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Кафедра «Иностранные языки»

Учебно-методическое пособие

«Лексические и грамматические единицы и понятие научно-лингвистических категорий в профессиональной деятельности (английский язык)»

по дисциплине

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Аннотация

Учебное пособие рассчитано на студентов первого курса факультетов технических и экономических специальностей и отвечает требованиям программы Министерства Высшего Образования Российской Федерации. Пособие включает два составных элемента (модуля): Topics & vocabulary и Grammar practice.

Учебное пособие создано на кафедре иностранных языков ДГТУ. Все модули состоят из разделов (Units). В начале каждого раздела первого модуля дается тема, вопросы для вовлечения, обучающегося в данную тематику, далее следует список лексики по заданной теме. Затем идет основной текст, связанный с изучаемой темой, вопросы, контролирующие понимание текста, и/или упражнения, направленные на отработку навыков говорения.

Каждый раздел включает в себя профессионально-ориентированные тексты для перевода с английского языка на русский со словарем, реферирования и изучающего чтения. Второй модуль направлен на развитие грамматических навыков, включает грамматические упражнения, направленных на отработку и закрепление материала.

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Section 1

TOPICS & VOCABULARY

Unit I. Civil Engineering

Text 1. Civil Engineering

1. Before you start:

1. What made you decide to become a civil engineer?

2. What do you believe should be the number-one priority for any civil engineer?

2. Read and translate the text using the dictionary.

New vocabulary:

civil Engineering – гражданское строительство; строительство

to span – зд. охватывать, объединять;

environmental issues – экологические проблемы;

power generation – производство энергии;

fieldwork – работа в реальных условиях эксплуатации; стажировка;

to design – проектировать;

initial design – эскизное проектирование;

site – строительная площадка;

maintenance of the project – ремонт и содержание объекта; техобслуживание;

power generation facilities – электроэнергетическая установка;

water treatment – оборудование для обработки воды;

waste management – удаление и переработка отходов;

structural soundness – отсутствие дефектов в структуре;

local codes – местные нормы и правила.

Civil engineering is one of the oldest engineering disciplines, since civil engineers of one form or another have been around ever since humans started building major public works such as roads, bridges, tunnels, and large public buildings. It is also an incredibly broad discipline, spanning treatment of environmental issues, transportation, power generation, and major structures. To become a civil engineer, a person must typically study engineering at a university and then participate in fieldwork for practical training. Many nations also require that students pass a competency exam to ensure that they will be able to design and build safe, stable structures.

There are many branches of civil engineering, and a wide range of specialties. Some engineers focus on conception and initial design of a project, analyzing the site, the needs, and the resources to come up with a workable project plan. Others specialize in contracting, physically building the structure, managing the site crew, and handling materials and supply. In other cases, civil engineers focus on maintenance of the project after it is completed, to make sure that it is safe and useful.

Most people pick a focus while they are receiving an education. Engineers who focus on transportation, for example, might choose to specialize in building bridges, tunnels, and roads. Others might lean towards power generation facilities, water treatment, waste management, construction of light railways and subways, or other disciplines. In all cases, extensive training is undertaken so that the prospective civil engineer understands his or her chosen field in depth. Behind every major public works is a team of civil engineers.

One of the primary concerns of civil engineering is public safety and health. A value is also placed on building structures that are functional, efficient, and also aesthetically pleasing. Structural soundness, conformity with local codes, and functionality are all issues which are faced in the discipline. Some civil engineers work directly for the public in the form of government agencies, while others find employment with public firms.

Education does not end with a degree and a course of fieldwork with trained and experienced civil engineers. Continuing education is also an important part of this discipline. As advances are made in

the field, engineers are expected to keep pace with them, especially when the advances improve safety for workers and the public. There are many trade journals and annual conferences in the field to keep engineers updated.

3. Find correct answers for the questions.

1. What is engineering?
2. What areas of activity does civil engineering cover?
3. What are the main subdivisions of civil engineering?
4. Where can civil engineers work?
5. What's the most proper place of work for the engineer?
6. Which profession of civil engineering is the most prestigious, demanded and well-paid in modern society in your opinion?
7. What kind of engineering would you like to specialize in?

Text 2. From the history of building

1. Before you start:

1. How did people construct their homes in early times?
2. How important is to protect old buildings?

2. Read and translate the text using the dictionary.

New vocabulary:

art of building – искусство строить;
brick – кирпич;
to borrow – (from) занимать, заимствовать;
concrete – бетон;
dome – купол;
to dwell – жить, проживать;
tomb – могила;
embody – олицетворять, воплощать;
to erect – возводить, строить;
to commemorate – увековечивать память;
to find (out) – обнаружить, найти;
kiln – обжиговая печь, сушильная печь;
pile – свая, столб;
pillar – столб, колонна;

harbour – гавань; порт;
lime – известь;
remains – остатки, руины;
well – колодец, скважина;
tribe – племя.

Many thousands of years ago there were no houses such as people live in today. In hot countries people sometimes made their homes in the trees and used leaves to protect themselves from rain or sun. In colder countries they dwelt in caves. Later people left their caves and trees and began to build houses out of different materials such as mud, wood or stones.

Later people found out that bricks made of mud and dried in the hot sunshine became almost as hard as stones. In ancient Egypt especially, people learned to use these sun-dried mud bricks. Some of their buildings are still standing after several thousands of years.

The ancient Egyptians discovered how to cut stone for building purposes. They erected temples, palaces and huge tombs. The greatest tomb is the stone pyramid of Khuful, king of Egypt. The ancient Egyptians often erected their huge constructions to commemorate their kings or pharaohs.

The ancient Greeks also understood the art of building with cut stone, and their buildings were beautiful as well as useful. They often used pillars, partly for supporting the roofs and partly for decoration. Parts of these ancient buildings can still be seen today in Greece.

Whereas the ancient Greeks tried to embody the idea of harmony and pure beauty in their buildings, the Roman architecture produces the impression of greatness.

The Romans were great bridge, harbour and road builders. In road works the Romans widely used timber piles. They also erected aqueducts, reservoirs, water tanks, etc. Some of their constructions reused till now. It is known that the manufacture of lime is one of the oldest industries used by man. Lime is a basic building material used all over the world as today so in the ancient world. There are many things today in Britain to remind the people of the Romans: towns, roads, wells and the words.

By the way, Hadrian, the Roman emperor, was also the one who suggested the absolutely new for that time idea of building the Pantheon with a dome. He constructed it, and alongside with a number of other outstanding buildings such as the Colosseum and the Baths of Caracalla, it is still there in Rome.

The Romanian period was followed by other periods each of which produced its own type of architecture and building materials. During the last hundred years many new methods of building have been discovered. 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 building, the frame of it is first built in steel and then the building is completed in concrete. Concrete is an artificial kind of stone, much cheaper than brick or natural stone and much stronger. The earliest findings of concrete building fragments belonging to prehistoric times were discovered in Mexico and Peru. The Egyptians in the construction of bridges, roads and town walls employed it. There are evidences that ancient Greeks also used concrete in the building purposes. The use of concrete by the ancient Romans can be traced back as far as 500 B.C.

3. Find in the text equivalent English phrases to the following Russian:

доисторические времена;
римский период;
бесполезность использования стали;
в качестве строительного материала;
искусственный материал;
они первыми использовали;
недавние открытия;
древние здания.

Text 3. The profession of a builder

1. Before you start:

1. What building professions do you know?
2. Why does the profession of a builder attract you?

2. Read and translate the text using the dictionary.

New vocabulary:

on a large scale – в крупном масштабе;
prefab – сборная конструкция;
to construct – строить;
dams – дамбы; плотины;
reservoir – водоём; водохранилище;
irrigated areas – орошаемая площадь;
welder – сварщик;
bricklayer – кирпичник;
mortar – жидкий цементный раствор;
trowel – лопатка; мастерок;
carpenter – плотник;
mason – каменщик;
plumber – водопроводчик;
plasterer – штукатурщик.

The building profession attracts many young men and women nowadays. In our country housing construction is carried out on a large scale. Hundreds of factories produce prefab panels. Builders construct and reconstruct residential and industrial buildings, bridges, schools, palaces of culture, etc. They build tunnels, canals, power stations, dams and reservoirs. They also construct aqueducts to store and transport water for populated areas and to irrigate desert lands. The distribution of water in irrigated areas is based on annual plans. Very many irrigation systems are built and modernized. Hydrotechnicians erect dams, reservoirs and pumping stations.

