical chamber. 3. Many things are involved in the conditioning of large buildings. 4. Glass is employed by people for many purposes. 5. Iron is widely used as a building material.

IV. Translate the following word combinations into Russian:

fundamental necessity; apartment houses; air conditioning; public assembly; department stores; occupied space; increasing demand; central apparatus; cooling towers; loss of usable area; original installation; to solve

problems; to satisfy the demands; to comfort; to increase the demands; to occupy the space; to evacuate air; to maintain prices; to install a heating system; to install a lighting system; to install an air conditioning system.

V. Read the text. Fill in the blanks with the verb *to be* in an appropriate form:

THE HOUSE I LIVE IN

The house I live in ... a block of flats. It ... in the suburb of the city. This ... a three-storey brick building. In our house there ... several flats on each storey. There ... a large garden all round it. In front of the house there ... a lawn and some beds of beautiful flowers. Ours ... a comfortable three-room flat on the second floor.

Here ... our sitting room. It ... quite a big room with two windows facing the streets. And this ... a study. It ... a small and light room with no pictures on its walls. On the left near the door there ... two book-cases full of books. As for our bedroom, it ... a very comfortable room. There ... all modern conveniences in our flat.

VI. Translate the following sentences into Russian:

1. Кондиционирование воздуха является основной необходимостью при строительстве новых зданий. 2. Требования к системе кондиционирования воздуха постоянно повышаются. 3. Технология кондиционирования воздуха отстает от возрастающих требований. 4. Инженеры, архитекторы и конструкторы должны решать такие проблемы, как местонахождение основного прибора, местонахождение башенного охладителя, стоимость установки, стоимость обслуживания и другие. 5. Система кондиционирования воздуха должна соответствовать требованиям комфорта.

VII. Translate the following sentences paying attention to the adjectives and adverbs:

1. The shop is large. It is as large as 165 square metres. The shop is largely experimental. The larger the shop the more air it has and therefore the better conditions are provided for work. 2. The construction is high. It is as high as 320 metres. Their method is highly interesting. The higher is

the mercury (ртутный) column, the higher is the pressure. 3. The designer worked hard for several months because he was given quite a new task. That was a hard job. He could hardly complete his research in time.

UNIT 21

Text: STEEL- MILL BUILDINGS

The best modern practice inclines towards single floor shops with as few dividing walls and partitions as possible. The advantage of this type over multiple-storey buildings are: the light is better, ventilation is better, buildings are more easily heated, foundations for machinery are cheaper, floors are cheaper, the building can be extended in any direction, the cost of construction is less, and there is less danger from damage due to fire.

The walls of shops and factories are made of: 1) brick, stone or concrete; 2) brick, hollow tile or concrete curtain walls between steel columns; 3) curtain walls made of plaster on expanded metal; 4) concrete slabs fastened to the steel frame; 5) corrugated steel fastened to the steel frame.

The roof is commonly supported by steel trusses and framework. The roofing may be slate, tile tar and gravel or other composition, tin or sheet steel laid on board sheathing or on concrete or gypsum slabs, tile or slate supported directly on the purlins, or corrugated steel supported on board sheathing or directly on the purlins. Where the slope of the roof is flat, a first-grade tar-and-gravel roof is preferred to tin. A steep-slope slate or tile is usually preferred to tin. Corrugated steel roofing is much used on boiler houses, forge shops and similar structures.

Floors in boiler houses, forge shops and in similar structures are generally made of brick on a gravel or concrete foundation while in buildings where men have to work at machines, a wooden floor on a foundation of cinders, gravel, or tar concrete is preferred. Concrete or cement floors are used in many cases with good results, but they are not satisfactory where men have to stand at machines. Wooden racks on cement floors somewhat remove this objection. Care should be taken to obtain a sufficient amount of light in buildings where men are at work.

It is now common practice to make a great part of the roof and side walls of a transparent material. Heating in large buildings is generally done by the hot blast system.

Notes to the Text

dividing walls	внутренние несущие стены
partition	перегородка
advantage over	преимущество над
multiple-storey building	многоэтажное здание
hollow tile	полые плиты
concrete curtain walls	бетонные ненесущие стены
curtain walls made of plaster on expanded metal	ненесущие стены, сделанные из штукатурки на цельнорешетчатом металле
concrete slabs	бетонные плиты
to fasten (to)	прикреплять (к)
corrugated steel	волнистая (рифленая) сталь
roofing	кровля
slate	шифер, черепица
tile	черепица, плитка
tar	деготь, смола, гудрон
gravel	гравий
tin	олово
sheet steel	листовое железо
board, sheathing	дощатая обшивка
gypsum	гипс
purlin	прогон, обрешетка
slope	склон, наклон
steep-slope slate	шифер крутого склона
boiler house	котельное помещение
forge shop	кузнечный цех, кузница
gravel or concrete foundation	гравийный или бетонный фундамент
cinder	топочный шлак, окалина
hot blast system	система обогревания дутьем горячего воздуха

EXERCISES

I. Answer the following questions:

1. What is the best modern practice of shop building? 2. What are the advantages of single floor shops over multiple-storey buildings? 3. What are the walls of shops made of? 4. How is the roof commonly supported? 5. Where is corrugated steel roofing much used? 6. What are floors generally made of? 7. On what foundation are floors generally made? 8. What floors are preferred in buildings where men have to work at machines? 9. Is a sufficient amount of light very important in buildings where men are at work? 10. What is the common practice of supplying much light in such buildings?

II. Pick out from the text all the words denoting building materials; translate them into Russian.

III. Outline the general principles of designing steel mill buildings.

IV. Give all possible translations of the verbs in the Passive in the following sentences. Use the models below:

New methods of house building are applied everywhere – применяются are applied – применяют
New methods of house building were applied some years ago - применялись were applied - были применены, применяли
New methods of house building will be applied - будут применяться will be applied - применят

1. Small houses are generally occupied by one family. 2. Most houses are made of bricks and prefabricated concrete blocks. 3. The building can be extended in any direction. 4. The roof is commonly supported by steel trusses. 5. A first grade tar-and-gravel roof is preferred to tin. 6. Steel roofing is much used on boiler houses. 7. Floors in boiler houses are generally made of brick. 8. Concrete or cement floors are used

in many cases with good results. 9. Heating in large buildings is generally done by the hot blast system.

V. Translate the sentences into Russian paying attention to the words "different", "the same":

1. These buildings are of different sizes but the same colour. 2. These tables are of different shapes but the same price. 3. They live in different houses but go home by the same road.

UNIT 22

Text: A HOUSE OF GLASS AND PLASTICS

The first house of glass and plastics in our country was built in Leningrad. It should be said that the house is looked upon as an experimental construction and therefore nobody lives in it. Everything in this house -from the walls and the ceiling to the last screw - is made of plastics and glass. The building is given quite a modern appearance. Many enterprises were invited to discuss and take part in the construction as it was paid great attention to. The technology was worked out by engineers and architects of the Leningrad branch of the USSR Architecture and Civil Construction Academy.

The building itself is composed of eight plastic rings which form the walls and the ceiling. The house with all its equipment and furniture weighs no more than four and a half tons. The house is built at a two-metre height above the ground. It is mounted on a technical chamber, which houses the heating, ventilating and electric equipment and is made of glass blocks and mounted on a ferro-concrete foundation.

The outer walls are covered with a light coloured film of plastics. The outer and inner walls are as thick as 4 millimetres. The vacuum between them is filled with an excellent thermal and sound-proof material. The strength of the structure is influenced by many factors: design, materials, etc. The synthetic materials of which the house is made can be relied upon because of their high quality.

The whole structure weighs little because the entire thickness of the walls is 10 centimetres. The entire useful floor space of this one-flat house is as large as 40 square metres.

The front wall of the house is made of non-breakable organic glass, which easily lets through the ultra-violet rays, so that one can take a sun-bath right in the house. If the weather is bad, one has only to switch on the lights in the bathroom and "mountain rays" from special lamps will fall on him.

Much attention was also paid to the interior of the house. With the help of synthetic draperies the room can be easily converted into a three-room flat. The room temperature is always maintained at about 19 degrees C with the help of air stoves which are installed in the technical chamber.

No doubt that this experiment will be followed by others, for our designers look for the most convenient models of small houses.

Notes to the Text

cei1ing	потолок
appearance	внешний вид
enterprise	предприятие
to take part (in) (took, taken)	принимать участие (в)
to pay attention(to) (paid, paid)	уделять внимание
to compose	составлять
to mount	устанавливать
outer walls	внешние стены
inner walls	внутренние стены
film	пластик
to let through (let, let)	пропускать
convenient	удобный

EXERCISES

I. Answer the following questions:

1. Where was the first house of glass and plastics built? 2. By whom was its technology worked out? 3. What is the building composed of? 4. How much does the house weigh? 5. What is it mounted on? 6. Where is the heating, ventilating and electric equipment installed? 7. How large is the entire useful floor space of this house? 8. What is the front wall of the house made of? 9. What is the normal temperature in the house? 10. Is this an experimental or an ordinary house? 11. Do any people live in it?

II. Form verbs from the following nouns. Translate them into Russian:

building, understanding, improvement, equipment, foundation, installation, existence, difference, appearance, designer, builder, composition, occupation, introduction, maintenance, elevation, penetration, suggestion.

III. Translate the sentences paying attention to the meanings of the verbs depending on postposition:

to work at (on) a design (model, etc.)	работать над проектом (моделью и т.д.)
to work out a plan (theory, etc.)	разрабатывать план (теорию и т.д.)
to switch on the light (motor, etc.)	включить свет (мотор и т.д.)
to switch off	выключить

1. The design of the house was worked out by Leningrad engineers and architects. 2. Our laboratory will continue to work at the problems of automatic regulation of productive processes. 3. The apparatus is switched on and off automatically.

IV. Choose the verb from the right column and use it in Indefinite Passive:

1. It should be noted that the first house of glass and plastics (был разработан) by engineers of several institutes.	to house
2. Its construction (было уделено) great attention to.	to make
3. Everything in it (сделано) of glass and plastics.	to fill
4. The vacuum between inner and outer walls (заполняется) with excellent thermal and soundproof materials.	to pay
5. All the equipment (помешается) in the technical chamber.	to work out
6. It can be said that soon plastics (будут использоваться) in all branches of our industry.	to use

V. Translate the sentences paying attention to the subject:

a) 1. After seven years of university study and laboratory work the young scientist was invited to take part in the research, he was given a few assistant to help him. 2. The assistants were told to prepare everything for the analysis of a new compound. 3. The house was built by a new method. 4. He was given a new job to do.

b) 1. It must be said that the house is looked upon as an experimental one. 2. It is not lived in. 3. It is said that the latest discovery of our physicists was commented upon in various magazines. 4. It is true to say that Einstein's special theory of relativity is often referred to by a great number of researches.

VI. Translate the sentences paying attention to the word as (1) как, в качестве; 2) в то время как; 3) по мере того как; 4) так как; 5) столько-сколько; 6) так же, как):

1. As the time passed, stone tools were replaced by metal ones. 2. There are two kinds of transformations which are known as physical and chemical changes. 3. The synthetic materials of which the house is made can be relied upon as they are of high quality. 4. Every second the sun sends into space as much energy as mankind consumed during the whole period of its existence. 5. The outer and inner walls of the house are as thick as 4 centimetres. 6. At present plastics as well as metals are widely used in various branches of industry.

VII. Analyse the following sentences:

1. It should be noted that this is the only house of glass and plastics in Leningrad. 2. We know who took part in the design and construction of this unusual house. 3. We don't know, however, what the designers think about the construction of such houses on a large scale. 4. We see how much attention was paid to the ventilating, heating and electric equipment in the house. 5. We must ask the engineer if (whether) we shall be allowed to see the interior of the house.

UNIT 23

Text: MANUFACTURE OF PORTLAND CEMENT (Part I)

The raw materials for making Portland cement are generally a mixture of calcareous and argillaceous materials in such proportions as to provide proper chemical compositions for sintering or burning. It is essential that the chemical composition of the mixture be confined within narrow limits, as small variations in the ratios of principal components of the mixture may be sufficient to alter the properties of the cement.

Economic considerations, as well as the nature of the resources, will of course dictate the types of raw materials that can be utilized in Portland cement manufacture. The calcareous materials presently in use are limestone, marl, cement rock, marine shells, and alkali wastes.

The argillaceous materials are clay, shale, slate, blast-furnace-slag, and ashes.

Two processes of manufacture are employed, the dry process and the wet process. In the dry process the materials are crushed, dried, and then ground in ball mills to a powder which is burnt in its dry condition. In the wet process the materials are first crushed and then ground to form slurry in the wash mill. After passing through the wash mills and the slurry silos, the slurry passes to the slurry tanks. Samples of the slurry are taken from these tanks from time to tine for testing, and any correction in the chemical composition is made by changing the proportions of the calcareous and argillaceous constituent. The slurry is next pumped to the kiln.

Notes to the Text

calcareous	известковый
argillaceous	глинистый
sintering	спекание
burning	горение, прокаливание
to confine	ограничивать
to alter	изменять
raw materials	сырьевые материалы, сырье
limestone	каменная известь
marl	мергель, известковая глина; нечистый известняк
cement rock	цементный камень

marine shell	морские ракушки
alkali wastes	щелочные отходы
shale	сланец
slate	шиферный сланец
blast-furnace-slag	доменный шлак
ash	зола
ball mills	шаровая мельница
slurry	жидкая глина, цементное тесто
wash mill	промывная мельница
slurry silos	бункер (для хранения цемента)
slurry tanks	шлам резервуары (шламовый отстойник)
kiln	обжигательная печь

EXERCISES

I. Answer the following questions:

1. What are raw materials for making Portland cement? 2. May the chemical composition of the mixture alter the properties of the cement? 3. What will dictate the types of raw materials utilized in Portland cement manufacture? 4. What calcareous materials do you know? 5. What argillaceous materials do you know? 6. What processes of Portland cement manufacture are employed? 7. What is the difference between these two processes?

II. Translate the following word combinations:

to pump to the kiln; to change the proportions; to take for testing; to pass through the wash mills; to form a slurry; to crush the materials; to grind to a powder; to provide proper chemical compositions; raw materials; a mixture of different materials; special proportions; narrow limits; small variations; principal components; calcareous materials; the properties of the cement; argillaceous materials; the nature of the resources; marine shells, alkali wastes; blast-furnace-slag; slurry silos; slurry tanks.

III. Fill in the blanks with the words given below:

1. Samples of the slurry are taken from these tanks from time to time for ... 2. After passing through the wash mills and the slurry silos, the slurry passes to the slurry ... . 3. Any correction in the chemical composition is made by changing the ... of the calcareous and argillaceous constituent. 4. In the dry process the materials are crushed, dried, and then ground in ball mills to a ... . 5. In the wet process the materials are first crushed and then ground to form a ... in the wash mill. 6. Two processes of Portland ... manufacture are employed.

_____

proportions; cement; testing; powder; slurry; tanks

IV. Translate the following sentences into English:

l. Для производства портландцемента нам нужны известковые и глинистые материалы. 2. Эти материалы смешиваются в определенных пропорциях. 3. При изменении пропорций изменяются свойства цемента. 4. Известковые материалы – это каменная известь, мергель, цементный камень, морские ракушки и др. 5. Глинистые материалы – это глина, сланец, шиферный сланец, доменный шлак, зола. 6. Применяют два способа для получения цемента: сухой и мокрый.

V. Describe two processes of manufacturing Portland cement.

UNIT 24

Text: MANUFACTURE OF PORTLAND CEMENT (Part II)

Pulverized coal, oil, or natural gas is used as fuel and is injected into the kiln at the opposite end to that at which the slurry enters. Thus, the slurry enters the kiln at the cooler end and by the rotation of the kiln in conjunction with its slope, passes down and gradually increases in temperature until it clinkers. The cement clinker then passes through clinker coolers. Having been cooled sufficiently, the clinker is ground to the required degree of fineness in ball mills. While grinding, a "retarder" is incorporated, gypsum being the material generally used. An addition of 2

or 3 per cent is usually necessary to slow down sufficiently the chemical action at the time of setting.

From the mills the cement is conveyed or blown to storage silos, from which the cement is discharged as required, either being fed to a packing plant or direct to bulk-cement lorries. The packing plant automatically fills the paper bags nowadays commonly used. The nominal net weight of cement in each bag is 112 lb., but a variation of a few pounds frequently occurs.

Other ancillary plant at the cement works includes dust extracting equipment, air compressors, and the power generators.

The chemistry of Portland cement is very complicated. Besides the chemical composition, the other dominant factor affecting cement properties is the fineness of grinding. Finer grinding increases the speed with which the various constituents react with water, but does not alter their inherent properties. The tendency during recent years has been to grind cements to greater fineness in order to produce high strengths at early ages. Rapid hardening Portland cement is an example of this development.

Fineness of grinding is of some importance in relation to the workability of concrete mixes.

Shrinkage cracking is related to the rate of development of strength of concrete, and in general, cements which gain strength rapidly are more prone to cracking.

Notes to the Text

pulverized coal	измельченный уголь
to inject	распылять
slope	относ, уклон
clinker	котельный шлак
clinker cooler	холодильник
fineness	тонкость
retarder	замедлитель
setting	схватывание (цемента)
to discharge	разгружать
to feed (fed, fed)	подавать
packing plant	упаковочная машина (установка)
bulk-cement lorry	грузовик для перевозки цемента
dust-extracting equipment	пылеулавливающее оборудование

grinding	размол, помол
workability	удобообрабатываемость
shrinkage cracking	усадочная трещина

EXERCISES

I. Answer the following questions:

1. What is used as fuel? 2. Does the slurry enter the kiln at the cooler end? 3. Where is the cement conveyed from the mills? 4. What is the other dominant factor affecting cement properties? 5. What increases the speed with which the constituents react with water? 6. Is the chemistry of Portland cement complicated? 7. Does finer grinding alter the properties of the constituents?

II. Complete the sentences:

1. Pulverized coal, oil, or natural gas ...	... at the cooler end.
2. Fuel is injected into the kiln ...	... down the chemical action at the time of setting.
3. Slurry enters the kiln ...	... dust-extracting equipment, air compressors, and the power generators.
4. The cement clinker then passes ...	… is used as fuel.
5. Having been cooled, the clinker is ground ...	... through clinker coolers.
6. An addition of 2 or 3 per cent is usually necessary to slow ...	... at the opposite end to that at which the slurry enters.
7. The packing plant automatically fills …	... the paper bags nowadays commonly used.
8. Other ancillary plant at the cement works includes …	... to the required degree of fineness in ball mills.

III. Make the nouns by adding -ing. Translate into Russian:

to sinter - sintering	to grind
to burn	to set
to pass	to pack
to test	to harden
to change	to crack

to blast to design

IV. Fill in the blanks with the words given below:

1. Oil, natural gas or pulverized coal is used as ... . 2. The clinker is ground to the required degree of ... in ball mills. 3. An addition of 2 or 3 per cent is necessary to slow down sufficiently the chemical action at the time of ... . 4. Finer ... increases the speed with which the various constituents react with water. 5. Rapid ... Portland cement is an example of this development. 6. Fineness of grinding is of some importance in relation to the workability of ... mixes.

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hardening; setting; fuel; fineness; grinding; concrete.

V. Read the text without using a dictionary:

CLASSES OF CEMENT

There are various classes of cement: rapid-hardening cement, extra-rapid-hardening Portland cement, low-heat cement, sulphate-resisting cement, high alumina cement, Portland blast furnace cement, pozzolanic cement, coloured cements.

Rapid-hardening cement has a high early strength. Extra rapid-hardening Portland cement is rapid-hardening cement.

Low-heat cement is slow in hardening and produces less heat than the other cements.

Sulphate-resisting cement has an increased resistance to sulphate attack.

High alumina cement has a very rapid development in strength.

Portland blast furnace cement is similar in properties to normal Portland cement, compared with which it has certain advantages in respect of resistance to chemical attack and often a somewhat lower heat evolution, and a disadvantage in that its speed of hardening falls off more rapidly as the temperature decreases.

Pozzolanic cements are produced by grinding together a mixture of 80-60 per cent Portland cement and 20-40 per cent of pozzolana, which may be a naturally active material, such as volcanic ash, or pumice, or an artificial product such as burnt clay or shall.

Coloured cements consist of ordinary or white Portland cement to which suitable inert pigments are added.

Notes to the Text

rapid-hardening cement	быстро твердеющий цемент
extra-rapid-hardening Portland cement	очень быстро твердеюший портландцемент
low-heat cement	низкотермальный цемент
sulphate-resisting cement	сульфатостойкий цемент
high alumina cement	высокоглиноземистый (высокоалюминатный) цемент
Portland blast furnace cement	шлакопортланд цемент
pozzolanic cement	пуццолановый цемент
coloured cement	цветной цемент
development in strength	нарастание прочности
heat evolution	тепловыделение
volcanic ash	вулканическая зола
pumice	пемза

VI. Answer the following questions:

1. What classes of cement do you know?
2. What is the difference between Portland cement and Portland blast furnace cement?

GRAMMAR REVIEW

§1. Английский алфавит

A a [ei]	**J j [ʤei]**	**S s [es]**
B b [bi:]	**K k [kei]**	**T t [ti:]**
C c [si:]	**L l [el]**	**U u [ju:]**
D d [di:]	**M m [em]**	**V v [vi:]**
E e [i:]	**N n [en]**	**W w [’dʌblju:]**
F f [ef]	**O o [əu]**	**X x [eks]**
G g [ʤi:]	**P p [pi:]**	**Y y [wai]**
H h [eiʧ]	**Q q [kju:]**	**Z z [zed]**
I i [ai]	**R r [a:(r)]**	

§2. Порядок слов в английском предложении

Русский язык является языком с развитой системой окончаний, и поэтому порядок слов в нем не имеет особого значения. Функции слова и его отношения с другими словами в предложении определяются окончанием слова, например:

Вчера охотник убил медведя. *Или:* Медведя убил вчера охотник.

От изменения порядка слов смысл предложения не изменился. В английском языке почти полностью разрушена система падежных окончаний, и функции слова и его отношения с другими словами определяются его местом в предложении, например:

Yesterday the hunter killed a bear.
Или: Yesterday a bear killed the hunter.

Смысл второго предложения противоположен смыслу первого. Чаще всего от изменения порядка слов предложение просто теряет смысл, становится набором слов. Следовательно, в английском языке твердый и строгий порядок слов.

Основная схема порядка слов в английском предложении такова:

Обстоя-тельство	Подлежащее (группа под-лежащего)	Сказуемое (группа ска-зуемого)	Дополнение	Обстоя-тельство
	I	read	a book	yesterday.

Под термином «группа подлежащего» следует понимать подлежащее с определяющими его словами, под термином «группа сказуемого» - сказуемое с определяющими его словами, например:

Some workers of our plant | have just come | from Novosibirsk.

Косвенное беспредложное дополнение обычно предшествует прямому:

Tom gave **me** a book yesterday. (Равнозначно: Tom gave a book **to me** yesterday.)

Определение обычно употребляется перед определяемым словом.

My friend's brother is a **good** engineer.

Если определение, выраженное прилагательным, относится к местоимениям, производным от **some, any, no,** то прилагательное ставится после определяемого члена предложения.

They have done everything **possible** to save his life.	Они сделали все возможное, чтобы спасти ему жизнь.

Одно причастие (Participle II) без оборота также чаще употребляется после определяемого слова:

The method **used** depended on the materials **supplied**.	Применяемый метод зависел от поставленных материалов.

Обстоятельства неопределенного времени (often – часто, ever – когда-нибудь, never – никогда, always – всегда, seldom – редко) обычно ставятся между подлежащим и сказуемым или перед основным глаголом:

We **often** meet him in the street. I have **never** been to Paris.

Обстоятельства определенного времени стоят в самом конце или в начале предложения:

I saw my friend **yesterday**. **Yesterday** I saw my friend.

Примечание: Вышеуказанная схема применима к повествовательному предложению, в котором нет смыслового выделения отдельных членов предложения.

§3. Времена глагола в английском языке

В русском языке глагол в роли сказуемого обозначает не только действие или состояние, но передает и видовые оттенки. Вид имеет морфологическую характеристику, например: Я **прочитал** английскую книгу вчера вечером. Я **читал** английскую книгу вчера вечером.

В английском языке видовые значения выражаются четырьмя группами времен, каждая из которых имеет настоящее, прошедшее и будущее время.

1. Времена группы Indefinite (неопределенные) выражают действия безотносительно к их продолжительности или завершенности, например:

They **go** to school. (Present Indefinite)	Они ходят в школу.
They went to school last year. (Past Indefinite)	Они ходили в школу в прошлом году.
They **will go** to school next year. (Future Indefinite)	Они будут ходить в школу в будущем году.

2. Времена группы Continuous (длительные) указывают на длительность действия в настоящем, прошедшем или будущем и употребляются в тех случаях, когда речь идет о конкретном действии, время совершения которого определяется достаточно точно с помощью обстоятельства времени или по смыслу предложения. Например:

I **am going** to the Institute. (Present Continuous)	Я иду в институт. (*в данный момент*)
I **was going** to the Institute, when I met you. (Past Continuous)	Я шел в институт, когда встретил вас.
I **shall be going** to the Institute at 8 o'clock in the morning. (Future Continuous)	Я буду идти в институт в 8 часов утра.

3. Времена группы Perfect (законченные) указывают на законченность действия к определенному моменту настоящего, прошедшего или будущего времени. Например:

I **have** just **come** to the Institute. (Present Perfect)	Я только что пришел в институт.
Yesterday I **had come** to the Institute by 8 o'clock. (Past Perfect)	Вчера я пришел в институт к 8 часам.
Tomorrow I **shall have come** to the Institute by 8 o'clock. (Future Perfect)	Завтра я приду в институт к 8 часам.

4. Времена группы Perfect Continuous употребляются для выражения действия, которое продолжается, продолжалось или будет продолжаться в течение определенного отрезка времени до какого-то момента в настоящем, прошедшем или будущем.

He **has been working** on his book for two years. (Present Perfect Continuous)	Он уже работает над своей книгой в течение двух лет.
He **had been working** on his book for two years before you came to the Institute. (Past Perfect Continuous)	Он уже работал над своей книгой два года, до того как вы пришли в наш институт.
He **will have been working** on his book for 5 years when you return to the Institute. (Future Perfect Continuous)	Он проработает над книгой 5 лет к тому времени, когда вы вернетесь в институт.

§4. Времена группы Indefinite

1. The Present Indefinite образуется из инфинитива глагола без частицы **to.**

Форма инфинитива употребляется для всех лиц, кроме 3-го лица единственного числа. В третьем лице единственного числа к форме инфинитива прибавляется окончание **-s** или **-es** (если основа оканчивается на шипящий или свистящий звук или на гласную **o**).

I **speak** English. He, She, It **speaks** English.	We, You, They **speak** English.

Окончание **-s (-es)** произносится:
[s] – после глухих согласных (he speaks);
[z] – после звонких согласных и гласных (he reads, he stays);
[iz] – после **s, ss, ch, sh, dge** (he stresses, it crushes).

В глаголах, которые оканчиваются на **-y** после гласной (to study, to fly, to cry), в третьем лице единственного числа буква **y** меняется на **i**, затем прибавляется **-es** (to study – he studies).

Вопросительная и отрицательная форма Present Indefinite образуется с помощью вспомогательного глагола **to do** (**does** для третьего лица).

We **play** chess. We **do not play** chess. **Do** we **play** chess? (Краткий ответ: Yes, we **do**. No, we **do not**.)	He **plays** chess. He **does not play** chess. **Does** he **play** chess? (Краткий ответ: Yes, he **does**. No, he **does not**.)