Builders and engineers design and erect houses, schools, factories and other buildings. Builders, as we know, assemble a house from prefabricated units which are delivered to the construction site. A welder then welds the units. Builders use building equipment and operate it by electricity or compressed air. Powerful cranes lift heavy building materials and the workers put them into position. Nowadays builders use a great variety of materials. Civil engineers and architects have a common aim – to provide people with all modern conveniences, such as running water, gas, electricity, central heating. A sanitary engineer

protects the quality of water. He treats and purifies this water when it is used for domestic purposes. An architect designs buildings. He must receive a great deal of scientific training connected with his profession. He must know mathematics as well as properties of building materials. He must need some knowledge of sculpture, painting, design, mechanical engineering, geography, city planning, etc. An engineer prepares the plans and specifications and usually supervises the construction of the project. He must use engineering fundamentals to improve the quality and at the same time reduce the cost of construction. An engineer must be familiar with construction methods.

Different workmen are employed in building a house. A bricklayer is a tradesman who builds and repairs brickwork, who builds walls and other parts made of bricks. He lays the bricks one on the top of another and puts mortar between them with a trowel.

A carpenter is the man who does the rough woodwork of the house. He erects wood frames, fixes wood floors, stairs and window frames. Doors, windows, frames and stairs all come to the building sites on lorries. They are ready to be fixed in the houses.

A mason is a stone worker. He builds the foundation. In Scotland and the USA a brick worker is usually also a mason. Plumbers work on all the water pipes of the house. They lay pipes to carry clean water into the house from the water main. Plumbers also lay pipes to carry waste water away to the sewers. They fix all the baths, water pipes and the sanitary installations.

Then the carpenters finish the woodwork in the house and leave it ready for the painters and the decorators. When all the wires and pipes are in place the house is ready for the plasterers. The plasterers put plaster or cement over all the walls and ceilings and make them smooth. The walls are then painted, papered or whitewashed.

3. Find in the text equivalent English phrases to the following Russian:

производить сборные конструкции;
строить электростанции;
орошать пустынные земли;
водоотливная установка (водокачка);

снижать цены на строительство;
строительная площадка;
класть жидкий цементный раствор;
отводить сточные воды в канализацию.

Text 4. Engineering

1. Before you start:

1. What is engineering?
2. What is a professional engineer? What engineering skills should a person possess?

2. Read and translate the text using the dictionary.

New vocabulary:

engineering – проектирование; инженерное дело;
materials' properties – свойства материала;
variable porosity – изменяющаяся пористость;
thermal conductivity – теплопроводность;
keep up with changes – не отставать (быть в теме) от перемен;
professional skill – профессиональное мастерство;
ferro-concrete – железобетон.

Engineering is one of the most ancient occupations in history. The skilled technicians who erected the marvelous buildings of the ancient world were the civil engineers of their time.

Specialists in engineering materials have taken a new approach to the problem of the permanent nature of materials' properties. It is useful to have materials whose properties can be changed and controlled. That's why specialists have to create materials with variable porosity, elasticity and thermal conductivity.

The principal work of the engineer is design. He has to design machines, structures, equipment, products, etc. The engineer must combine many of the characteristics of the scientist, research engineer and technologist; he must preserve and enrich the best traditions of national and foreign architecture. Such work requires creative ability and

knowledge of scientific principles. The engineer must also have an understanding of the various properties and available materials. They must keep up with changes in their profession.

Apart from professional skill, an architect must have an extensive knowledge of all spheres of the cultural life of the people. He must know all kinds of building materials and technology provided by the building industry of today.

Specialists in engineering materials create new materials with diverse properties: variable porosity, elasticity and thermal conductivity. With glass and ferro – concrete as their construction materials and with modern synthetic materials at their disposal for interior decoration. Russian architects and construction workers have to erect structures which must represent a harmonious blend of national and modern style.

3. **Find correct answers for the questions.**

1. How do you understand the profession of engineering?
2. What professional skills should engineers possess?
3. What tasks do engineers have to cope with?

Text 5. The construction Industry

1. Before you start:

1. What are the main characteristics of construction industry?
2. Why are you interested in construction industry?

2. Read and translate the text using the dictionary

New vocabulary:

civil engineering – гражданское строительство;
heavy engineering – тяжѐлое машиностроение;
one-off design – индивидуальный проект;
demarcation – разделение;
traditional arrangement – традиционные договоренности.

The construction industry is concerned with the planning, regulation, manufacture, fabrication, erection and maintenance of buildings and other structures. It includes the separate areas of activity of build

ing, civil engineering and heavy engineering. Whilst the demarcation between these broad sectors is blurred, the majority of architects are involved on building projects in their various forms. There are particular characteristics that distinguish the construction industry from all others including:

– the physical nature of the product;

– the product is normally manufactured on the clients premises (i.e. the construction site);

– most of the products are one-off designs;

– the traditional arrangement separates design from manufacture;

– it produces investment rather than consumer goods;

– its activities may be affected by the vagaries of the weather;

– its processes include a complex mix of different materials, skills and trades.

3. Find correct answers for the questions.

1. What is the construction industry concerned with?
2. What does the construction industry include?
3. What are the particular characteristics of the construction industry?

Unit II. Building Materials
Traditional building materials

Text 1. Stone

1. **Before you start:**
1. What kind of traditional building materials do you know?
2. What materials are needed to build a building?

2. **Read the text and then match the two parts of the sentences**

New vocabulary:

building materials – строительные материалы;
natural – естественные;
man-made – сделанный руками человека, искусственный;
stone – камень;
timber – древесина;
concrete –бетон;
steel – сталь;
fence – забор; изгородь;
burnt gypsum – обожжённый гипс;
lime – известь.

Building materials can be divided into two main groups: natural and man-made. Stone and timber are natural materials, used by man since ancient times. Man-made materials include bricks, cement, concrete, steel, glass, metal and more modern materials including plastic and synthetics.

Stone walls are one of the oldest construction methods known to mankind. The first stone walls were made laying up stones without any mortar. With this method stones are held together by gravity. These walls are usually larger at the base. In Ireland and north-eastern UK counties this kind of wall was made by farmers to create fences. It was quite a long and labour-intensive method, but with no costs. When cement appeared, the first mortared stone walls were created, where cement paste fills the gaps between the stones. The first cements

were made using burnt gypsum or lime, mixed with water. Concrete includes Portland cement mixed with sand, gravel and water, which makes it resistant to cracking. To make it even more resistant, steel reinforcing bars can be added. Most stone walls today are made using this method, because it is fast and cheap.

1. The first stone walls were made…
2. When cement appeared…
3. The first cements were created using…
4. Concrete is Portland cement…
5. Steel reinforcing bars can be added…

a) burnt gypsum or lime, mixed with water.
b) to make concrete even more resistant;
c) the first mortared stone walls were created;
d) without any mortar;
e) mixed with sand, gravel and water.

Text 2. Timber

1. **Before you start:**

1. What are the principle properties of timber?
2. Where can we use timber?

2. **Read and translate the text using the dictionary.**

New vocabulary:

timber framing – деревянная каркасная конструкция
wooden pegs – деревянные колышки
dimension – размеры
nail – гвоздь
insulating material – электроизоляционный материал
energy-efficient – энергосберегающий

Timber framing and conventional wood framing are two different forms of construction. Timber framed structures use fewer, larger timbers with dimensions from 15 to 30 cm and mortice and tenon or wooden pegs as fastening methods, whereas conventional wood-

framed buildings have a greater number of timbers with dimensions from 5 to 25 cm, and nails or other mechanical fasteners are used to join the timbers. Today timber structures are often surrounded in manufactured panels, such as Structural Insulating Panels (SIPs). They are made up of two rigid wooden-based composite materials with a foamed insulating material inside. This method is used because these structures are easier to build and they provide more efficient heat insulation. Timber-framed construction offers a lot of advantages. It is kind to the environment (when the wood used is taken from sustainable forests) and the frames can be put up quickly. Its design is elegant and simple, and also both practical and adaptable. It can give a house character, both inside and outside. Thanks to its strength, large open spaces can be created, something which is not so easy to obtain with other techniques. It is very versatile, so timber-framed houses can also be clad with stone or brick. This offers two more advantages: the house can blend in with the surrounding area (both urban and rural) and it is very energy-efficient. Timber is also cheaper than other materials.

3. Find correct answers for the questions.

1. Do timber-framed structures use larger or smaller timbers compared to conventional wood framing?
2. Which fastening methods do the two different methods use?
3. What structures have been recently used? How are they made up?
4. What are the advantages of this method?

Text 3. Brick

1. Before you start:

1. What are the principle properties of brick?
2. Where can we use brick?

2. Read the text and then write a list of the advantages and disadvantages offered by brick.

New vocabulary:

masonry construction – каменная кладка (конструкция);

retaining walls – опорные стены;
durability – прочность;
cracking – трещинообразование;
heat resistant – жароупорный; теплонепроницаемый;
earthquake – землетрясение.