Формы глаголов **to be, to have** и **to do** в Present Indefinite следующие:
to be – I am; he (she, it) **is**; we (you, they) **are**
to have – I (you, we, they) **have**; he (she, it) **has**
to do – I (you, we, they) **do**; he (she, it) **does**

2. The Past Indefinite является второй основной формой глагола. Все английские глаголы подразделяются на стандартные и нестандартные по способу образования Past Indefinite (второй основной формы) и Participle II (третьей основной формы). Стандартные глаголы образуют вторую и третью формы с помощью суффикса **-ed.**

Infinitive	*Past Indefinite*	*Participle II*
to want	want**ed**	want**ed**

Суффикс **-ed** произносится:

[t] – после глухих согласных: she walked [wɔ:kt];

[d] – после гласных и звонких согласных: he played [pleɪd], he called [kɔ:ld];

[id] – после **t** и **d**: we decided [dɪ′saɪdɪd].

Table 1

Порядок слов в предложениях в Present Indefinite (Active)

Утвердительное предложение			We	work	at a new mine.
Отрицательное предложение			We	do not work	at a new mine.
Специальный вопрос к подлежащему			Who	works	at a new mine?
Общие вопросы		Do	you	work	at a new mine?
		Do	you	not work	at a new mine?
		Don’t	you	work	at a new mine?
Альтернативный вопрос		Do	you	work	at a new mine or at an old one?
Спец. вопросы: к сказуемому	What	do	you	do	at this mine?
к обст. места	Where	do	you	work?	
к определению	At what mine	do	you	work?	

В глаголах, которые оканчиваются на **-y** с предшествующей гласной, **y** меняется на **i**, а затем прибавляется суффикс **-ed**. Суффикс **-ied** произносится [ɪd], например: to study – we studied [ˈstʌdɪd].

Table 2

Порядок слов в предложениях с глаголами *to be, to have* **в Present Indefinite**

Утвердительное предложение		We	are	first-year students?
		Pete	has	an English book?
Отрицательное предложение		We	are not	first-year students.
		Pete	has not	an English book.
		Pete	has	no English book.
Спец. вопросы:		Who	are	first-year students?
к подлежащему		Who	has	an English book?
к определению		What students	are	we?
		What book	has	Pete?
Общий вопрос	Are	you		first-year students?
	Has	Pete		an English book?

Нестандартные глаголы образуют вторую и третью формы не по общему правилу. Три формы нестандартных глаголов необходимо просто заучивать.

Утвердительная форма Past Indefinite одинакова для всех лиц.

Вопросительная и отрицательная формы Past Indefinite образуются так же, как и Present Indefinite, при помощи вспомогательного глагола **to do**, который в Past Indefinite имеет форму **did**. Смысловой глагол сохраняет форму инфинитива без частицы **to** для всех лиц.

My friend **worked** at a plant.
My friend **did not work** at a plant.
Did my friend **work** at a plant? (Краткий ответ: Yes, hi **did**. No, he **didn’t**.)

Модальные глаголы, глаголы **to have** (за исключением некоторых словосочетаний) и **to be** образуют вопросительную и отрицательную формы в Present и Past Indefinite без вспомогательного глагола **to do**.

He **is (was)** a student. She **is (was) not** a student.
Is (was) she a student? (Краткий ответ: Yes, she **is (was)**. No, she **is (was) not**.)
I **have (had)** a book. I **have (had) not** a book.

Table 3

Порядок слов в предложениях с глаголом в Past Indefinite (Active)

Утвердительное предложение			He	worked	at a mine	in 2009.
Спец. вопрос к подлежащему			Who	worked	at a mine	in 2009?
Отрицательное предложение			He	did not work	at a mine	in 2009.
Спец. вопрос к подлежащему (отриц. форма)			Who	did not work	at a mine	in 2009?
Общие вопросы:		Did	he	work	at a mine	in 2009?
		Didn't	he	work	at a mine	in 2009?
Спец. вопросы: к обст. места	Where	did	he	work		in 2009?
к обст. времени	When	did	he	work	at a mine?	
к сказуемому	What	did	he	do	at a mine	in 2009?

Have (had) you a book? (Краткий ответ: Yes, I **have (had)**. No, I **have (had) not**.)
He **must** work. She **must not** work.
Must she work? (Краткий ответ: Yes, she **must**. No, she **must not**.)

Формы глаголов **to be, to have** и **to do** в Past Indefinite следующие:
to be – was (ед. число), **were** (мн. число); **to have – had**; **to do – did.**

3. The Future Indefinite образуется из вспомогательного глагола **shall** (для первого лица единственного и множественного числа – I,

we) или **will** (для всех остальных лиц) и инфинитива спрягаемого глагола без частицы **to**.

We **shall go** to Moscow. They **will go** to Moscow.

При образовании вопросительной формы глагол shall или will выносится на первое место.

Table 4

Порядок слов в предложениях с глаголом в Future Indefinite (Active)

		I	shall	work	at a mine	next year.
		I	shall not	work	at a mine	next year.
		Who	will	work	at a mine	next year?
	Shall	I		work	at a mine	next year?
	Shan't	I		work	at a mine	next year?
What	shall	I		do	at a mine	next year?
Where	shall	I		work		next year?
When	shall	I		work	at a mine?	

Shall we work at a plant? Краткий ответ: Yes, we shall. No, we shall not.
Will he work at a plant? Yes, he will. No, he will not.

В отрицательной форме частица not ставится между вспомогательным и смысловым глаголом.

I shall **not** go to the cinema today.

Глаголы **to be, to have, to do** образуют Future Indefinite по общему правилу:

He **will be** at the Institute at 8 o'clock.

Примечание. В условных придаточных предложениях с союзом **if** и в обстоятельственных предложениях времени с союзом **after, as soon as, before, till, until, when, while** вместо Future

Indefinite, которое требуется по смыслу, употребляется Present Indefinite: If you **tell** him about it, he will help you. I shall not do anything until my friend **comes**.

§5. Времена группы Continuous

Все три времени группы Continuous образуются из вспомогательного глагола **to be** в соответствующем времени группы Indefinite + Participle I смыслового глагола.

Table 5

Порядок слов в предложениях с глаголом в Present Continuous (Active)

Утвердительное предложение			He	is	reading	an English book	now.
Отрицательное предложение			He	is not (isn't)	reading	an English book	now.
Спец. вопрос к подлежащему			Who	is (not)	reading	an English book	now?
Общий вопрос		Is	he	(not)	reading	an English book	now?
Спец. вопросы	What	is	he		doing		now?
	Where	is	he		reading	an English book?	
	When	is	he		reading	an English book?	
	What	is	he		reading?		
	What book	is	he		reading?		

При образовании вопросительной формы вспомогательный глагол ставится перед подлежащим. В отрицательной форме отрицание **not** ставится между вспомогательным и смысловым глаголом.

1. The Present Continuous выражает действие, которое происходит в данный момент. Обстоятельства времени (now, at the present moment, at this moment и т.п.) употребляются в начале или в конце предложения.

We **are speaking** English now. We **are not speaking** English now.

Table 6

Порядок слов в предложениях с глаголом в Past Continuous (Active)

		He	was	reading	an English book	at 5.
		He	was not (wasn't)	reading	an English book	at 5.
		Who	was (not)	reading	an English book	at 5?
	Was	he	(not)	reading	an English book	at 5?
What	was	he		doing		at 5?
Where	was	he		reading	an English book?	
When	was	he		reading	an English book?	
What	was	he		reading?		
What book	was	he		reading?		

Are you **speaking** English now? Краткий ответ: Yes, we **are**. No, we *are* **not**.

2. The Past Continuous употребляется для выражения двух основных оттенков длительности действия:

а) действие происходило в течение определенного времени в прошлом:

He **was reading** a book all the evening yesterday.

б) действие происходило в момент начала другого действия:

I **was reading** a book when my friend came in.

3. The Future Continuous употребляется для выражения длительности действия в будущем:

I **shall be working** all the day tomorrow. I **shan't be working** all the day tomorrow.

Shall I **be working** all the day tomorrow? Краткий ответ: Yes, I **shall**. No, **shall not**.

Table 7

Порядок слов в предложениях с глаголом в Future Continuous (Active)

		I	shall	be reading	an English book	at 5.
		I	shall not	be reading	an English book	at 5.
	Will	you		be reading	an English book	at 5?
When	will	you		be reading	an English book?	
What	will	you		be reading		at 5?
What book	will	you		be reading		at 5?

§6. Времена группы Perfect

Времена данной группы указывают на законченность действия к определенному моменту настоящего, прошедшего или будущего времени.

Времена группы Perfect образуются с помощью вспомогательного глагола **to have** в соответствующем времени и 3-й формы смыслового глагола (Participle II).

Вопросительная форма образуется путем постановки вспомогательного глагола **to have** перед подлежащим. В отрицательной форме частица **not** ставится между вспомогательным и смысловым глаголом.

Peter **has read** this book today. Peter **has not read** this book today.

Has Peter **read** this book today? (Краткий ответ: Yes, he **has**. No, he **has not**.)

Table 8

Порядок слов в предложениях с глаголом в Present Perfect (Active)

		He	has	just	written	a letter	to Pete.
		He	has not (hasn't)		written	a letter	to Pete.
		Who	has	just	written	a letter	to Pete?
	Has	he		just	written	a letter	to Pete?
	Hasn't	he			written	a letter	to Pete?
What	has	he		just	done?		
What	has	he		just	written?		
Whom	has	he		just	written	a letter	to?

1. The Present Perfect переводится на русский язык прошедшим временем совершенного вида и употребляется:

а) для выражения действия, которое завершилось к моменту речи:

He **has written** a letter. Он написал письмо.

б) с наречиями неопределенного времени:

ever – когда-нибудь, **never** – никогда, **lately** – в последнее время, **just** – только что, **often** – часто, **recently** – недавно и др.

I have never seen him. Я никогда его не видел.

в) с наречием определенного времени **today**, а также сочетаниями типа: **this week** – на этой неделе; **this month** – в этом месяце, **this summer** – этим летом, this year – в этом году и др.

I have seen him today. Я видел его сегодня.

г) Present Perfect употребляется также с обстоятельством времени, начинающимся с предлога **since**:

We have not seen him since that time. С тех пор мы его не видели.

д) Present Perfect употребляется тогда, когда мы интересуемся результатом, а не временем действия.

We have seen this film. Мы видели этот фильм.
I have done this work. Я сделала эту работу.

2. The Past Perfect указывает на законченность действия к определенному моменту в прошлом, а этот момент обозначается либо конструкцией типа by 2 o'clock (к 2 часам), либо с помощью другого действия, к моменту начала которого первое действие (в Past Perfect) закончилось.

Table 9

Порядок слов в предложениях с глаголом в Past Perfect (Active)

		He	had	done	his work	by 4.
		He	had not (hadn't)	done	his work	by 4.
		Who	had	done	his work	by 4?
	Had	he		done	his work	by 4?
What	had	he		done		by 4?
Whose work	had	he		done		by 4?
When	had	he		done	his work?	

Table 10

Порядок слов в предложениях с глаголом в Future Perfect (Active)

		He	will	have come	to school	by 2.
		He	will not (won’t)	have come	to school	by 2.
		Who	will	have come	to school	by 2?
	Will	he		have come	to school	by 2?
Where	will	he		have come		by 2?
By what time	will	he		have come	to school?	

We had translated the text by 2 o’clock.	Мы перевели текст к двум часам.
I had done my work before my friend came to me.	Я сделал свою работу до того, как ко мне пришел мой друг.

3. The Future Perfect выражает действие, которое будет завершено к определенному моменту в будущем:

I shall have passed my exams by the end of June.	Я сдам экзамены к концу июня.

Table 11

Структура кратких ответов

Общий вопрос	*Краткий ответ*
Is this table black?	Yes, it is. No, it isn’t.
Is Pete reading a book?	Yes, he is. No, he isn’t.
Does Pete speak English?	Yes, he does. No, he does not.
Did Pete work at a mine in 1974?	Yes, he did. No, he didn’t.

Has Tom written a letter?	Yes, he has. No, he hasn’t.
Will you study German?	Yes, I shall (will). No, I shall not (shan’t).
Can you speak English?	Yes, I can. No, I cannot.
Are there any students in the room?	Yes, there are. No, there are not.

§7. Разделительные вопросы (Disjunctive Questions)

Разделительные вопросы состоят из двух частей: первая часть – повествовательное предложение (утвердительное или отрицательное) с прямым порядком слов, а вторая представляет собой краткий общий вопрос, состоящий из соответствующего вспомогательного или модального глагола и местоимения.

Во второй части употребляется обратный порядок слов, и она соответствует русскому обороту «не правда ли?».

Первая часть разделительного вопроса произносится с понижающейся интонацией, вторая – с повышающейся.

Если первая часть вопроса утвердительная, то глагол во второй части стоит в отрицательной форме. Если первая часть вопроса отрицательная, то глагол во второй части употребляется в утвердительной форме.

Во второй части повторяется тот вспомогательный или модальный глагол, который входит в состав сказуемого первой части.

Table 12

Порядок слов в разделительных вопросах

Первая часть	Вторая часть
Pete works at a plant,	doesn’t he?
Tom is speaking English,	isn’t he?
Pete does not work at a plant,	does he?
You have read this book,	haven’t you?

§8. Сравнение Present Perfect и Past Indefinite

Present Perfect и Past Indefinite переводятся на русский язык одинаково – прошедшим временем русского глагола. Однако различия в употреблении этих времен в английском языке довольно существенны.

Past Indefinite выражает действие, которое происходило и закончилось в прошлом.	**Present Perfect** выражает действие, которое связано с настоящим.
I wrote a letter yesterday (last week, last month, last year).	I have written a letter today (this week, this month, this year).
We worked at the plant for a year.	We have worked at the plant for a year.
Мы проработали на заводе один год (и больше там не работаем).	Мы проработали на заводе один год (и работаем там сейчас).
Past Indefinite употребляется тогда, когда нас интересует время совершения действия.	**Present Perfect** употребляется тогда, когда нас интересует факт действия, а не время его совершения.
When did you see him? I saw him two days ago.	Have you seen him? Yes, I have.
Когда вы видели его? Я видел его два дня тому назад.	Вы видели его? Да.

§9. Future

1. Чтобы показать будущее время, не всегда используются вспомогательные глаголы “will” или “shall”.

- Когда действие **запланировано говорящим**, используется **Present Progressive**.

Example: I **am leaving** *tomorrow*. – Я *завтра* уезжаю.

- Когда говорят о событиях, которые произойдут **по расписанию**, используется **Present Simple**.

Example: The train **arrives** tomorrow *at 7 p.m*. – Поезд прибывает завтра *в 7 вечера*.

- Когда существует **намерение**, но еще **нет конкретной договоренности**, используется **to be going to …**

Example: **I am going to write** a letter to the president. – Я намереваюсь написать письмо президенту.

2. **Future Simple** употребляется:

- Если вы решили, что сделаете что-то в момент речи, когда идея пришла к вам только что.

Example: It's raining. I**'ll** take my umbrella. – Идет дождь. Я возьму зонтик.

- Когда мы предсказываем будущее (надеемся, что это произойдет, основываясь на фактах).

Example: You worked hard last year. I hope you **will pass** the Examination. – Ты работал упорно в прошлом году. Я надеюсь, ты сдашь экзамены.

You should go to Melbourne, I'm sure you**'ll like** it. – Тебе надо съездить в Мельбурн, я уверен, тебе понравится.

- Когда мы обещаем сделать что-то.

Example: I **will not have** dinner without you! I promise. – Я не буду обедать без тебя! Я обещаю.

Future Simple часто используется с выражениями: **(I am) sure, (I) think, probably**.

Example: I**'ll probably go** to Australia next year. – Я, вероятно, поеду в Австралию в следующем году.

I**’m sure** you**’ll like** my sister. – Я уверен, тебе понравится моя сестра.
Do you think it**’ll** rain today? – Как ты думаешь, сегодня будет дождь?

3. В английских придаточных предложениях времени и условия вместо **будущего времени (Future Simple)**, которое требуется по смыслу, употребляется **настоящее время (Present Simple)**.

Английские придаточные предложения *времени* присоединяются к главному предложению с помощью союзов **when** (когда), **while** (пока, в то время как), **till** (до тех пор пока), **until** (до тех пор пока не), **as soon as** (как только).

Example: He will send a message **as soon as** he receives the parcel. – Он отправит сообщение *(когда? придаточное предложение времени)*, как только получит посылку.

Английские придаточные предложения *условия* присоединяются к главному предложению с помощью союзов **if** (если), **unless** (если не), **in case** (в случае, если).

Example: I will be glad **if** she tells the truth. – Я буду счастлив, если она скажет правду.

Обратите внимание, что союзы **unless** и **until** имеют отрицательное значение, поэтому в предложении больше не нужно отрицания.

Example: My mother won’t be able to sleep **until** we are all home. – Моя мама не сможет заснуть, пока мы все не придем домой.

He won’t hear you **unless** you speak loudly. – Он тебя не услышит, если ты не будешь говорить громко.

Обратите внимание! Английские придаточные предложения, присоединяемые к главному предложению с помощью союзов **when** (когда) и **if** (ли), могут быть и *придаточными изъяснительными*, отвечающими на вопрос *что? чего? о чем?* и тогда в этих предложениях употребляется **Future Simple**.

Example: I don’t know ***when*** he **will receive** my letter. – Я не знаю (*чего?*), когда он получит мое письмо.

I don’t know ***if*** he **will receive** my letter in time. – Я не знаю (*чего?*), получит ли он мое письмо вовремя.

Оба придаточных предложения не являются ни придаточными предложениями времени, ни условия. Это – придаточные изъяснительные, следовательно, в этих предложениях нужно употребить **Future Simple**.

§10. Времена группы Perfect Continuous

Времена группы Perfect Continuous употребляются для обозначения действия, которые происходили в течение определенного времени и закончились или все еще продолжаются (продолжались, будут продолжаться) в определенный момент настоящего, прошедшего или будущего времени.

Времена группы Perfect Continuous в действительном залоге образуются с помощью глагола **to be** в соответствующем времени группы Perfect и основного глагола в форме Participle I (Active).

He **has been working** at this plant for two years. (Present Perfect Continuous)	Он работает на этом заводе уже два года.
He **had been working** for two years at the plant before I came here. (Past Perfect Continuous)	Он уже проработал на заводе два года до того, как я пришел туда.
He **will have been working** at the plant for two years before you graduate from the Institute. (Future Perfect Continuous)	Он проработает на заводе два года до того, как вы закончите институт.

Table 13

Сводная таблица времен в английском языке (действительный залог)

Группа времен	Indefinite Tenses (неопределенные времена)	Continuous Tenses (длительные времена)	Perfect Tenses (совершенные времена)	Perfect Continuous Tenses (совершенность + длительность)
1	2	3	4	5
Краткая характеристика группы времен	Указывают на состояние или действие в настоящем, прошедшем или будущем времени безотносительно к его длительности или завершенности.	Указывает на длительность действия в определенный момент настоящего, прошедшего или будущего времени.	Указывают на законченность действия к определенному моменту настоящего, прошедшего или будущего времени.	Указывают на законченность и наличие результата известного этапа действия, которое продолжается, продолжалось или будет продолжаться в то время, о котором идет речь
Infinitive	to ask to write	to be asking to be writing	to have asked to have written	to have been asking to have been writing
Вспомогательные глаголы: Present Past Future	 do, does did shall, will	 am, is, are was, were shall be, will be	 have, has had shall have, will have	 have been, has been had been shall have been, will have been
Present	He often writes letters. Он часто пишет письма. Does he often write letters? He does not often write letters.	He is writing a letter now. Он пишет письмо сейчас. Is he writing a letter? He is not writing a letter.	He has asked me some questions. Он задал мне несколько вопросов. Has he asked you any questions? He has not asked me any questions.	He has been writing books for 10 years. Он пишет книги уже в течение 10 лет. Has he been writing books for 10 years? Has he not been writing books for 10 years.

102

Past	He often wrote letters. Он часто писал письма. Did he often write letters? He did not often write letters.	He was writing a letter at 3 p.m. В 3 часа дня он писал письмо. Was he writing a letter at 3 p.m.? He was not writing a letter at 3 p.m.	He had asked me some questions before you came in. Он задал мне несколько вопросов, до того как вы вошли. Had he asked you any questions before we came in? He had not asked me any questions before you came in.	He had been writing books for 10 years when you came here. Он писал книги в течение 10 лет, когда вы приехали сюда. Had he been writing books for 10 years when you came here? He had not been writing books for 10 years when you came here.
Future	He will write letters to you. Он будет писать вам письма.	He will be writing a letter at 3 p.m. Он будет писать письмо в 3 часа.	He will (he'll) have written the letter by 11 a.m. К 11 часам утра он напишет письмо.	He will have been writing the letter for 20 minutes before you come to him. Он будет писать письмо в течение 20 минут до того, как вы придете к нему.
	Will he write letters to you? He will not (won't) write letters to you.	Will he be writing a letter at 3 p.m.? He will not (won't) be writing a letter at 3 p.m.	Will he have written the letter by 11 a.m.? He will not have written the letter by 11 a.m.	Will he have been writing the letter for 20 minutes before you come to him? He will not have been writing the letter for 20 minutes before you come to him.

103

§11. Страдательный залог (The Passive Voice)

Все переходные глаголы могут выражать действие в действительном и страдательном залоге:

Мы **построили** новый дом. Новый дом **был построен** нами.

В предложениях действительного залога грамматическое подлежащее обозначает деятеля или субъекта состояния.

Смысл страдательного залога заключается в том, что подлежащее выражает не лицо (или предмет), совершающее действие, а лицо (или предмет), являющееся объектом действия.

В страдательном залоге употребляются все времена за исключением Future Continuous и все группы времен Perfect Continuous.

Table 14

Порядок слов в предложениях с глаголом в Present Indefinite (Passive)

Утверд. предл.			Letters	are	written	by us.	
Отриц. предл.			Letters	are not	written	by us.	
Разделит. вопрос			Letters	are	written	by us,	aren't they?
Спец. вопр. к подлеж.			What	is	written	by us?	
Общий вопрос		Are	letters		written	by us?	
Спец. вопр.	Whom	are	letters		written	by?	

Table 15

Порядок слов в предложениях с глаголом в Past Indefinite (Passive)

The book	was	given	to Pete	yesterday.	
The book	was not	given	to Pete	yesterday.	
The book	was not	given	to Pete	yesterday,	was it?

		What	was	given	to Pete	yesterday?
	Was	the book		given	to Pete	yesterday?
Whom	was	the book		given	to?	
When	was	the book		given	to Pete	

Table 16

Порядок слов в предложениях с глаголом в Future Indefinite (Passive)

		A new house	will	be built	in our street.
		A new house	will not	be built	in our street.
		What	will	be built	in our street?
		What house	will	be built	in our street?
	Will	a new house		be built	in our street?
Where	will	a new house		be built?	

1. Страдательный залог (The Passive Voice) образуется из действительного следующим образом: дополнение предложения действительного залога становится подлежащим, а подлежащее – дополнением, которое вводится предлогами **by** или **with**; сказуемое выражается глаголом **to be + Participle II** смыслового глагола. Сравните:

Present Indefinite

We **write** letters.	Мы **пишем** письма.
Letters **are written** by us.	Письма **пишутся** нами.

Past Indefinite

We **wrote** letters.	Мы **писали** письма.
Letters **were written** by us.	Письма **были написаны** нами.

Future Indefinite

We **shall write** letters.	Мы **напишем** письма.
Letters **will be written** by us.	Письма **будут написаны** нами.

Времена в предложениях страдательного залога определяются по форме вспомогательного глагола **to be**.

В русском языке подлежащим предложения страдательного залога может быть только слово, выступающее в роли прямого дополнения к глаголу в действительном залоге. В английском предложении страдательного залога подлежащим может быть любое дополнение предложения в действительном залоге. Например:

I gave **him a book**. (Active Voice)	Я дал ему книгу.
A book was given to him by me. (Passive Voice)	Ему была дана книга.
He was given a book. (Passive Voice)	Ему дали книгу.

2. Continuous Tenses (Passive). Страдательный залог в Present и Past Continuous употребляется для выражения действия, которое продолжается (или продолжалось) в какой-то момент или отрезок времени.

Глагол-сказуемое в страдательном залоге времен Continuous состоит из вспомогательного глагола **to be** в Present или Past Continuous + **Participle II** смыслового глагола. Present Continuous: am, is, are being + Participle II. Past Continuous: was, were being + Participle II.

Сравните:

Present Continuous

Our teacher **is explaining** the rule.	Преподаватель объясняет правило.
The rule **is being explained** by the teacher.	Правило объясняется преподавателем.

Past Continuous

Our teacher was explaining the rule.	Преподаватель объяснял правило.
The rule was being explained by the teacher.	Правило объяснялось преподавателем.

3. Perfect Tenses (Passive). Времена группы Perfect в страдательном залоге употребляются для выражения законченного действия и образуются с помощью вспомогательного глагола **to be** в Present, Past или Future Perfect + **Participle II** смыслового глагола.
Present Perfect: have (has) been + Participle II
Past Perfect: had been + Participle II
Future Perfect: shall (will) have been + Participle II

Table 17

Порядок слов в предложениях с глаголом в Present Continuous (Passive)

		The rule	is	being explained	by Tom.	
		The rule	is not	being explained	by Tom.	
		The rule	is	being explained	by Tom,	isn't it?
		What	is	being explained	by Tom?	
	Is	the rule		being explained	by Tom?	
Whom	is	the rule		being explained	by?	

Table 18

Порядок слов в предложениях с глаголом в Past Continuous (Passive)

This rule	was	being explained	by the teacher	at 2.	
This rule	was not	being explained	by the teacher	at 2.	
This rule	was	being explained	by the teacher	at 2,	wasn't it?
What	was	being explained	by the teacher	at 2?	
What rule	was	being explained	by the teacher	at 2?	

	Was	this rule		being explained	by the teacher	at 2?
Whom	was	this rule		being explained	by?	
When	was	this rule		being explained	by the teacher?	

Table 19

Порядок слов в предложениях с глаголом в Present Perfect (Passive)

		This letter	has been written	by me	today.	
		This letter	has not been written	by me	today.	
		This letter	has been written	by me	today,	hasn’t it?
		What	has been written	by me	today?	
		What letter	has been written	by me	today?	
	Has	this letter	been written	by me	today?	
Whom	has	this letter	been written	by?		
When	has	this letter	been written	by me?		

Table 20

Порядок слов в предложениях с глаголом в Past Perfect (Passive)

This work	had been done	by him	by 2.	
This work	had not been done	by him	by 2.	
This work	had been done	by him	by 2,	hadn’t it?

	What work	had been done	by him	by 2?	
	Had	this work	been done	by him	by 2?
Whom	had	this work	been done	by?	

Table 21

Порядок слов в предложениях с глаголом в Future Perfect (Passive)

		This text	will have been translated	by Pete	by 3.	
		This text	will not have been translated	by Pete	by 3.	
		This text	will have been translated	by Pete	by 3,	won’t it?
		What	will have been translated	by Pete	by 3?	
		What text	will have been translated	by Pete	by 3?	
	Will	this text	have been translated	by Pete	by 3?	
Whom	will	this text	have been translated	by?		
By what time	will	this text	have been translated	by Pete?		

Сравните:

Present Perfect

I **have written** a letter.	Я написал письмо.
The letter **has been written** by me.	Письмо было написано мной.

Past Perfect

I **had written** a letter before you came.	Я написал письмо до того, как вы пришли.
The letter **had been written** by me before you came.	Письмо было написано мною, как вы пришли.