Masonry construction is a method that has been used for centuries around the world. It is usually used for walls of buildings, retaining walls and monuments. The most frequent type of masonry is brick, but concrete block is also becoming more and more popular. Brick was one of the first building materials that man used and has been used since the times of the ancient Egyptians because it offers a great number of advantages. First of all, it has an affordable price and it is made of accessible raw material, which has long durability and good insulating properties. It is a strong material and is perfect for load-bearing systems where the loads are compressive. It is the size of a man's hand and therefore simple to use. The appearance of the final work depends on the ability and expertise of the bricklayer. Another advantage of using brick is that, like stone, it offers increased comfort in the heat of the summer and the cold of the winter. Being heat resistant, this material also offers good fire protection.

One of the disadvantages of using this material is that masonry must be built on a firm foundation to prevent settling and cracking, and in the presence of expansive soils the foundation may need to be elaborate. Moreover, this is a heavy material, consequently the structural requirements will have to be increased, especially if the area is subject to earthquakes.

Advantages	Disadvantages
affordable price	

Modern building materials

Text 4. Steel

1. Before you start:

1. What kind of modern building materials do you know?
2. What are the main properties of steel?

2. Read the text and complete the sentences with words from the text.

New vocabulary:

resistant – обладающий способностью сопротивляться;
rusting – ржавление; коррозия;
construction site – строительная площадка;
carbon – уголь;
alloy – смесь, примесь;
warehouse space – складское помещение.

Steel is resistant to corrosion, rusting and general deterioration. It can be used both for exterior as well as internal infrastructure. Compared to conventional concrete buildings, steel buildings offer a longer lifetime and they cause less harm to the environment thanks to the resistance and durability. Because steel buildings are usually pre-fabricated or made in sections and parts that are assembled on the construction site, they are cheaper than conventional buildings.

The quantity of carbon contained in steel determines whether the alloy is hard or soft. Nowadays steel buildings are often appreciated for their design. In fact, the flexibility of this material allows different forms and shapes. More than any other building material, steel has a high strength-to-weight ratio. This means that it is easy and cheap to span large distances elegantly eliminating columns. Thanks to this, it is easier to subdivide and customise office- and warehouse space.

1. Steel can be used both for the exterior and the interior _____ of a building.
2. Steel is _____to corrosion, rusting and general deterioration.

3. Steel buildings have a longer _____ compared to conventional concrete buildings.

4. Steel buildings are usually _____ than_____buildings.

5. It is easy and cheap to span large _____ elegantly.

6. By eliminating _____, it is easier to subdivide and customise office and warehouse space.

Text 5. Glass and metals

1. Before you start:

1. What are the principle properties of glass and metals?
2. Where can we use glass and metals?

2. Read the text and match each paragraph with a heading:

A. Advantages and disadvantages of different kinds of metals.
B. Transparent buildings: problems and possible solutions.
C. An interesting experiment.

New vocabulary:

glass – стекло;
contemporary architecture – современная архитектура;
beam – балка;
reinforced concrete – железобетон;
elastic modulus – модуль упругости.

1. Glass is a fashionable material in contemporary architecture. Transparent buildings and structures are very popular in contemporary architecture. Structural glass components such as columns and beams are often required, but this material seems structurally unsafe because of its brittleness. For this reason a new construction technique has been developed using:

• very long overlapping glass segments to create glass beams. These are made by bonding the segments adhesively;

• a small stainless steel profile that has been added to the layout of the glass beam to reinforce it.

2. To prove that glass structures can be as safe as reinforced concrete, an experimental transparent pavilion has been designed (with di

mensions 9 x 9 x 3.6 m_3) that combines a number of innovative ideas. Many different kinds of glass and glass systems have been used. The outermost and triple-layered insulating glass units have been tempered and sometimes laminated and some glass has also been coated with solar control glass to reflect some of the unwanted sunshine outwards. In other cases glass that can be heated electrically and glass panes free of iron oxide have been used to make the inside light more natural.

3. Painted, stainless, hot dip galvanised and weather resistant steel, as well as aluminium, have also been used for supporting structures. Aluminum has some advantages (it is light, resistant to corrosion and easy to work), but also some disadvantages (its thermal expansion and conductivity are high and it has low elastic modulus and fire resistance). Stainless steel also offers some advantages (it has good fire resistance and it is easy to keep) but its high price is a major disadvantage. Both hot dip galvanised and painted steel are not as expensive, but they are difficult to work on site and are not resistant to corrosion.

3. Read the text again and decide if these statements are true (T) or false (F).

1. Glass is very popular in contemporary architecture.
2. There is no way to create a glass structure that is as safe as reinforced concrete.
3. A transparent pavilion has been recently designed as an experiment that uses some innovative ideas.
4. There is only one type of glass in this pavilion.
5. Glass has also been used for supporting structures.
6. Hot dip galvanised steel is not resistant to corrosion.

Text 6. Plastic

1. **Before you start:**

1. What are the principle properties of plastic?
2. Where can we use plastic?

2. Read the text and translate it with a dictionary.

New vocabulary:

recycle – перерабатывать;
noise protection – шумозащита;
wall covering – облицовка стены;
chemical resistance – устойчивость к химическому воздействию.

Plastic products offer a number of ecological advantages: they save resources, have a low maintenance cost and can be recycled. Furthermore they contribute to save energy (plastic foams are used for thermal insulation in many applications). Plastic is also useful for noise protection and insulation. The main fields of application of these materials are pipes, insulation, wall covering, flooring (both in houses and in public areas) and, quite recently, window frames (made of PVC). PVC stands for Polyvinyl Chloride and it is the plastic which has seen the most rapid growth in recent times in industry. PVC is often used in piping systems because of its good chemical resistance to corrosive fluids. PVC pipes are used for a great number of applications: to drain waste, for natural gas distribution, for electrical and communications wiring, for municipal water. As it is the newest primary construction material and entirely man-made, plastic is extremely versatile. Improvements made through research have increased its acceptance among designers, contractors and building code officials.

3. Read the text again and answer the questions.

1) What are the advantages offered by plastic products?
2) How can plastic save energy?
3) What is plastic insulation useful for?
4) What are the main fields of application of plastic?
5) What does PVC stand for?
6) What are PVC pipes used for?

Text 7. Sustainable materials

1. Before you start:

1. What are the different types of sustainable materials?
2. What advantages have sustainable materials?

2. Read and translate the text using the dictionary.

New vocabulary:

pollution – загрязнение окружающей среды;
ecological emergency – чрезвычайная экологическая ситуация;
straw – солома;
clay – глина;
cork – кора пробкового дерева;
wax – воск;
varnish – лак.

Due to the rise in global population and prosperity over the last few decades, one of the consequences of this phenomenon has been the increase in volume and variety of the materials used (such as raw materials, food, manufactured products and waste) with a consequent increase in the transport distances. This has created a series of negative effects on the environment, especially different kinds of pollution, leading to an ecological emergency and growing preoccupation about health. This is why the aim of eco-design is to create buildings with low ecological impact, where people can live in a comfortable, healthy way. This is possible by using building materials that are traditionally considered eco-friendly and-sustainable: timber from forests that have been certified; quickly renewable plant materials (such as straw or bamboo); some typical traditional materials such as brick, stone, clay and cork; non-toxic, renewable and recyclable materials (natural paints, waxes and varnishes). Waste materials can also be reused as a resource for construction purposes.

3. Read the text again and answer the questions.

1. What has happened to population and wealth in the last few decades?
2. What has been one of the results of this?
3. What is the aim of eco-design?
4. Can you name some eco-friendly and sustainable materials you have found in the text?

Unit 3. Automation of Technological Process and Production

Text 1. Computer System

1. Before you start:

1. How can we use computer system in architecture?
2. How can we improve our computer skills?

2. Read and translate the text using the dictionary.

New vocabulary:

computer system – компьютерная система;
converter – преобразователь;
data processing – обработка информации;
data – данные;
development – развитие;
device – устройство;
hardware – аппаратура, «железо»;
high-speed – высокоскоростной;
industry-standard – промышленный;
item – отдельный элемент, единица;
lengthy – сложные, долгие;
line printers – линейные принтеры;
operating system – операционная система;
oscilloscope device – осцилоскопическое устройство;
peripheral devices – периферийные устройства;
printing device – печатающее устройство;
purpose – цель, задача;
set – набор;
software – программное обеспечение;
storage medium – устройство хранения;
terminal device – терминал;
to add – добавлять;
to allow – позволять;
to include – включать в себя;

to input – вводить;
to output – выводить;
to perform – выполнять, совершать;
to process – обрабатывать;
to provide – обеспечивать;
to require – требовать;
to retrieve – извлекать, выискивать;
to store – сохранять;
tool – инструмент;
typewriter – вводящее текст устройство.

A computer system is a collection of components that work together to process data. The purpose of a computer system is to make it as easy as possible for you to use a computer to solve problems. A functioning computer system combines hardware elements with software elements. The hardware elements are the mechanical devices in the system, the machinery and the electronics that perform physical functions. The software elements are the programs written for the system; these programs perform logical and mathematical operations and provide a means for you to control the system. Documentation includes the manuals and listings that tell you how to use the hardware and software.

Collectively these components provide a complete computer system: system hardware + system software + system documentation = computer system. Usually, a computer system requires three basic hardware items: the computer, which performs all data processing; a terminal device, used like a typewriter for two-way communication between the user and the system; and a storage medium for storing programs and data. These three devices – the computer, the terminal and the storage medium – are the required hardware components of any computer system.

Optional peripheral devices are added to a computer system according to the specific needs of the system users. For example, computer systems that are used primarily for program development may have extra storage devices and a high speed printing device. Computer systems used in a laboratory may have graphics display hardware, an oscilloscope device, and an analog-to-digital converter. Computer

systems that provide (or use) information in conjunction with another kind of computer system usually have a magtape device, because magtape device is an industry-standard storage device.

Peripheral devices are categorized as input/output (I/O) devices since the functions they perform provide information (input) to the computer, accept information (output) from the computer, or do both. Line printers are output devices because they perform only output operations. Terminals and storage devices are input/output devices because they perform both input and output operations. System software is an organized set of supplied programs that effectively transform the system hardware components into usable tools. These programs include operations, functions, and routines that make it easier for you to use the hardware to solve problems and produce results. For example, some system programs store and retrieve data among the various peripheral devices. Others perform difficult or lengthy mathematical calculations. Some programs allow you to create, edit, and process application programs of your own. System software always includes an operating system, which is the “intelligence” of the computer system. Usually the system software includes one or several language processors.

3. Read the text again and answer the questions.

1. What is the text about?
2. What is a computer system?
3. What elements does a functioning computer system combine?
4. What are the hardware elements?
5. What are the software elements?
6. What are three basic hardware items of an ordinary computer system?
7. Why are optional peripheral devices added to a computer system?
8. What are the examples of the most usual optional peripheral devices?
9. Speak about input/output devices.
10. What is system software?
11. What is called the “intelligence” of the computer system?

4. Match the following words and word combinations from two columns.

1) operating system;	a) промышленный;
2) supplied programs;	b) базовые элементы;
3) industry-standard;	c) дополнительные программы;
4) high-speed;	d) операционная система;
5) basic items;	e) высокоскоростной;
6) line printers;	f) линейный принтер;
7) computer system;	g) механические устройства;
8) mechanical devices;	h) компьютерная система;
9) storage medium;	i) память компьютера;
10) hardware elements;	j) терминал;
11) terminal device.	k) элементы аппаратуры.

Text 2. Computer Networks

1. Before you start:

1. How can we use computer networks in Civil Engineering?

2. Read and translate the text using the dictionary.

New vocabulary:

ability – возможность;
access – доступ;
graphics screen – экран с графической разверткой;
bulletin board – материнская плата;
close – близко;
database – база данных;
disc-system – системный диск;
environment – окружающая среда, окружение;
fibre optics – фиброволокно;
impact – удар, столкновение, попадание;
interface – интерфейс;
local area networks – локальная сеть;

network – сеть;
query – вопрос, запрос;
software protocols – протоколы программного обеспечения;
to blur – затемнить[ся], стереть[ся];
to carry – доставлять;
to connect – соединять;
to distribute – распределять;
to dro – падать, опускать[ся];
to exchange – обменивать[ся];
to handle – доставлять;
to improve – улучшать;
to link – связывать;
to parse – делать детальный разбор;
to reduce – уменьшать[ся];
to split – разделять[ся];
to transmit – передавать;
traffic – движение;
wide area network – всеобщая компьютерная сеть.

Computer networks link computers by communication lines and software protocols, allowing data to be exchanged rapidly and reliably. Traditionally, networks have been split between wide area networks (WANs) and local area networks (LANs). A WAN is a network connected over long distance telephone lines, and a LAN is a localized network usually in one building or a group of buildings close together. The distinction, however, is becoming blurred. It is now possible to connect up LANs remotely over telephone links so that they look as though they are a single LAN. Originally, networks were used to provide terminal access to another computer and to transfer files between computers. Today, networks carry e-mail, provide access to public databases and bulletin boards, and are beginning to be used for distributed systems. Networks also allow users in one locality to share expensive resources, such as printers and disk-systems.

Distributed computer systems are built using networked computers that cooperate to perform tasks. In this environment each part of the networked system does what it is best at. The high-quality bitmapped

graphics screen of a personal computer or workstation provides a good user interface. The mainframe, on the other hand, can handle large numbers of queries and return the results to the users. In a distributed environment, a user might use his PC to make a query against a central database. The PC passes the query, written in a special language (e.g. Structured Query Language – SQL), to the mainframe, which then parses the query, returning to the user only the data requested. The user might then use his PC to draw graphs based on the data. By passing back to the user's PC only the specific information requested, network traffic is reduced. If the whole file were transmitted, the PC would then have to perform the query itself, reducing the efficiency of both network and PC.

The impact of fibre optics will be used to reduce considerably the price of network access. Global communication and computer networks will become more and more a part of professional and personal lives as the price of microcomputers and network access drops. At the same time, distributed computer networks should improve our work environments and technical abilities.

3. Using the information of the text, answer the questions given below.

1. What is the purpose of computer networks?
2. What is the traditional distinction between networks?
3. What is the definition of WANs?
4. What is the definition of LANs?
5. What are and were computer networks used for?
6. What do computer networks allow users?
7. Speak about distributed computer systems.
8. How can you make a query to a central database?
9. What language is the query written in?
10. What will reduce the price of network access?
11. What do you know about global communication?

Text 3. How Computer Viruses Work

1. Before you start:
1. What is a computer virus?
2. How does a virus work?

2. Read and translate the text using the dictionary.
New vocabulary:

bulletin board system – материнская плата;
commercial software – коммерческое обеспечение;
computer virus – компьютерный вирус;
detonator – детонатор;
drive – передача, привод;
feature – черта;
floppy – дискета;
hard disc – жесткий диск;
infector – инфектор;
meanwhile – между тем, тем временем;
to alter – изменять, переделывать;
to avoid – избегать;
to be aware of – знать, сознавать;
to boot – загружать, перезагружать;
to contain – включать в себя, содержать;
to damage – повреждать;
to enlarge – расширять;
to erase – стирать;
to install – устанавливать;
to interfere – вмешиваться;
to notice – замечать;
to replicate – дублировать, повторять;
to run a program – запустить программу;
to separate – отличать, отделять;
to spread – распространяться;
to trigger – приводить в действие, запускать;
virus scanner – сканер [поиск] вирусов;
virus shield – антивирусный заслон;
write-protect tabs – система защиты записи.

A computer virus – an unwanted program that has entered your system without your knowing about it – has two parts, which I'll call the infector and the detonator. They have two very different jobs. One of the features of a computer virus that separates it from other kinds of computer program is that it replicates itself, so that it can spread (via floppies transported from computer to computer, or networks) to other computers.

After the infector has copied the virus elsewhere, the detonator performs the virus's main work. Generally, that work is either damaging data on your disks, altering what you see on your computer display, or doing something else that interferes with the normal use of your computer. Here's an example of a simple virus, the Lehigh virus. The infector portion of Lehigh replicates by attaching a copy of itself to COMMAND.COM (an important part of DOS), enlarging it by about 1000 bytes.

So let's say you put a floppy containing COMMAND.COM into an infected PC at your office – that is, a PC that is running the Lehigh program. The infector portion of Lehigh looks over DOS's shoulder, monitoring all floppy accesses. The first time you tell the infected PC to access your floppy drive, the Lehigh infector notices the copy of COMMAND. COM on the floppy and adds a copy of itself to that file. Then you take the floppy home to your PC and boot from the floppy. (In this case, you've got to boot from the floppy in order for the virus to take effect, since you may have many copies of COMMAND.COM on your hard and floppy disks, but DOS only uses the COMMAND.COM on the boot drive.) Now the virus has silently and instantly been installed in your PC's memory. Every time you access a hard disk subdirectory or a floppy disk containing COMMAND.COM. the virus sees that file and infects it, in the hope that this particular COMMAND.COM will be used on a boot disk on some computer someday. Meanwhile, Lehigh keeps a count of infections. Once it has infected four copies of COMMAND.COM, the detonator is triggered. The detonator in Lehigh is a simple one. It erases a vital part of your hard disk, making the files on that part of the disk no longer accessible. You grumble and set about rebuilding your work, unaware that Lehigh is waiting to infect other unsuspecting computers if you boot from one of those four infected floppies.