Future Perfect

I **shall have written** a letter before you come.	Я напишу письмо до того, как вы придете.
The letter **will have been written** by me before you come.	Письмо будет написано мною, как вы придете.

Table 22

Сводная таблица времен в английском языке (страдательный залог)

Группа времен	Indefinite	Continuous	Perfect
Infinitive	to be asked to be written	to be being asked to be being written	to have been asked to have been written
Вспомогательные глаголы: Present Past Future	 am, is, are was, were shall be, will be	 am, is, are + being was, were + being	 have, has + been had + been shall have, will have + been
Present	He is always asked at the lessons. Его всегда спрашивают на занятиях. Is he always asked at the lessons? He is not always asked at the lessons.	He is being asked by the teacher now. Сейчас его спрашивает преподаватель. Is he being asked by the teacher now? He is not being asked by the teacher now.	The letter has been written by Pete. Письмо написано Петей. Has the letter been written by Pete? The letter has not been written be Pete.
Past	He was always asked at the lessons. Его всегда спрашивали на занятиях. Was he always asked at the lessons? He was not always asked at the lessons.	He was being asked by the teacher when I came in. Его спрашивал преподаватель, когда я вошел. Was he being asked by the teacher when you came in? He was not being asked by the teacher when I came in.	The letter had been written by Pete by 2 o’clock yesterday. Письмо было написано Петей к двум часам вчера. Had the letter been written by Pete before we came here? The letter had not been written by Pete before we came here.
Future	He will (he’ll) always be asked at the lessons. Его будут всегда спрашивать на занятиях. Will he always be asked at the lessons? He will not (won’t) always be asked at the lessons.	Не употребляется.	The letter will have been written by Pete by 2 o’clock. Письмо будет написано Петей к двум часам. Will he letter have been written by Pete before we come here? The letter will not have been written by Pete before we come here.

111

§12. Модальные глаголы и их эквиваленты

Модальные глаголы выражают не действие, а отношение говорящего к действию, действие же выражается инфинитивом, который употребляется после модальных глаголов.

I **can do** this work.	Я могу сделать эту работу.
I **must do** this work.	Я должен сделать эту работу.

Действие в этих предложениях выражается глаголом **to do**, а глаголы **can** и **must** выражают отношение говорящего к действию.

Модальные глаголы не имеют формы инфинитива, т.е. не употребляются с частицей **to**.

После модальных глаголов частица **to** перед последующим инфинитивом не употребляется (исключение: ought).

He **must come** to take a book.	Он должен прийти взять книгу.

В третьем лице единственного числа Present Indefinite модальные глаголы не принимают окончания **-s**. Вопросительная и отрицательная формы модальных глаголов образуются без вспомогательного глагола **to do**.

May I **ask** you a question?	Разрешите спросить вас?
You **must not be** late.	Вы не должны опаздывать.

Все модальные глаголы не имеют формы будущего времени, а глагол must не имеет также и формы прошедшего времени.

Для выражения временных форм, которых не имеют модальные глаголы, употребляются заменители модальных глаголов.

Must, To Have to, To Be Obliged to, To Be to

Глагол must выражает необходимость или обязательность выполнения действия:

You **must** to do this work.	Вы должны сделать эту работу.

Заменители **to have to** и **to be obliged to** выражают долженствование в значении вынужденности (в силу обстоятельств):

I **had to do** this work.	Я должен был сделать эту работу.
We **shall have to do** this work.	Мы должны будем сделать эту работу.
I **was obliged to do** this work.	Я должен был (был вынужден) сделать эту работу.

Глагол **to be to** в функции заменителя модального глагола **must** выражает долженствование вследствие договоренности или запланированности:

He **was to come** at 7 o'clock.	Он должен был прийти в 7 часов.

После глаголов **to have to** и **to be to** , выражающих модальность, инфинитив последующего глагола употребляется без частицы.

He **had to finish** his work yesterday.	Он должен был закончить работу вчера.

Can (Could), To Be Able to

Глагол can (could) (заменитель to be able to) выражает физическую возможность, умение или возможность, которая не зависит ни от каких обстоятельств:

He **can speak** English.	Он может (умеет) говорить по-английски.
I **can lift** this box.	Я могу поднять этот ящик.
You **can go** home.	Вы можете идти домой. (возможность)
Will he **be able to** do this work?	Он сможет сделать эту работу? (физическая возможность)

May (Might)

Глагол **may (might)** выражает разрешение, предположение или пожелание:

You **may go** home.	Вы можете (вам разрешается) идти домой.
It **may rain** tomorrow.	Завтра может пойти дождь.
May success **attend** you!	Да сопутствует вам успех!

Shall, Should

Глагол **shall** выражает долженствование с оттенком приказания:

You **shall do** this work at once.	Вы должны сделать эту работу немедленно.

Глагол should выражает долженствование с оттенком совета, упрека, сожаления:

You **should enter** the Institute.	Вам следует поступить в институт.

В сочетании с Perfect Infinitive глагол **should** выражает сожаление о невыполненном действии:

You should have done this work.	Вам надо было (следовало) сделать эту работу (но вы ее не сделали).

Ought

Глагол **ought to** выражает необходимость того, что следует ожидать по логике вещей, моральный долг, желательность действия:

Petrov **ought to know** that for he is a skilled engineer.	Петров должен это знать, так как он квалифицированный инженер.
You **ought to help** your friend.	Вы должны (вам следует) помочь вашему другу.

В сочетании с Perfect Infinitive глагол **ought** выражает действие, которое не состоялось в прошлом:

You **ought to have helped** your friend at that moment.	Вам нужно было помочь вашему другу в тот момент.

Will, Would

Глагол **will** выражает желание, волю, решимость, просьбу:

I **will** gladly **help** you.	Я охотно помогу вам.
Will you **come in**, please?	Заходите, пожалуйста.

Глагол **would** в отрицательном предложении выражает нежелание выполнить действие в прошлом:

He **wouldn't** do it.	Он не хотел делать этого.

В вопросительном предложении **would** выражает вежливую просьбу:

Would you give me your book?	Дайте мне, пожалуйста, вашу книгу.

Would указывает также на повторяемость действия в прошлом:

I **would get up** at 6 o'clock every morning.	Я обычно вставал в 6 часов каждое утро.

Table 23

Порядок слов в предложениях с модальными глаголами (Active Voice)

Утверд. предл.	Pete	can	do	this work.
Отриц. предл.	Pete	cannot (can't)	do	this work.

Разделит. вопр.			Pete	can	do	this work,	can't he?
Вопр. к подлеж.			Who	can	do	this work?	
Общий вопрос		Can	Pete		do	this work?	
Спец. вопросы	What	can	Pete		do?		
	What work	can	Pete		do?		

Table 24

Порядок слов в предложениях с модальными глаголами (Passive Voice)

		This work	can	be done	by Pete.	
		This work	cannot (can't)	be done	by Pete.	
		This work	can	be done	by Pete,	can't it?
		What	can	be done	by Pete?	
	Can	this work		be done	by Pete?	
Whom	can	this work		be done	by?	

§13. Согласование времен (Sequence of Tenses)

Правило согласования времен заключается в зависимости времени придаточного дополнительного предложения от времени главного. Если сказуемое в главном предложении стоит в настоящем или будущем времени, в придаточном предложении употребляется любое время, которое требуется по смыслу, например:

We **know** that Мы знаем, что	he **speaks** English.	он говорит по-английски.
	he **is translating** a text.	он переводит текст.
	he **has left** for Moscow.	он уехал в Москву.
	he **will study** English.	он будет изучать английский язык.

Если в главном предложении употребляется одно из прошедших времен, то в придаточном предложении все настоящие времена,

которые требуются по смыслу, заменяются прошедшими той же группы, а все будущие - будущими в прошедшем (Future-in-the-Past):

We **knew** that Мы знали, что	he **spoke** English. he **was translating** a text. he **had left** for Moscow. he **would study** English.	он говорит по-английски. он переводит текст. он уехал в Москву. он будет изучать английский язык.

Правило согласования времен не соблюдается, если в придаточном дополнительном предложении речь идет об общеизвестном факте:

Galileo **proved** that the earth **moves** round the sun.	Галилей доказал, что земля вращается вокруг солнца.

§14. Прямая и косвенная речь (Direct and Indirect Speech)

My friend says, “I work at a plant.”
My friend asked me, “Do you work at a plant?”
He asked me, “Will you study at the Institute?”

При превращении прямой речи в косвенную применяется правило согласования времен. При этом необходимо обратить внимание на правильное употребление личных и притяжательных местоимений, так как в косвенной речи передаются чужие слова.

Если в прямой речи употреблено вопросительное предложение, то прямой вопрос превращается в косвенный, который вводится союзами **if** или **whether**.

My friend says that works at a plant.	Мой друг говорит, что он работает на заводе.
My friend asked me if (whether) I worked at a plant.	Мой друг спросил меня, работаю ли я на заводе.
He asked me if I should study at the Institute.	Он спросил меня, буду ли я учиться в институте.

§15. Постановка вопросов к отдельным членам предложения

1. Our students work at the laboratory every Friday.	Наши студенты работают в лаборатории каждую пятницу.

а) Общий вопрос:

Do your students work at the laboratory every Friday?
(Краткий ответ: Yes, they do. No, they do not.)

б) Специальные вопросы:

What students work at the laboratory every Friday?	Какие студенты работают в лаборатории каждую пятницу?
Who works at the laboratory every Friday?	Кто работает в лаборатории каждую пятницу?
What do our students do at the laboratory every Friday?	Что делают наши студенты в лаборатории каждую пятницу?
Where do our students work every Friday?	Где наши студенты работают каждую пятницу?
When do our students work at the laboratory?	Когда наши студенты работают в лаборатории?

2. My friend studies at our Institute.	Мой друг учится в нашем институте.

а) Общий вопрос:

Does your friend study at our Institute?
(Краткий ответ: Yes, he does. No, he doesn’t.)

б) Специальные вопросы:

Whose friend studies at our Institute?	Чей друг учится в нашем институте?
Who studies at our Institute?	Кто учится в нашем институте?

At what Institute does your friend study?	В каком институте учится ваш друг?
Where does your friend study?	Где учится ваш друг?

3. Petrov is a worker.	Петров – рабочий.

а) Общий вопрос:

Is Petrov a worker?
(Краткий ответ: Yes, he is. No, he is not.)

б) Специальные вопросы:

Who is a worker?	Кто рабочий?
What is Petrov?	Кто Петров? (по профессии)

4. He can read English books.	Он может читать английские книги.

а) Общий вопрос:

Can he read English books?
(Краткий ответ: Yes, he can. No, he cannot.)

б) Специальные вопросы:

Who can read English books?	Кто может читать английские книги?
What books can he read?	Какие книги он может читать?
What can he read?	Что он может читать?

5. They saw him here yesterday.	Они видели его здесь вчера.

а) Общий вопрос:

Die they see him here yesterday?	Они видели его здесь вчера?

б) Специальные вопросы:

Who saw him here yesterday?	Кто видел его здесь вчера?
Who (m) did they see here yesterday?	Кого они видели здесь вчера?
Where did they see him yesterday?	Где они видели его вчера?
When did they see him here?	Когда они видели его здесь?

6. They studied English at school last year.	Они изучали английский язык в школе в прошлом году.

а) Общий вопрос:

Did they study English at school last year?
(Краткий ответ: Yes, they did. No, they did not.)

б) Специальные вопросы:

Who studied English at school last year?	Кто изучал английский язык в школе в прошлом году?
What did they study at school last year?	Что они изучали в школе в прошлом году?
Where did they study English last year?	Где они изучали английский язык в прошлом году?
When did they study English at school?	Когда они изучали английский язык в школе?

7. She is reading a newspaper.	Она читает газету.

а) Общий вопрос:

Is she reading a newspaper?
(Краткий ответ: Yes, she is. No, she is not.)

б) Специальные вопросы:

Who is reading a newspaper?	Кто читает газету?
What is she doing?	Что она делает?
What is she reading?	Что она читает?

8. We shall work at the mines in some years.	Мы будем работать на шахтах через несколько лет.

а) Общий вопрос:

shall we work at the mines in some years?
(Краткий ответ: Yes, we shall. No, we shall not.)

б) Специальные вопросы:

Who will work at the mines in some years?	Кто будет работать на шахтах через несколько лет?
Where shall we work in some years?	Где мы будем работать через несколько лет?
When shall we work at the mines?	Когда мы будем работать на шахтах?

9. He is always greeted by the students in English.	Студенты приветствуют его всегда по-английски.

а) Общий вопрос:

Is he always greeted by the students in English?
(Краткий ответ: Yes, he is. No, he is not.)

б) Специальные вопросы:

Who is always greeted by the students in English?	Кого студенты приветствуют всегда по-английски?
Who (m) is he always greeted in English by?	Кто приветствует его всегда по-английски?
What language is he greeted in?	На каком языке его приветствуют?

10. This work has been done by Tom today.	Эта работа была сделана Томом сегодня.

а) Общий вопрос:

Has this work been done by Tom today?
(Краткий ответ: Yes, it has. No, it has not.)

б) Специальные вопросы:

What has been done by Tom today?	Что было сделано Томом сегодня?
What work has been done by Tom today?	Какая работа была сделана Томом сегодня?
Who (m) has this work been done by?	Кем была выполнена эта работа?

11. This book must be read by our students.	Эта книга должна быть прочитана нашими студентами.

а) Общий вопрос:

Must this book be read by our students?
(Краткий ответ: Yes, it must. No, it must not.)

б) Специальные вопросы:

What must be read by our students?	Что должно быть прочитано нашими студентами?
What book must be read by our students?	Какая книга должна быть прочитана нашими студентами?
Who (m) must this book be read by?	Кем должна быть прочитана эта книга?
What students must this book be read by?	Какими студентами должна быть прочитана эта книга?

12. This book was much spoken about at that time.	Об этой книги много говорила в то время.

а) Общий вопрос:

Was this book much spoken about at that time?
(Краткий ответ: Yes, it was. No, it was not.)