Don't worry too much about viruses. You may never see one. There are just a few ways to become infected that you should be aware of. The sources seem to be service people, pirated games, putting floppies

in publicly available PCs without write-protect tabs, commercial software (rarely), and software distributed over computer bulletin board systems (also quite rarely, despite media misinformation). Many viruses have spread through pirated – illegally copied or broken – games. This is easy to avoid. Pay for your games, fair and square. If you use a shared PC or a PC that has public access, such as one in a college PC lab or a library, be very careful about putting floppies into that PC's drives without a writeprotect tab. Carry a virus-checking program and scan the PC before letting it write data onto floppies.

Despite the low incidence of actual viruses, it can't hurt to run a virus checking program now and then. There are actually two kinds of antivirus programs: virus shields, which detect viruses as they are infecting your PC, and virus scanners, which detect viruses once they've infected you.

Viruses are something to worry about, but not a lot. A little common sense and the occasional virus scan will keep you virus-free.

Remember these four points:

– viruses can't infect a data or text file

– before running an antivirus program, be sure to cold-boot from a writeprotected floppy.

– don't boot from floppies except reliable DOS disks or your original production disks.

– stay away from pirated software.

3. Find the English equivalents to the following word combinations in the text.

1) нежелательные программы;
2) запустить антивирусную программу;
3) повредить информацию на диске;
4) вмешиваться в нормальную работу компьютера;
5) обращать внимание на;
6) распространяться по компьютерной сети;
7) вставить дискету;
8) вирусы, размещенные в памяти компьютера;
9) «пиратские» диски;
10) стирать информацию с жесткого диска;
11) коммерческое обеспечение;
12) система защиты записи.

Unit 4. Architecture and the Architect

Text 1. Architecture: Its Forms and Functions

1. Before you start:

1. What do you think about modern architecture?
2.Which country has the best architecture?

2. Read and translate the text using the dictionary.

New vocabulary:

entail – вызывать;
evolve – развиваться;
incoherent – непоследовательный, несвязный;
inherent – присущий, неотъемлемый;
heritage – наследство;
requite – вознаграждение**;**
triple – тройной.

Architecture is the art or science of planning, building and structures. Without consideration of structural principles, materials, social and economic requirements a building cannot take form. But without aesthetical quality inherent in its form a building cannot be considered as a work of architecture1 as well.

From the very beginning of construction in human history lots of architectural skills, systems and theories have been evolved for the construction of the buildings, which have housed nations and generations of people in any kind of their activity. Writings on architecture are almost as old as writing itself. Books on the theory of architecture, on the art of buildings, and on the aesthetical view of buildings exist in great number. The oldest book, which sets forth the principles, upon which buildings should be designed and which aim is to guide the architect, is the work of Markus Vitruvius Pollio written in the first century B. C.

Architecture is an art. Its nowadays expression should be creative and consequently new. The heritage of the past cannot be ignored, but it must be expressed in modern terms. There exists an evident paradox

in the coexistence of change and survival in every period of human civilization. This paradox of change and repetition is clearly illustrated in any architectural style.

Architecture is also the style or manner of building in a particular country or period of history. There are widely known examples of Gothic architecture all-round the globe. During many centuries mankind admires the architecture of ancient Greece or Roman Empire as well.

Nearly two thousand years ago the Roman architect Vitruvius listed three basic factors in architecture. They are convenience, strength and beauty. These three factors have been presented and are always interrelated in the best constructions till the 21st century. No true architect could think of any of them without almost automatically considering the other two as well. Thus, architectural design entails not only the necessity to study various solutions for convenience, structure, and appearance as three separate processes. Architectural design also includes the necessity to keep in mind the constant interaction of these factors. It's impossible for an architect first plan a building from the point of view of convenience, and then make the design of a strong construction around his plan to shelter it. Then, as a final touch, try to adjust and decorate the whole to make it pretty. Any design evolving from such kind of work will produce only a confused, incoherent, and unsatisfactory building. When speaking about any truly great building we cannot but say that every element in it has a triple implication or significance.

This triple nature of architectural design is one of the reasons why architecture is a difficult art. It needs some unique type of imagination as well as long years of training and experience to make a designer capable of getting requite in the light of these three factors – use, construction, and aesthetic effect – simultaneously. The designer must have a good knowledge as of engineering so of building materials. This knowledge will enable him to create economically strong and practical construction. The designer, in addition, must possess the creative imagination, which will enable him to integrate the plan and the construction into the harmonious whole. The architect's feeling of satisfaction in achieving such integration is one of his/her (their) greatest rewards.

3. General understanding. Answer the questions to the text.

1. What is architecture?
2. What is the oldest book to set forth the principles of construction?
3. How should mankind deal with the heritage of the past?
4. What three basic factors in architecture were listed nearly two thousand years ago?
5. Why architecture is a difficult art?
6. What can we say about any truly great building?
7. What integration must an architect achieve?

Text 2. A short history of architecture

a) Roman heritage in Britain

1. Before you start:

1. What period in history has the best architecture?
2. What is the greatest architectural achievement in history?

2. Read and translate the text using the dictionary.

New vocabulary:

to date back – относиться к;
commercial trade – коммерческая торговля;
fort – крепость, форт**;**
milecastles – «милевый замок».

London. The origin of London dates back to Roman times. The first bridge on the River Thames was probably built by the Romans between 55 BC (during Julius Caesar's expeditions) and 43 AD (during Emperor Claudius' invasion of Britain). For the first time the river was used for commercial trade with the continent. As a consequence, London became richer and larger and walls were built around it to provide protection. The Romans remained in Britain for almost 400 years. They left behind a very changed nation to the one they had invaded. They introduced a road system and established new towns that often had a rectangular space in the centre called the 'forum'.

Bath. Bath was the centre of fashion, luxury and leisure of Roman society in Britain. Today, Bath is famous for its healthy mineral water, hot springs, Roman baths (which are still open to the public) and Georgian buildings. It became a World Heritage Site in 1987 and today it is a major centre for tourism. Every year in May and June there is an important festival of classical music. Bath is rich in history and it is surrounded by fascinating countryside.

Hadrian's Wall. Roman Emperor Hadrian built this famous wall in northern England between 122 and 127 AD. He decided that the Empire needed securing. The wall served as a defence across the northern border to keep out people from northern Scotland. It was 120 km long and up to five metres high. Along the wall the Romans built a series of small forts called 'milecastles'. Chester's Roman fort is one of the best conserved. Today, long sections of the wall can still be seen and it remains a popular attraction with many visitors every year.

3. Answer the questions to the text.

1. When was the first bridge built in London?
2. What is Bath famous for?
3. What happened in 1987?
4. What takes place in Bath during May and June?
5. Who decided to build a wall across the northern border?
6. What did the Romans build along the wall?

b) The Middle Ages: the Gothic period

1. Read the text and then choose the correct option.

New vocabulary:

Gothic style – готический стиль, готика;
monastic order – монашеский орден;
medieval cathedrals – средневековые соборы;
arch – арка.

The Gothic style was mainly introduced in Britain by the monastic order of Cistercians. They brought a simplified version of Gothic from their homeland in Burgundy, France. Many of the finest and largest

works of English architecture, particularly the medieval cathedrals of England, were built in this Gothic style, which flourished during the Middle Ages. Characteristic features of this style include tall pointed arches and tall narrow windows and columns. This choice was due to the fact that the Cistercians wanted to show their ideas of spiritual elevation in all expressions of monastic life, including architecture. There are three main periods in Gothic architecture:

• Early English style dates back to the 13th century and its main features are tall, narrow, pointed windows with no decorative stonework.

• The Decorated style was typical of the first half of the 14th century and introduced more decorative patterns of ornamental stone carving around windows and doors. The simple geometric shapes of the Early English period gave way to the use of more complex curves.

• Perpendicular style is the third phase of Gothic architecture in England. It features large windows, vertical lines and fan vaulting (ceiling patterns in stone). This style characterised the second half of the 14th and 15th century.

1. The Cistercians came from ...
a) Spain
b) France
c) Wales

2. They wanted to express their ideas of ... in architecture.
a) spiritual elevation
b) monastic life
c) decorative stonework

3. Early English style is characterised by ...
a) simple and plain stonework
b) ornamental stone carving
c) fan vaulting

4. Decorated style is typical of the ... century.
a) 13th
b) 14th
c) 15th

5 The main features of Perpendicular style are ...
a) narrow, pointed windows
b) stone carving around windows
c) large windows and fan vaulting

c) British castles

1. Read and translate the text using the dictionary.

New vocabulary:
fortification – крепость
castle – замок

In the 11th and 12th centuries the Normans introduced large numbers of castles and fortifications – they were a sign of their power. Norman architecture in England had a defensive purpose. They built strong castles made of stone and wood, following a variation of the Romanesque style that was quite common in Europe during the Middle Ages. They chose strategic positions for their castles, so that they could defend themselves from the attacks of the natives (the Saxons).