б) Специальные вопросы:

What was much spoken about at that time?	О чем много говорили в то время?
What book was much spoken about at that time?	О какой книге много говорили в то время?
When was this book much spoken about?	Когда много говорили об этой книге?

13. There is a new book on the table.	На столе новая книга.

а) Общий вопрос:

Is there a new book on the table?
(Краткий ответ: Yes, there is. No, there is not.)

б) Специальные вопросы:

What is there on the table?	Что находится на столе?
What book is there on the table?	Какая книга на столе?
Where is there a new book?	Где находится новая книга?

§16. Употребление отрицаний

В русском языке мы можем употребить несколько отрицаний в одном и том же отрицательном предложении. Например: Я никому ничего не говорил.

В английском языке допускается только одно отрицание, которое выражено либо отрицательной формой глагола, либо отрицательным местоимением. Например:

He does **not** know anything about it.	Он не знает ничего об этом.

He knows **nothing** about it.	Он ничего не знает от этом.
Neither o us knows about it.	Никто из нас не знает об этом.
No man can do this work.	Ни один человек не может сделать эту работу.

Место отрицание в английском предложении меняет смысл предложения:

He could not order me to do this work.	Он не мог приказать мне сделать эту работу.
He ordered me not to do this work.	Он приказал мне не делать эту работу.

Имеются также идиоматические выражения с отрицанием. Например:

I could not help laughing.	Я не мог удержаться от смеха.
I could not but tell him about it.	Я не мог не рассказать ему об этом.

§17. Существительное (The Noun)

В современном английском языке имя существительное имеет число (a pen - pens) и падеж (общий и притяжательный). Подавляющее большинство существительных образуют множественное число путем прибавления суффикса **-(e)s** к форме единственного числа. Суффикс **-(e)s** читается:

[s] – после глухих согласных: a cat – cat**s**;
[z] – после звонких согласных и гласных: a bed – bed**s**;
[ɪz] – после шипящих и свистящих согласных: a bus – bus**es**.

Существительные, которые оканчиваются на **-f**, **-fe**, имеют во множественном числе суффикс **-ves** [vz]: a kni**fe** – kni**ves**.

Существительные, которые оканчиваются на согласную + **y**, имеют во множественном числе суффикс **-ies** [iz]: a city – cit**ies**.

Сложные существительные образуют множественное число путем прибавления суффикса **-(e)s** ко второму существительному: a blackboard – blackboards.

Некоторые существительные имеют особую форму множественного числа: man – men, woman – women, child *ребенок* – children, ox *бык* – oxen, foot *ступня* – feet, tooth *зуб* – teeth, goose *гусь* – geese.

Некоторые существительные имеют одну форму как для единственного, так и для множественного числа: deer *олень, олени*, fish *рыба*, *рыбы*, sheep *овца*, *овцы*, swine *свинья*, *свиньи*, salmon *лосось, лососи* и др.

Некоторые существительные иностранного происхождения образуют множественное число по правилам исходного языка: datum *данная величина* – data, memorandum – memoranda, phenomenon *явление* – phenomena, formula – formulae, crisis – crises, nucleus *ядро* – nuclei.

В притяжательном падеже употребляются одушевленные существительные, а также существительные, обозначающие время (an hour’s sleep), расстояние (two miles’ walk), времена года (a winter’s storm).

Существительное единственного числа принимает в притяжательном падеже апостроф + **s (‘s)**, существительное во множественном числе, имеющее суффикс **-(e)s**, принимает в притяжательном падеже только апостроф **(’)**: my sister’s room *комната моей сестры*, my sisters’ room *комната моих сестер*.

В английском языке значительно меньше качественных прилагательных, чем в русском языке. Поэтому почти любое английское существительное может быть употреблено в роли определения другого существительного. Например: a stop *остановка* – a **tram** stop *трамвайная остановка*.

Иногда при одном существительном употребляется несколько существительных и прилагательных в роли определения: the **city transport** system *транспортная система города*, **alternating current** transformers трансформаторы переменного тока, **some new steam-turbine-electric** locomotives несколько новых турбоэлектровозов.

§18. Исчисляемые и неисчисляемые существительные в английском языке (Countable and Uncountable Nouns)

Исчисляемые существительные (**Countable nouns**).

Существительное является исчисляемым, если можно рассматривать его, как одно из нескольких раздельных предметов, то есть исчисляемые существительные могут быть фактически посчитаны.

Неисчисляемые существительные (**Uncountable nouns**).

Существительное является неисчисляемым, если невозможно рассматривать его в качестве нескольких раздельных предметов, а только как некое единое вещество, или идею, например: **music** (*музыка*), **butter** (*масло*), **water** (*вода*), **advice** (*совет*). То есть, неисчисляемые существительные невозможно посчитать.

Грамматические отличия исчисляемых и неисчисляемых существительных.

Существуют несколько важных грамматических отличий в способе применения исчисляемых и неисчисляемых существительных.

1. Вы можете использовать исчисляемое существительное в *единственном* и *множественном* числе, например: **egg - eggs, horse - horses, university - universities, book - books, ticket - tickets, car - cars**.

Неисчисляемые существительные во множественном числе не употребляются:

You should listen to his **advice**. (правильно) (Вы должны слушать его советы.)

You should listen to her **advices**. (неправильно)

2. Вы можете использовать исчисляемое существительное с *неопределёнными артиклями* **a** или **an**, например: **a car, a university, a horse, a ticket, an egg, a book.**

Не используйте артикли **a** или **an** с неисчисляемыми существительными:

I like listening to **music**. (верно) (Мне нравиться слушать музыку.)

I like listening to **a music**. (неверно)

3. Вы можете использовать неисчисляемое существительное со словами, означающими количество, такими как **some** и **any**: **some butter, any music.**

Если Вы хотите использовать эти слова с исчисляемыми существительными, то Вам необходимо поставить эти существительные во множественное число и говорить **some tickets, any eggs** и так далее. Например:

She bought **some books**. (верно) (Она купила несколько книг.)

She bought **some book**. (неверно)

4. Вы можете использовать *количественные местоимения* **many, much** (*много*), **how many (much)** (*как много, сколько*), **a few, a little** (*немного, несколько*), **little, few** (мало) с существительными. Но способы их использования различны.

Исчисляемые существительные	*Неисчисляемые существительные*
many – много	**much** – много

- Do you have much money? — У тебя много денег?
- Do you have many books? — У тебя много книг?
- I do not have much time. — У меня не много времени.
- I do not have many friends. — У меня не много друзей.

a lot of – много

Словосочетание **a lot of (lots of)** употребляется как с исчисляемыми, так и с неисчисляемыми существительными.

- I have a lot of books. — У меня много книг.
- I have lots of tea. — У меня много чая.

a few – немного	**a little** – немного
I have a few books. — У меня есть несколько книг (немного книг).	I have a little time. — У меня есть немного времени.

few – мало	**little** – мало
I have few books. — У меня мало книг.	I have little time. — У меня мало времени.

Вот несколько примеров:

Исчисляемые:

How many records do you have? (Сколько у тебя есть записей?)
He doesn’t have many friends.
There are a few room still available.

Неисчисляемые:

I don’t have much money. (У меня не много денег.)
How much time do you have? (Сколько у тебя времени?)
There is a little butter in the fridge. (В холодильнике есть немного масла.)

5. Вы можете использовать неисчисляемое существительное само по себе без таких слов как **the**, **some** или **any**:

She doesn’t eat meat. (Она не ест мясо.)
If you need advice, don’t be afraid to ask. (Если тебе нужен совет, не бойся спрашивать.)

Вы не можете использовать подобным образом исчисляемое существительное в единственном числе:

I like reading books. (верно) (Я люблю читать книги.)
I like reading book. (неверно)
Computers are always causing problems. (правильно) (Компьютеры всегда создают проблемы.)

§19. Артикль (The Article)

Артикль является очень важным элементом, употребляемым при существительном. В английском языке два артикля: неопределенный артикль – **a (an)** и определенный артикль – **the**.

Неопределенный артикль употребляется, когда существительное просто называет предмет как один из группы ему подобных. Определенный артикль употребляется перед существительным, когда оно обозначает известный, конкретный предмет.

Yesterday I met **a** man in the street. **The** man works at a mine.	Вчера я встретил человека на улице. Этот человек работает на шахте.

Неопределенный артикль **a (an)** произошел от числительного **one** (один) и с существительными во множественном числе не употребляется. Неопределенный артикль нередко употребляется и теперь в значении «один» перед исчисляемыми существительными:

How many times **a** week do you have laboratory classes in English?	Сколько раз в неделю у вас бывают лабораторные занятия по английскому языку?

Неопределенный артикль всегда употребляется с названиями профессий:

My brother is **an** engineer.	Мой брат – инженер.

Определенный артикль произносится [ðə] или [ði:]:

the [ðə] pen, the [ði:] apple.

Определенный артикль употребляется:

1. Когда существительное обозначает предмет или явление, которое выделяется из группы ему подобных:

The book you have told me about is very interesting.	Книга, о которой вы мне говорили, очень интересная.

2. Когда предмет является единственным в своем роде, уникальным:

The sun rises in the East.	Солнце восходит на востоке.

3. Перед фамилией, обозначающей всю семью:

The Browns are a very nice family.	У Браунов очень хорошая семья.

4. Перед существительными с определением, выраженным порядковым числительным:

We came to Moscow on **the** second day.	Мы приехали в Москву на второй день.

5. Перед названиями четырех стран света:

the East, **the** North, **the** West, **the** South.

6. Перед прилагательными в превосходной степени:

Pavlov is **the** best student of our group.

7. Перед названием некоторых стран и районов:

the Russian Federation, **the** United States, **the** Ukraine, **the** Far East и др.

8. Перед названием океанов, морей, рек и горных цепей:

the Atlantic Ocean, **the** Baltic Sea, **the** Urals, **the** Volga и др.

Артикль не употребляется:

1. Перед именами собственными:

Donetsk is the centre of mining industry in the south of our country.

2. Перед вещественными существительными, которые называют вещество, но не указывают на его количество:

Coal is a sedimentary rock of organic origin.

3. Перед существительными, которые служат обращением:

Good-bye, **friend**!

4. Перед существительными, обозначающими членов семьи:

Have you spoken to **Father** about it?

5. Перед названиями наук:

The first-year students study **mathematics**, **chemistry**, **physics**, **English** and some other subjects.

§20. Местоимения (Pronouns). Слово “one”

1. Личные и притяжательные местоимения имеют следующие грамматические категории:

а) число – единственное и множественное;

б) лицо – первое, второе, третье;

в) род – в третьем лице единственного числа;

г) падеж – именительный и объектный (личные местоимения).

Table 24

	Личные		Притяжательные		Возвратно-усилительные
	Имени-тельный (кто, что?)	Объект-ный (кому, кого?)	Простая форма (чей?)	Абсо-лютная форма (чей)	
я	I	me	my	mine	myself
ты	you	you	your	yours	yourself
он	he	him	his	his	himself
она	she	her	her	hers	herself
он, она, оно	it	it	its	its	itself
мы	we	us	our	ours	ourselves
вы	you	you	your	yours	yourselves
они	they	them	their	theirs	themselves

Личные местоимения в именительном падеже употребляются, как правило, в роли подлежащего:

We live in a small town.	Мы живем в небольшом городке.

Личные местоимения в косвенном падеже употребляются в роли дополнения и ставятся после глагола:

I know **him**.	Я знаю его.

Притяжательные местоимения в простой форме употребляются в роли определения и ставятся перед определяемым словом:

I know him and **his** brother.	Я знаю его и его брата.

Притяжательные местоимения в абсолютной форме также могут выступать в роли определения к существительному. В этой функции они вводятся предлогом of и ставятся после существительного:

He is a friend **of mine**.	Он мой друг.

Притяжательные местоимения в абсолютной форме употребляются также в роли именной части составного сказуемого:

This book is **mine**.	Эта книга моя.

2. Указательные местоимения this, that имеют формы единственного и множественного – **these, those**.

This is a table.	Это стол.
These are tables.	Это столы.
That is a building.	Там здание.
Those are buildings.	Там здания.

Местоимения **this** и **these** употребляются для обозначения близлежащих предметов, **that, those** – для обозначения более отдаленных предметов.

3. Вопросительные и относительные местоимения who *кто*, **whom** *кого, кому*, **whose** *чей* употребляются по отношению к лицам.

Местоимение **what** *что, какой, каков* употребляется по отношению к неодушевленным предметам.

Who (m) do you see here?	Кого вы видите здесь?
What do you see here?	Что вы видите здесь?
Whose book is this?	Чья это книга?
What book is this?	Какая это книга?

В современном английском языке форма **who** употребляется вместо **whom** в вопросах типа:

Who did you meet there?	Кого вы там встретили?
Who are you looking at?	На кого вы смотрите?

Местоимения **that** *который* и **which** *какой, который* относятся как к одушевленным, так и к неодушевленным предметам.

That is the man that told me about it.	Это человек, который рассказал мне об этом.
The book that I gave to you is very interesting.	Книга, которую я дал вам, очень интересная.
Which of these books will you take?	Которую из этих книг вы возьмете?

4. Неопределенные местоимения some и any указывают на неопределенное количество людей и предметов, причем **some** употребляется в утвердительных предложениях, а **any** – в вопросительных и отрицательных. **Отрицательное местоимение no** указывает на отсутствие чего-л.

I have some English books.	У меня есть несколько английских книг.
Have you any English books?	У вас есть какие-нибудь английские книги?
I have not any English books.	У меня нет никаких английских книг.
I have no English books.	У меня нет английских книг.

Местоимение **any** в утвердительных предложениях переводится на русский язык словами *любой, всякий*:

Take any book you like.	Возьмите любую книгу, которая вам нравится.