Castles were usually surrounded by thick walls. The strongest part of the building was the inner tower, which was the last defensive point. Later, these castles developed into manor halls and their defensive aim was gradually replaced by residential and entertainment functions. The most famous examples of this kind of architecture in England are the White Tower, a central tower at the Tower of London, Warwick Castle, Dover Castle and Windsor Castle.

2. Answer the questions to the text.

1. What purpose did Norman architecture have in England?
2. What materials did the Normans use to build the castles?
3. Where did they build their castles? Why?
4. How did castles change over time?

d) The Renaissance style. Georgian architecture

1. Read the text and answer the questions.

New vocabulary:

symmetry – симметрия;
column – колонна;
dome – купол.

The Renaissance style started in England in the middle of the 16th century. The Renaissance style placed emphasis on symmetry, geometry and regularity, Columns and domes were typical features. The move toward a classical style in England was largely the work of an English architect called Inigo Jones. St Paul's Cathedral in London, designed by Sir Christopher Wren, is a beautiful Renaissance building with a huge dome and two Baroque towers above a double portico façade. Most of the cathedral is made of stone. Inside the visitor is fascinated by its great dimensions and decorations.

The name Georgian comes from the three Georges who ruled Britain between 1714 and 1820. The type of building which most characterizes the Georgian period is the simple but elegant 'Townhouse'. These tall, narrow buildings were often built in rows called 'terraces'. During the 18th century the population of urban areas increased considerably. Therefore, there was a need to pack a lot of houses into a small space and the 'terraces' provided a good solution.

1. When did the Renaissance style start in England?
2. What did this style consist of?
3. What is the majority of St Paul's Cathedral made of?
4. What are visitors to St Paul's impressed by?
5. Which feature is typical of the Georgian style?

Text 3. Bio-architecture: general definitions

1. **Before you start:**

1.What is the relationship between architecture and nature?
2.What can architects learn from nature?

2. Read the text and answer the questions.

New vocabulary:

wood – древесина;
energy consumption – энергозатратность;
renewable energy - возобновляемый источник энергии.

Bio-architecture is a new building approach that respects life and earth. Its aim is to create 'healthy' buildings with little ecological impact, creating harmony between buildings and nature. For this reason two basic principles have to be followed:

• using the natural presence of the sun, good thermal insulation and natural ventilation to reduce energy consumption;

• using renewable energy resources (solar, wind, water and geothermal) to achieve energy autonomy.

Bio-architects and designers follow the principles of natural design that rule all nature, so by studying and understanding the regularity and balance that we can find in nature, they try to establish rules that can be applied to architecture. They use special geometric shapes, symmetries, proportions, natural patterns and universal symbols to create pleasant and harmonious spaces. Bio-architects follow simple rules that include:

• designing spaces using natural geometries, shapes and growth patterns in order to create sustainable systems;

• avoiding 'negative' forms such as sharp angles, and creating harmonious spaces;

• using all kinds of biological materials and avoiding steel, aluminium and plastics when possible.

3. Read the text again and decide if the statements below are true (T) or false (F).

1. Sustainable architecture aims at creating harmony between man and nature.
2. Bio-architecture tries to mirror the balance we find in nature.
3 The rules of bio-architecture are very complex.
4. Sharp angles are a good example of harmonious spaces.
5. Steel and plastics are widely used in bio-architecture

Unit 5. Road Engineering and its history

Text 1. Ancient roads of the Mediterranean and Middle East

1. Before you start:

1. How do you imagine ancient roads?
2.What were ancient roads made of?

2. Read and translate the text using the dictionary.

New vocabulary:

path – тропинка;
swamp – трясина, болото;
paved roads – асфальтированная, мощёная дорога;
vehicle – транспортное средство;
gutter – сток; слив;
gypsum mortar – штукатурный раствор из гипса;
surface – поверхность;
pavement – тротуар;
cart – телега;
the Mediterranean Sea – Средиземное море;
city planning – городское планирование;
dumping grounds – место свалки;
ziggurat – зиггурат; зиккурат (ступенчатая пирамидальная башня, культовое сооружение);
quarry – карьер;
cliff – утёс; отвесная скала;
limestone – известняк; белый камень;
junction – дорожная развязка; примыкание дороги;
rut – колея.

The first roads were paths made by animals and later adapted by humans. The earliest records of such paths have been found around some springs near Jericho, Israel and date from about 6000 BC. The first indications of constructed roads date from about 4000 BC and consist of stonepaved streets at Ur in modern-day Iraq and timber roads preserved in a swamp in Glastonbury, England. During the Bronze Age,

the availability of metal tools made the construction of stone paving more feasible; at the same time, demand for paved roads rose with the use of wheeled vehicles, which were well established by 2000 BC.

A. **Cretan stone roads**

At about this time the Minoans on the island of Crete built a 30-mile road from Gortyna on the south coast over the mountains at an elevation of about 4,300 feet to Knossos on the north coast. Constructed of layers of stone, the roadway took account of the necessity of drainage by a crown throughout its length and even gutters along certain sections. The pavement, which was about 12 feet wide, consisted of sandstone bound by a clay-gypsum mortar. The surface of the central portion consisted of two rows of basalt slabs 2 inches thick. The centre of the roadway seems to have been used for foot traffic and the edges for animals and carts. It is the oldest existing paved road**.**

B. **Roads of Persia**

The earliest long-distance road was a 1,500-mile route between the Persian Gulf and the Mediterranean Sea. It came into some use about 3500 BC, but it was operated in an organized way only from about 1200 BC by the Assyrians, who used it to join Susa, near the Persian Gulf, to the Mediterranean ports of Smyrna (Vzmir) and Ephesus. More a track than a constructed road, the route was duplicated between 550 and 486 BC by the great Persian kings Cyrus II and Darius I in their famous Royal Road. Darius I made the Royal Road as it is recognized today by improving the road bed with a hard-packed gravelled surface, of 6.25 m width and held within a stone curbing at a stretch near Gordium, and connecting the parts together in a unified whole stretching some 1,500 miles. Like its predecessor, the Persian Royal Road began at Susa, wound northwestward to Arbela, and thence proceeded westward through Nineveh to Harran, a major road junction and caravan centre, and contained hundreds of stations for the exchange of horses. The Royal Road served many purposes including trade and the ability to dispatch troops when needed in recalcitrant provinces. The main road then continued to twin termini at Smyrna and Ephesus. The Greek historian Herodotus, writing in about 475 BC, put the time for the journey from Susa to Ephesus at 93 days, although royal riders traversed the route in 20 days.

C. **Babylon**

Archaeologists have discovered that in Babylon the streets were laid out in straight lines that intersect approximately at right angles, an innovation that bears witness to city planning and strong central government. There were 24 streets in the city, running either parallel to the river or at a right angle to it. These streets were narrow, irregular, ranging from about four to twenty feet in width with high windowless walls on each side. The streets were not paved, with the exception of the Processional Way, but instead created with raw earth. Streets provided access to houses, temples, and public buildings. They also carried the burden of becoming the dumping grounds for the city. The citizens of Babylon, not unlike those of Renaissance England, threw their garbage and filth into the streets. Then, they covered it up with layers of clay. As a result, the streets of Babylon began to rise, and eventually, houses needed to be built on higher ground. The street known to the Babylonians as Aibur-shabu (the enemy shall never pass) was the name of the road leading from the north to the Ishtar gate. It was a broad paved road that ran for 200m between high walls (the eastern wall of the northern palace and the western side of the eastern outer bastion). The most famous street was the "Processional Way" which ran along the eastern side of the southern palace, through the Ishtar gate and outside the inner town to a special festival house called the Bit Akitu situated to the north. The road climbs gently upwards towards gate. Center of the roadway was laid with huge flagstones of limestone, each paving stone has an inscription of Nebuchadnezzar's dedication. On leaving the gate, the Processional Way goes past the Southern Palace, sloping downwards then some 900m south turns west between the ziggurat enclosure and the Marduk temple towards the Euphrates bridge built by both Nabonidus and Nebuchadnezzar. The way was lined with figures of some 120 lions, the symbol of Ishtar in molded glazed bricks. The lions on the Ishtar gate have a dark blue background. They were either white with yellow mane or yellow with red manes (now weathered to green).