Производные местоимения **somebody**, **someone** *кто-то*, **something** *что-то*, **anything** *что-нибудь*, **anyone**, **anybody** *кто-нибудь*, *всякий*, **nobody**, **none** *никто*, **nothing** *ничто* употребляются по тем же правилам, что и исходные формы:

Somebody knocked at the door.	Кто-то постучал в дверь.
Nobody knows anything about it.	Никто об этом ничего не знает.
Does anybody know anything about it?	Знает ли кто-нибудь что-нибудь об этом?
I know nothing about it.	Я об этом ничего не знаю.

5. Местоимения every и each переводятся на русский язык одинаково – словом *каждый*.

Местоимение **each** выделяет лицо или предмет из группы ему подобных.

Each of us must bring some books.	Каждый из нас должен принести несколько книг.

Every имеет обобщающее значение:

Every morning I get up at seven o’clock.	Каждое утро я встаю в семь часов.

Every образует производные формы **everybody** (*каждый, все*), **everything** (*всё*).

6. Местоимения other и another имеют значение *другой*:

Give a few other examples.	Дайте несколько других примеров.
He came and took another book.	Он пришел и взял еще одну книгу (другую книгу).

7. Взаимные местоимения each other и one another переводятся на русский язык *один другому*, причем, **each other** относится к двум лица, **one another** – ко многим лицам:

My friend and I often help each other.	Мой друг и я часто помогаем друг другу.
All the workers of our team help one another.	Все рабочие нашей бригады помогают друг другу.

8. Местоимения the same *тот же самый*, **such** *такой*:

He gave me the same book that he had given to you.	Он мне дал ту же книгу, что он давал тебе.
I do not know such a man.	Я не знаю такого человека.

Примечание: Следует различать слова **some** *несколько, какой-нибудь* и **the same** *тот же самый*:

He brought me some books.	Он принес мне несколько книг.
He brought me the same book.	Он принес мне ту же книгу.

9. Местоимения either и neither. Местоимение **either** имеет два значения: *один из двух* и *оба из двух*.

Read either book. They are both very interesting.	Читайте любую книгу. Они обе очень интересные.
People were standing on either bank of the river.	Люди стояли на том и на другом берегу реки.

Neither – отрицательная форма.

Neither of us could answer that question.	Никто из нас не смог ответить на этот вопрос.

10. Местоимение it имеет три значения:

а) личное местоимение со значение *он, она, оно*:

Read this book. It is very interesting.	Прочитайте эту книгу. Она очень интересная.

б) указательное местоимение *это*:

What is it?	Что это?

в) неопределенное местоимение, которое употребляется в роли формального подлежащего безличных предложений и на русский язык не переводится:

It is cold.	Холодно.
It snows in winter.	Зимой идет снег.

11. Слово one употребляется в различных значениях:

а) в значении русского слова *один*:

He is one of the best students of our group.	Он один из лучших студентов нашей группы.

б) как заменитель существительного во избежание его повторения:

This is a black table, and that is a red one.	Это черный стол, а то – красный стол.

в) в роли неопределенно-личного подлежащего:

One must know one’s duty.	Каждый должен знать свои обязанности.

§21. Прилагательное (The Adjective)
Степени сравнения прилагательных английского языка (The Degrees of Comparison)

В современном английском языке прилагательные изменяются только по степеням сравнения. Как и в русском, так и в английском языке прилагательные имеют три степени сравнения: положительную, сравнительную, превосходную.

В зависимости от образования степеней сравнения прилагательные подразделяются на три группы:

а) односложные – long, short, big и т.д., а также некоторые двусложные, оканчивающиеся на **–y**: early;

б) многосложные – interesting, difficult и др.;

в) прилагательные, образующие степени сравнения не по общим правилам: good, bad, little, many.

Положительная степень	*Сравнительная степень*	*Превосходная степень*
Длинный - *long*	Длиннее, более длинный - *long**er***	Самый длинный – *the long**est***
Легкий - *eas**y***	Легче, более легкий - *eas**ier***	Самый легкий, наилегчайший – ***the** eas**iest***
Короткий - *short*	Короче, более короткий - *short**er***	Самый короткий, кратчайший – ***the** short**est***
Полезный – *useful*	Полезнее, более полезный – ***more** useful*	Наиболее/самый полезный – ***the most** useful*
Трудный - *difficult*	Менее трудный – ***less** difficult*	Наименее трудный – ***the least** difficult*
Плохой – *bad*	Хуже - ***worse***	Худший – ***the worst***
Маленький - *little*	Меньше - ***less***	Наименьший – ***the least***

Как видно из приведенных примеров, сравнительная и превосходная степени прилагательных в английском языке образуются тремя способами:

1) прибавлением суффиксов ***-er*** и ***–est*** к основной форме (синтетический);

2) за счет употребления слов ***more/ less*** и ***most/ least*** перед основной формой (аналитический);

3) путем образования степеней сравнения от разных корней. Перед прилагательными в превосходной степени сравнения ставится определенный артикль ***the***.

Правила выбора способа образования степеней сравнения в английском языке весьма просты.

Синтетический способ (при помощи суффиксов ***-er*** для сравнительной степени и ***-est*** для превосходной степени) применим к:

всем односложным прилагательным: *tall – taller – the tallest; fat – fatter – the fattest*. Исключением являются: *like* – похожий – *more like – the most like; real* - настоящий – *more real – the most real*;

всем двусложным прилагательным, оканчивающимся на ***–y***: *happy – happier – the happiest; funny – funnier – the funniest.*

Двусложные прилагательные в английском языке, оканчивающиеся на ***–le, -ow, -er*** и двусложные прилагательные с ударением на втором слоге (кроме: *exact* - точный – только *more exact – the most exact*), а также прилагательные *common, handsome, pleasant, solid, quiet, wicked, cruel, stupid, tired* могут образовывать степени сравнения как синтетическим, так и аналитическим способом:

Мягкий - *gentle*	*More gentle/ gentler*	*The most gentle/ the gentlest*
Пустой - *hollow*	*More hollow/ hollower*	*The most hollow/ the hollowest*
Умный – *clever*	*More clever/ cleverer*	*The most clever/ the cleverest*
Вежливый – *polite*	*More polite/ politer*	*The most polite/ the politest*
Общий – *common*	*More common/commoner*	*The most common/the commonest*

Почти для всех этих слов аналитический способ образования степеней сравнения в английском языке является более предпочтительным.

В английском языке прилагательные, образованные с помощью отрицательной приставки ***un-*** от двусложных прилагательных на ***-y,*** также могут иметь две формы степеней сравнения: *unhappy* - несчастливый, несчастный – *unhappier/ more unhappy – the unhappiest/ the most unhappy*.

При образовании степеней сравнения посредством суффиксов ***-er*** и ***-est*** соблюдаются следующие правила орфографии:

• если прилагательное заканчивается на немое ***-e***, то при прибавлении ***-er*** и - немое ***-e*** опускается: зрелый – *ripe – riper – the ripest;*

• если прилагательное в английском языке оканчивается на согласную с предшествующим кратким гласным звуком, то в сравнительной и превосходной степени конечная согласная буква удваивается: *big – bigger – the biggest; hot – hotter – the hottest; thin – thinner – the thinnest;*

• если прилагательное оканчивается на ***-y*** с предшествующей согласной, то в сравнительной и превосходной степени ***-y*** переходит в ***-i-***: *dirty – dirtier – the dirtiest; busy – busier – the busiest; easy – easier –*

the easiest. Если перед ***-y*** стоит гласная, то ***-y*** остается без изменения: веселый – *gay – gayer – the gayest.*

Большинство двусложных прилагательных английского языка, а также прилагательные, состоящие из трех и более слогов, образуют сравнительную степень при помощи слова *more-* более, а превосходную степень - при помощи *the most* - наиболее. Например: красивый – *beautiful – more beautiful – the most beautiful*, частый – *frequent – more frequent – the most frequent*.

Аналитический способ образования степеней сравнения при помощи слов *less* - менее и *the least* - наименее применим ко всем без исключения качественным прилагательным. Например: способный – *able – less able – the least able*; интересный – *interesting – less interesting – the least interesting.*

Прилагательные *good, much, many, late, near, old, far* образуют степени сравнения от разных корней:

Хороший - *good*	Лучше – *better*	Самый лучший, наилучший – *the best*
Плохой – *bad*	Хуже – *worse*	Самый худший, наихудший – *the worst*
Маленький – *little*	Меньше – *less*	Наименьший – *the least*
Старый – *old*	Более старый, старее – *older*	Самый старый, старейший – *the oldest*
	Старше – *elder*	Самый старший в семье – *the eldest*
Поздний- *late*	Более поздний – *later*	Самый поздний, последний (по времени) – *the latest*
	Последний из двух (по порядку) – *latter*	Самый последний (по порядку), прошлый – *the last*
Близкий – *near*	Более близкий – *nearer*	Самый близкий, ближайший – *the nearest*
		Следующий (по порядку), будущий – *the next*
Дальний, далекий - *far*	Более дальний (о расстоянии) – *farther*	Самый дальний (о расстоянии) – *the farthest*
	Более дальний, следующий (по порядку) – *further*	Самый далекий – *the furthest*

Прилагательные *far, old, near, late* имеют двойные степени сравнения. Формы *farther/ the farthest* употребляются в значении дальности расстояния:

We live in the farther side of the town. - Мы живем на дальнем конце города.

Формы *further/ the furthest* употребляются также в значениях: дальнейший, позднейший; дополнительный. Причем форме *further*, как правило, соответствует значение «дополнительный, еще один»:

Here is a further example. - Вот еще один пример.

Форма прилагательного *the eldest* - самый старший из членов семьи - употребляется только как определение к существительному. Форма *elder* - старший в семье - никогда не употребляется в сравнительных конструкциях:

My brother John is three years older (than I am). - Мой брат Джон на три года старше (чем я).

После прилагательных и наречий в сравнительной степени употребляется союз **than**; после прилагательных и наречий в превосходной степени часто употребляются предлоги **of**, **in**.

При сравнении признаков и особенностей предметов употребляются обороты **that of**, **those of** и слова **one**, **ones**, которые заменяют существительные во избежание их повторения:

The climate of our district is warmer than that of Moscow.	Климат нашей области теплее, чем климат Москвы.
My table is not so long as this one.	Мой стол не такой длинный, как этот стол.

Если при сравнении предметов (явлений) один объект уподобляется другому, то используется двойной союз *as… as* – так (такой) же ... как и, а прилагательное стоит в положительной степени:

He is **as** brave **as** a lion. - Он храбр, как лев.

Если сравниваемые предметы обладают одним и тем же признаком в разной степени, то в английском языке используется либо союз *than* - чем и прилагательное в сравнительной степени, либо двойной союз *not so… as - не такой... как* и прилагательное в положительной степени:

She is prettier **than** her sister is. - Она более хорошенькая, чем ее сестра.

Her sister is **not so** pretty **as** she is. - Ее сестра не такая хорошенькая, как она.

Если перед прилагательным в положительной степени, стоящим между союзом *as… as* употребляются счетные наречия: *half*

- в два раза меньше; *twice* - в два раза больше, или количественное числительное со словом *time* - раз, то такие сочетания переводится следующим образом:

half as much as - в два раза меньше, чем;
twice as much as - в два раза больше, чем;
three times as long as - в три раза длиннее, чем.

Перевод таких конструкций возможен и без союза «чем»:

The price of pure wool is **several times as high as** that of nylon.– Цена натуральной шерсти в несколько раз выше стоимости нейлона.

При характеристике одновременно происходящих изменений применяется сравнительная конструкция *the… the* - чем… тем… :

The warmer the weather, **the better** I feel. Чем теплее погода, тем лучше я себя чувствую.

The older I am, **the happier** I get. - Чем старше, тем счастливее я становлюсь.

The sooner you go away, the **better.** - Чем скорее ты уедешь, тем лучше.

§22. Наречие (The Adverb)

По своей морфологической структуре наречия подразделяются на простые и производные.

К простым наречиям относятся односложные наречия типа:

how *как*, **there** *там*, *туда*, **here** *сюда*, *здесь*, **then** *тогда*, *затем*, **soon** *скоро*.

Производные наречия образуются путем прибавления суффикса **-ly** к прилагательным, существительным и т.д.

Например:

slow – slow**ly**; bad – bad**ly**; day – dai**ly**

Имеются также составные наречия, которые образуются из двух слов: **somewhat**, **sometimes**, **somewhere**.

Наречия образуют степени сравнения по тем же правилам, что и прилагательные. Перед наречием в превосходной степени артикль не употребляется:

soon – sooner – soonest; bad – worse – worst

Иногда наречие совпадает по форме с прилагательным:

The table is **long**. (*прилагательное*)	Стол длинный.
He stayed there too **long**. (*наречие*)	Он находился там слишком долго.

§23. Числительное (The Numeral)

1. Количественные числительные. Простые числительные (1-12): one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve.

Числительные от 13 до 19 образуются с помощью суффикса **-teen**: 13 – thirteen, 14 – fourteen, 15 – fifteen, 16 – sixteen, 17 – seventeen, 18 – eighteen, 19 – nineteen.

Числительные, обозначающие десятки (20-90), образуются с помощью суффикса **-ty**: 20 – twenty, 30 – thirty, 40 – forty, 50 – fifty, 60 – sixty, 70 – seventy, 80 – eighty, 90 – ninety.

Чтение числительных: 23 – twenty-three; 45 – forty-five; 156 – one hundred and fifty-six.

Разряды чисел отделяются друг от друга запятой, а не точкой: 3,475 – three thousand four hundred and seventy-five; 5,486,352 – five million, four hundred and eighty-six thousand, three hundred and fifty-two.

Числительные 100 (hundred), 1,000 (thousand), 1,000,000 (million) ставятся во множественном числе (т.е. принимают окончание **-s**) только тогда, когда они употребляются как существительные: hundred**s** of workers *сотни рабочих*, thousand**s** of students *тысячи студентов*.

2. Порядковые числительные образуются путем прибавления суффикса **-th** к количественным числительным. Числительные: *первый* **(the first)**, *второй* **(the second)**, *третий* **(the third)** имеют особую форму.