D. **Egypt**

In the Old Kingdom of ancient Egypt, a time of grand architecture beginning about 4,600 years ago, demand for building stones for pyra

mids and temples led to the opening of many quarries in the low cliffs near the Nile River. To make it easier to transport the heavy stones from one of these quarries, the Egyptians laid what may have been the world's first paved road. Research geologists mapping the ancient Egyptian stone quarries have identified a seven-and-half-mile stretch of road covered with slabs of sandstone and limestone and even some logs of petrified wood. The pavement, they concluded, facilitated the movement of human-drawn sleds loaded with basalt stone from a nearby quarry to a quay for shipment by barge across the lake and on the Nile to construction sites. "Here is another technological triumph you can attribute to ancient Egypt," Dr. James A. Harrell, a professor of geology at the University of Toledo, Ohio, said in an interview. Report of Discovery Dr. Harrell and Dr. Thomas Bown, a research geologist at the United States Geological Survey in Denver, mapped the road last year and reported their findings on Friday at a meeting of the Geological Society of America in Durango, Colo. They said that pottery fragments at a quarry and a camp for the ancient stone workers, both discovered near the road, helped date the site to the period of the Old Kingdom, about 2600 to 2200 B.C., when major technological advances were being made, but before Egypt's political zenith. The oldest previously known paved road, made of flagstone and dated no earlier than 2000 B.C., was in Crete. The Egyptian paved road, with an average width of six and a half feet, ran across desert terrain 43 miles southwest of modern Cairo. Remnants of the road were first observed early this century, but its full extent and significance were not recognized until 1993, when Dr. Bown and Dr. Harrell discovered a large basalt quarry at one end of the road. This dark volcanic stone was favored in monumental construction for pavements inside mortuary temples at Giza, the site of the Great Pyramids, and also for royal sarcophagi. Egyptologists have suggested that the black rock was popular for funerary uses because it symbolized the dark, life-giving Nile mud. Apart from some construction ramps associated with the pyramids, the geologists said, there are no other paved roads known from ancient Egypt. Wheeled wagons were not generally used there until many centuries after this road was built.

E. **Greece**

The early Greeks depended primarily on sea travel. There is evidence of the building of special roads for religious purposes and transport about 800 BC, but there is little evidence of substantial road building for travel and transport prior to the Roman system. The Greeks did build a few ceremonial, or "sacred," roads, paved with shaped stone and containing wheel ruts about 55 inches apart.

3. Find the definitions to the following words (you may use your dictionary if necessary).

path	is a thickness of some material laid on or spread over a surface
road	is a track in the ground, esp. one made by the passage of a vehicle or vehicles
layer	is a way for passing on foot; a track, beaten by feet, not specially constructed
junction	is a place or point where two or more things are joined
rut	is a long, narrow stretch with a smoothed or paved surface, made for traveling by motor vehicle, carriage, etc., between two or more points

4. Fill in the chart and compare your variants with your partner.

	Crete	**Persia**	**Babylon**	**Egypt**	**Greece**
Material					
Purpose					

Text 2. Highway construction road

1. Before you start:

1.What highways do you know in our country?

2.What speed limit is usually on highways in Russia?

2. Read and translate the text using the dictionary.

New vocabulary:

rural – сельский; деревенский;
lesser – второстепенный;
urban – городской;
crushed rock – щебень;
flexible pavement – нежёсткое дорожное покрытие;
tar – смола;
binder – нижний слой асфальтобетона;
rigid pavement – жёсткое дорожное покрытие;
tensile stresses – натяжение;
superhighway – автомагистраль высшего класса.

Road is the traveled way on which people, animals, or wheeled vehicles move. In modern usage the term road describes a rural, lesser traveled way while the word street denotes an urban roadway. Highway refers to a major rural traveled way; more recently it has been used for a road, in either a rural or urban area, where points of entrance and exit for traffic are limited and controlled. The Romans were the first to construct roads scientifically. Their roads were characteristically straight, and the best ones were composed of graded soil foundation that was topped by four courses (layers): a bedding of sand or mortar; rows of large flat stones; a thin layer of gravel mixed with lime; and finally a thin wearing surface of flint like lava. Roman roads varied in thickness from 3 to 5 feet (0,9 to 1,5 m), and their design remained the most sophisticated until the advent of modern road building technology in the late 18th and early 19th centuries.

When interest in road building revived in Europe in the late 18th century, engineers began designing roads that incorporated lighter surfaces, relying on the subsurface for load support. Roads could thus be built relatively cheaply and quickly. The most influential of the early engineers was John Loudon McAdam, inventor of the macadam road

surface. His design comprised a compacted subgrade of crushed rock to support the load, and a surface covering of light stone to absorb wear and shed water to the drainage ditches. By the end of the 19th century the widespread use of the bicycle created a demand for roads with smoother surfaces. A pavement of natural rock asphalt was used in Paris as early as 1854, and Portland cement concrete was used in Scotland in 1865.

Two classifications of pavement have been developed: flexible and rigid. Flexible pavement is usually made of an asphalt-gravel aggregate that is laid in one or more courses over the subgrade. The aggregate can be mixed at the road-building site or at a central plant, and its quality varies with the production method used. A cheap method of pavement, called surface treatment, is made by spraying hot asphalt or tar on a compacted stone base and then placing small stone chips on the tar; it is suitable for lightly traveled roads and can be built up in layers. Pavements made with a high-temperature plant mix are suitable for the heaviest loads and are made by laying the asphalt while it is hot and rolling it before it cools. A flexible pavement has the advantage of being easy to build and repair, its asphalt binder is both waterproof and plastic.

Rigid pavement made of Portland cement concrete, generally has greater strength but is susceptible to cracking. The cement, mixed with water and various grades of crushed stone called aggregate, is poured onto the built-up and graded foundation as a plastic mass. It shrinks as it dries, causing tensile stresses. The concrete also contracts and expands with temperature change, so that cracking is a constant problem. The best solution has been by pouring a continuous concrete slab in which a mesh of steel bars is embedded. The bars, running lengthwise through the concrete, absorb the tension of shrinkage and hold shut any cracks that form.

Modern highway design entails careful study of soil types, the topography of the intended route, and the drainage systems around the roadway. Where necessary, measures are taken to provide additional drainage facilities to prevent water from eroding the road base or freezing in cracks. The techniques of cutting and filling (excavating in one place and depositing it nearby to form a level roadbed) and

switch-backing (zigzagging up a slope) have been used for centuries to obtain easy gradients in varied terrains.

The prototype of the modern superhighway was the Bronx River Parkway, which was completed in 1925 in New York City. It was a limited-access, high-speed highway designed to carry a large volume of traffic without disturbing the natural landscape. In the 1920s the Italians began the autostrada, and the Germans followed not long after with the autobahn. Military use was an important design feature of these highways, which could accommodate heavy traffic at speeds of 100 mi (160 km) per hour. In the United States the federal government created the national Interstate Highway System after World War II. It incorporated the toll-road network with other limited-access highways and linked all of the nation's major cities. Most industrialized countries in the world built similar systems to facilitate automobile and truck traffic.

3. Answer the questions.

1. What were the first roads like and where did they appear?
2. Who was the most influential road engineer in the 18th century? What were the characteristic features of his design?
3. What were two classifications of pavement? Explain the difference between them.
4. What does the modern highway design entail?
5. What were the prototypes of the modern superhighways?

Text 3. Road engineering

1. Before you start:

1. What is a road?
2. What do you think about the quality of roads in Russia?

2. Read and translate the text using the dictionary.

New vocabulary:

suburban – пригородный;
fringe – край; кайма;
congestion – перегруженность, затор (уличного движения**);**

to alleviate – облегчать; смягчать;
bystander – свидетель; наблюдатель;
to adjoin – примыкать, граничить;
to assess – облагать налогом; штрафовать;
option – выбор;
to estimate – оценивать;
to handle – управлять, регулировать;
feasible – вероятный, возможный;
to refine – облагораживать; усовершенствовать;
terrain – местность, территория;
alignment – выравнивание, регулировка;
shoulder – обочина (дороги).

Since the beginning of the 20th century, as the automobile and truck have offered ever higher levels of mobility, vehicle ownership per head of population has increased. Road needs have been strongly influenced by this popularity and also by the mass movement of people to cities and thence to suburban fringes – a trend that has led to increasing travel needs and road congestion and to low-density cities, which are difficult to serve by public transport. Often the building of new roads to alleviate such problems has encouraged further urban sprawl and yet more road travel. Long-term solutions require the provision of alternatives to car and truck transport, controls over land use, and the proper pricing of road travel. To this end, road managers must be concerned not merely with lines on maps but also with the number, type, speed, and loading of individual vehicles, the safety, comfort, and convenience of the traveling public, and the health and welfare of bystanders and adjoining property owners.