Порядковые числительные обычно употребляются с определенным артиклем, который относится к последующему (или подразумеваемому) существительному.

Количественные числительные	*Порядковые числительные*
one (1)	the first (1^{st})
two (2)	the second (2^{nd})
three (3)	the third (3^{d})
four (4)	the fourth (4^{th})
five (5)	the fifth (5^{th})
six (6)	the sixth (6^{th})
seven (7)	the seventh (7^{th})
eight (8)	the eight (8^{th})
nine (9)	the ninth (9^{th})
ten (10)	the tenth (10^{th})
twenty-five (25)	the twenty-fifth (25^{th})
253 – two hundred and fifty-three	the two hundred and fifty-third

3. Дробные и смешанные величины. Числитель простых дробей выражается количественным числительным, а знаменатель – порядковым: ¼ - one fourth, ¾ - three fourths.

Если числитель больше единицы, то к слову знаменателя прибавляется суффикс **-s** ($^{2}/_{3}$ – two thirds; $^{7}/_{10}$ in. – seven tenths of an inch; $2\ ^{2}/_{7}$ in. – two and two sevenths inches).

Десятичные дроби отделяются от целого числа точкой, а не запятой (1.038 – one point nought thirty-eight).

§24. Оборот There is, There are

Этот оборот обычно стоит в предложении на первом месте и употребляется, когда говорится о наличии или отсутствии чего-либо в определенном месте или в определенное время.

На русский язык перевод предложений с оборотом **there is (was, will be)** следует начинать с обстоятельства места или времени, если они содержатся в предложении:

There were some students in the room.	В аудитории было несколько студентов.

В отличие от наречия **there** *там*, слово **there** в данном обороте на русский язык отдельно не переводится.

There will be some books there.	Там будет несколько книг.

Однако не всегда а предложениях с данным оборотом употребляются обстоятельства. Если обстоятельств места или времени нет, перевод следует начинать с глагола, например:

There are many kinds of molecules.	Существует много видов молекул.

Table 25

Порядок слов в предложениях с оборотом There is, There are

		There are	some students	in the room.	
		There are	not any (no) students	in the room.	
		There are	some students	in the room,	aren't there?
	Are	there	any students	in the room?	
Who	are	there		in the room?	
What students	are	there		in the room?	
Where	are	there	some students?		

Данный оборот употребляется не только с глаголом **to be**, но также и с различными другими глаголами существования и движения во многих временных формах, например:

There **may be** different types of drives.	Могут быть различные виды проводов.
There **appeared** new methods of coal preparation.	Появились новые методы обогащения угля.
There **have come** bad news.	Пришли плохие вести.

§25. Знаки препинания

В английском языке, как и в русском, точка ставится в конце предложения, запятою разделяются однородные члены предложения, двоеточие ставится перед перечислением, объяснением или перед цитатой, прямая речь берется в кавычки.

Однако в некоторых случаях употребление знаков препинания в русском и английском языках не совпадает. Придаточные *дополнительные* и *определительные* предложения (за исключением описательных определительных предложений) *запятой не отделяются*:

I know (that) he will come tomorrow.	Я знаю, что он завтра придет.

The tall man who looked like a sailor was his friend. (ограничительное определительное предложение)

His friend was a tall man, who looked like a sailor. (описательное определительное предложение)

Обстоятельственные придаточные предложения обычно отделяются запятой, когда они употребляются перед главным предложением:

If I see him, I shall tell him about it.

Обстоятельства в английском языке часто отделяются запятой, но это выделение носит интонационный характер.

In 1974, he entered the Institute.

Перед прямой речью в английском языке ставится запятая или двоеточие:

He asked me, “Are you a student?”

При передаче отрывистой речи употребляется многоточие или тире:

I know nothing about it – I have not been there.

§26. Виды предложений

Предложения в английском языке подразделяются на *простые* и *сложные*. Сложные предложения, в свою очередь, подразделяются на *сложносочиненные* и *сложноподчиненные*.

Сложносочиненные предложения состоят из равноправных простых предложений, которые соединяются союзами **and** *и*, **but** *но*, **both … and** *так и*, **neither … nor** *ни .. ни*, **however** *однако*, **yet** *однако*, **still** *все же*, **so** *итак*.

English life is full of traditions, and the English like traditions.	Жизнь англичан полна традиций, и англичане любят традиции.

Сложноподчиненные предложения, состоящие из главных и придаточных предложений, подразделяются на следующие виды:

1) Придаточные *подлежащие* (вводятся союзами **that** *что*, **whether** *ли*, союзными словами **who (whom), whose, what, which, where, when, how, why**):

That he is one of the best students is a well-known fact.	То, что он является одним из лучших студентов, - хорошо известный факт.

2) Придаточные *предикативы* (те же союзы и союзные слова, что и для придаточных подлежащих):

This is **what I have learned at the University.**	Вот, что я узнал в университете.

3) Придаточные *дополнительные* (вводятся теми же союзами и союзными словами, что и придаточные подлежащие, или без союзов):

I didn’t know **(that) he lived in our town.**	Я не знал, что он живет в нашем городе.

4) Придаточные *определительные* (вводятся относительными местоимениями и наречиями **who, whom, whose, what, which, that, where, when, why** или без союзов):

The house **(which) we live in** is a new one.	Дом, в котором мы живем, новый.

5) Придаточные *обстоятельственные*:

а) обстоятельства *времени* (вводятся союзами **when, whenever, while, before, after, as soon as** и др.):

Whenever I come to him, he is always reading.	Когда бы я не пришел к нему, он всегда читает.

б) обстоятельства *места* (вводятся союзами **where, wherever** *где бы ни*):

He went **where he had been sent to.**	Он поехал туда, куда его послали.

в) обстоятельства *образа действия и сравнения* (вводятся союзами **as** *как*, **as if, as though** *как будто*):

He walked hastily, **as if he was in a great hurry.**	Он шел торопливо, как будто он очень спешил.

г) обстоятельства *причины* (вводятся союзами **as, because, since**):

I missed lessons, **because I was not well.**	Я пропустил занятия, потому что я чувствовал себя плохо.

д) обстоятельства *следствия* (вводятся союзами **so … that, so that**):

The book was **so** interesting **that I read it the whole night.**	Книга была настолько интересная, что я читал ее всю ночь.

е) обстоятельства *цели* (вводятся союзами **that, in order that, so that** *чтобы*, **lest** *чтобы не*):

Write down my phone number, **lest you should forget it.**	Запишите мой номер телефона, чтобы вы не забыли его.

ж) *уступительные* обстоятельственные предложения (вводятся союзами **though (although)** *хотя*, **however** *как бы ни*, **whoever** *кто бы ни*, **whatever** *что бы ни*, **whichever** *какой бы ни*):

Although the translation was rather difficult, the students made it well.	Хотя перевод был довольно трудный, студенты сделали его хорошо.

з) *условные* обстоятельственные предложения (conditional sentences).

Условным предложением называется такое сложное предложение, в котором действие, выраженное в главном предложении, зависит от определенных условий, выраженных в придаточном предложении.

1. Если он придет завтра, я помогу ему. (*реальное условие*)

2. Если бы он пришел завтра, я бы помог ему. (*маловероятное условие*)

3. Если бы он пришел вчера, я бы помог ему. (*нереальное условие*)

Условные предложения второго и третьего типа в русском языке объединяются в одну группу по конструкции, а оттенок маловероятности или нереальности передается обстоятельственными словами (завтра, вчера и т.п.).

В английском языке условные предложения маловероятной возможности отличаются от предложений нереальной возможности по конструкции, и, следовательно, в английском языке имеется 3 типа условных предложений:

1. Условные предложения *реальной* возможности:

If he **comes** tomorrow, I **shall help** him.	Если он придет завтра, я помогу ему.

2. Условные предложения *маловероятной* возможности:

If he **came** tomorrow, I **should help** him.	Если бы он пришел завтра, я бы помог ему.

3. Условные предложения *нереальной* возможности:

If he **had come** yesterday, I **should have helped** him.	Если бы он пришел вчера, я бы помог ему.

В английском языке допускается инверсия для всех условных предложений 3-го типа и для тех условных предложений 2-го типа, которые имеют глагол **to be** или **to have** в придаточном предложении.

Инверсия заключается в том, что союз **if** опускается, а первый элемент глагола-сказуемого в придаточном предложении ставится перед подлежащим:

If I **were** in your place, I should never do it.
Were I in your place, I should never do it.
If I **had seen** him, I should have told him about it.
Had I **seen** him, I should have told him about it.

§27. Таблица неправильных глаголов английского языка

infinitive	past simple	past participle	перевод
be	was/were	been	быть
beat	beat	beaten	бить, колотить
become	became	become	становиться
begin	began	begun	начинать
bend	bent	bent	сгибать, гнуть, изгибать
bet	bet	bet	спорить, держать пари
bite	bit	bitten	кусать
blow	blew	blown	дуть, выдыхать
break	broke	broken	ломать, разбивать, разрушать
bring	brought	brought	приносить, привозить, доставлять
broadcast	broadcast	broadcast	вещать, передавать по радио

build	built	built	строить, сооружать
burst	burst	burst	лопаться, разрываться
buy	bought	bought	купить, покупать, приобретать
catch	caught	caught	ловить, поймать, схватить
choose	chose	chosen	выбирать, избирать
come	came	come	приходить, подходить
cost	cos	cost	стоить, обходиться
cut	cut	cut	резать, разрезать
deal	dealt	dealt	иметь дело, распределять, поступать
dig	dug	dug	копать, рыть
do	did	done	делать, выполнять
draw	drew	drawn	рисовать, чертить
drink	drank	drunk	пить
drive	drove	driven	ездить, подвозить, водить (авто)
eat	ate	eaten	есть, поглощать, поедать
fall	fell	fallen	падать
feed	fed	fed	кормить
feel	felt	felt	чувствовать, ощущать
fight	fought	fought	драться, сражаться, воевать
find	found	found	находить, обнаруживать, заставать
fly	flew	flown	летать
forbid	forbad/forbade	forbidden	запрещать, не позволять, препятствовать
forget	forgot	forgotten	забывать о (чём-либо)
forgive	forgave	forgiven	прощать

freeze	froze	frozen	замораживать, сковывать, морозить
get	got	got	получать, добираться
give	gave	given	дать, подать, дарить
go	went	gone	идти, двигаться
grow	grew	grown	расти, вырастать
hang	hung	hung	вешать, развешивать, висеть
have	had	had	иметь, обладать
hear	heard	heard	слышать, услышать
hide	hid	hidden	прятать, скрывать
hit	hit	hit	ударять, поражать
hold	held	held	держать, удерживать, задерживать
hurt	hurt	hurt	ранить, причинять боль, ушибить
keep	kept	kept	хранить, сохранять, поддерживать
kneel	knelt, kneeled	knelt, kneeled	становиться (стоять) на коленях
know	knew	known	знать, разбираться, иметь представление
lay	laid	laid	класть, положить, покрывать
lead	led	led	вести за собой, сопровождать, руководить
leave	left	left	покидать, уходить, уезжать, оставлять
lend	lent	lent	одалживать, давать взаймы (в долг)
let	let	let	позволять, разрешать
lie	lay	lain	лежать

light	lit	lit	защигать, светиться, освещать
lose	lost	lost	терять, лишаться, утрачивать
make	made	made	делать, создавать, изготавливать
mean	meant	meant	значить, иметь в виду, подразумевать
meet	met	met	встречать, знакомиться
mistake	mistook	mistaken	ошибаться
pay	paid	paid	платить, оплачивать, рассчитываться
put	put	put	ставить, помещать, класть
read	read	read	читать, прочитать
ride	rode	ridden	ехать верхом, кататься
ring	rang	rung	звенеть, звонить
rise	rose	risen	восходить, вставать, подниматься
run	ran	run	бежать, бегать
say	said	said	говорить, сказать, произносить
see	saw	seen	видеть
seek	sought	sought	искать, разыскивать
sell	sold	sold	продавать, торговать
send	sent	sent	посылать, отправлять, отсылать
set	set	set	устанавливать, задавать, назначать
sew	sewed	sewn/sewed	шить, пришивать
shake	shook	shaken	трясти, встряхивать
shine	shone	shone	светить, сиять, озарять

shoot	shot	shot	стрелять
show	showed	shown/showed	показывать
shrink	shrank/shrunk	shrunk/shrunken	сжиматься, сокращаться
shut	shut	shut	закрывать, запирать, затворять
sing	sang	sung	петь, напевать
sink	sank	sunk	тонуть, погружаться
sit	sat	sat	сидеть, садиться
sleep	slept	slept	спать
slide	slid	slid	скользить
speak	spoke	spoken	говорить, разговаривать, высказываться
spend	spent	spent	тратить, расходовать, проводить (время)
spit	spat	spat	плевать, плеваться
split	split	split	раскалывать, расщеплять
spread	spread	spread	распространять, простираться
spring	sprang/sprung	sprung	возникнуть, вскочить
stand	stood	stood	стоять
steal	stole	stolen	воровать, красть
stick	stuck	stuck	втыкать, приклеивать
sting	stung	stung	жалить, укусить
stink	stank/stunk	stunk	вонять
strike	struck	struck/stricken	ударять, бить, поражать
swear	swore	sworn	клясться, присягать
sweep	swept	swept	мести, подметать, смахивать
swim	swam	swum	плавать, плыть

swing	swung	swung	качать, раскачивать, размахивать
take	took	taken	брать, хватать, взять
teach	taught	taught	учить, обучать
tear	tore	torn	рвать, отрывать
tell	told	told	рассказывать
think	thought	thought	думать, мыслить, размышлять
throw	threw	thrown	бросать, кидать, метать
understand	understood	understood	понимать, постигать
wake	woke	woken	просыпаться, будить
wear	wore	worn	носить (одежду)
weep	wept	wept	плакать, рыдать
win	won	won	победить, выиграть
write	wrote	written	писать, записывать

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