Ideally, the development of a major road system is an orderly, continuous process. The process follows several steps: assessing road needs and transport options; planning a system to meet those needs; designing an economically, socially and environmentally acceptable set of roads; obtaining the required approval and financing; building, operating, and maintaining the system; and providing for future extensions and reconstruction.

Planning. Road needs are closely associated with the relative location of centers of population, commerce, industry, and transportation.

Traffic between two centers is approximately proportional to their populations and inversely proportional to the distance between them. Estimating traffic on a route thus requires a prediction of future population growth and economic activity, an estimation of their effects on land use and travel needs, and knowledge of any potential transport alternatives. The key variables defining road needs are the traffic volumes, tonnages, and speeds to be expected throughout the road's life.

It is necessary to predict the extent of the road works needed to handle the traffic. A starting point in these calculations is offered by surveys of origins, destinations and route choices of present traffic; computer models are then used to estimate future traffic volumes on each proposed route. Estimates of route choice are based on the understanding that most drivers select their estimate of the quickest, shortest, or cheapest route. Consideration in planning is also given to the effect of new traffic on existing streets, roads, and parking provisions.

The next step in planning a road system is to refine the selected route to a narrow corridor. The various alignment options are drawn, considering the local terrain and conditions. The economic, social, and environmental benefits and costs of these options are discussed with relevant official and community groups until an acceptable specific route is determined.

Road design. In order fully to understand the design stage, a few standard terms must be defined. A traffic lane is the portion of pavement allocated to a single line of vehicles; it is indicated on the pavement by painted longitudinal lines or embedded markers. The shoulder is a strip of pavement outside an outer lane; it is provided for emergency use by traffic and to protect the pavement edges from traffic damage. A set of adjoining lanes and shoulders is called a roadway or carriageway, while the pavement, shoulders, and bordering roadside up to adjacent property lines is known as the right-of way.

In order to maintain quality and uniformity, design standards are established for each functional road type. The number of traffic lanes is directly determined by the combination of traffic volume and speed, since practical limits on vehicle spacing means that there is a maximum number of vehicles per hour that pass through a traffic lane. The width of lanes and shoulders, which must strike a balance between

construction cost and driver comfort allows the carriageway with to be determined. Standards also specify roadside barriers or give the clear transverse distances needed on either side of the carriageway in order to provide safety in the event that vehicles accidentally leave the carriageway. Thus it is possible to define the total right-of-way width needed for the entire road although intersections will add further special demands.

Design standards also help to determine the actual alignment of the road by specifying, for each design speed the minimum radius of horizontal curves, the maximum vertical gradient, the clearance under bridges, and the distance a driver must be able to see the pavement ahead in order to stop or turn aside.

3. Suggest the Russian equivalents:

Low-density cities; long-term solutions; proper pricing; to meet needs; future extensions; approximately proportional; key variables; parking provisions; environmental benefits; three-dimensional profiles; traffic lane; total right-of-way width.

Unit 6. Heating and Air Conditioning

Text 1. Heating systems

1.Before you start:

1.Why do we need heating systems?

2.What main functions of heating system do you know?

2. Read and translate the text using the dictionary.

New vocabulary:

to heat – отапливать;

electric heat pump – электрический тепловой насос;

air conditioner – кондиционер;

thermostat – терморегулятор;

ceiling – потолок;

concrete – бетон;

All climate-control devices or systems have three basic components: a source of warmed or cooled air, a means of distributing the air to the rooms being heated or cooled, and a control used to regulate the system (e.g. thermostat). A variety of technologies are available for heating your house:

• In a central heating system a furnace or boiler consumes the fuel (e.g. gas, oil, or electricity) that powers it. As fuel is burned, pipes take hot water to radiators. You get hot water at the same time as heating, depending on how you set the controls.

• Electric heat pumps remove heat from outdoor air, ground, surface water or the earth and move heat from one place to another. They can also be used as air conditioners when the weather is warm. The thermostat will also include controls for air conditioning.

• Radiant skirting board heaters are long, metal units with electrical elements inside. They are sometimes the only source of heat in a house, or they can be an extra heating device in cooler rooms.

• Radiant ceiling or floor systems are installed in floors, ceilings or (occasionally) walls. They warm objects in much the same way as the sun does.

• In hydronic heating a boiler warms the circulating water and hot water flows through tubes under the floor or through units that are similar to skirting board heaters. They can also be installed in ceilings. They are sometimes used under concrete in driveways to keep snow and ice from accumulating.

• Portable space heaters are either freestanding or attached to a wall and work with electricity, gas or kerosene. Their area cannot be qualified as heated living space.

3. Read the text again and complete the table. More than one answer is possible.

Your demands	*What can you use?*
1. I want a freestanding heater.	a portable space heater
2. I have a cool room downstairs.	
3. I want to install heating in the ceiling.	
4. I need to move heat from one place to another.	
5. I want to install a radiant element in the floor.	
6. I need an extra heating device.	
7. I want to use my heater as an air conditioner t	

Text 2. Solar heating

1. Before you start:

1. What is solar heating?
2. What main functions of solar heating?

2. Read and translate the text using the dictionary. Complete the text with the words from the box. (tank, roof, common, pollution, sunlight, storing)

New vocabulary:

Solar energy – солнечная энергия;
solar panel – солнечная батарея;
solar photovoltaic system – солнечная фотоэлектрическая система;
solar thermal system – солнечная термическая система;
semiconductor – полупроводник;
solar collector – гелиоприёмник; приёмник солнечной энергии.

Solar energy is the electricity produced from the sun's rays and captured by means of solar panels, which are becoming increasingly (1) _ nowadays. The two types of solar panel systems are solar photovoltaic systems and solar thermal system. In the solar photovoltaic systems the solar thermal panels contain cells whose semiconductors react with (2) ___. Electricity is produced when sunlight hits them. This kind of technology is still quite expensive and its disadvantage nowadays is the problem of (3) ____energy. In the solar thermal system solar energy is used for water heating. The panels are positioned either on the (4)____ or a wall facing the sun and contain flowing water. When the thermal collectors in the panel are exposed to the sun, they heat the water (stored in a hot water cylinder) that is either pumped or driven by natural convection through it. The storage (5)_____ is mounted immediately above or below the solar collectors on the roof. This system is not very expensive and offers a number of advantages, including being renewable, creating less environmental (6) ____ reducing costs and maintenance and saving resources. Hot water can be produced for most of the year. A conventional boiler can be used to make the water hotter, or to provide hot water when solar energy is not available.

3. Now answer these questions.

1. How can electricity be produced using the sun's energy?
2. What do solar thermal panels contain?
3. How is electricity created?
4. What are the two main disadvantages of this energy?
5. What is solar energy also used for?

6. What happens when the thermal collectors are exposed to the sun?
7. Can you name some of the advantages of this system?
8. What can a conventional boiler be used for?

Text 3. Ventilation and air conditioning

1. Before you start:

1. What types of ventilation do you know?
2.What is the purpose of ventilation?

2. Read and translate the text using the dictionary.

New vocabulary:

indoor air – воздух в помещении;
outdoor air – наружный воздух;
pollutant – загрязнение; примесь (в воздухе);
contaminant – загрязняющее вещество; вредная примесь;
humidity – влажность.

Ventilation – the exchange of indoor air with outdoor air – is important to reduce indoor moisture, odours, and other pollutants. Contaminants such as volatile organic compounds, and radon (that may cause health problems) can accumulate in poorly ventilated homes. Excess moisture needs to be removed before high humidity levels lead to physical damage to the home. There are three main types of ventilation:

• Natural ventilation which is uncontrolled air movement through cracks and small holes (infiltration) and through vents such as doors and windows. The disadvantage of this is that it is uncontrollable.

• Spot ventilation which means using localised fans in the rooms where contaminant substances are generated (for example kitchen extractor fans and bath fans).

• Whole-house ventilation is a system that works thanks to fan and duct systems to exhaust stale air and supply fresh air to the house. Whole-house ventilation systems are usually classified as exhaust ventilation when the air is forced out of the house, supply ventilation

if it is forced inside and balanced ventilation if the same amount of air is forced inside and outside the house.

3. Read the text again and answer the questions.

1. Why is ventilation important?
2. What happens if too much moisture is not removed from the inside of your home?
3. What is the disadvantage of natural ventilation?
4. What is spot ventilation?
5. How does whole-house ventilation work?

Text 4. Passive solar building

1. Before you start:

1.What is passive solar building?

2.What advantages has passive solar building got?

2. Read the text and decide if the statements below are true (T) or false (F).

New vocabulary:

energy conservation – рациональное использование энергии;
reject – отсортировывать; выкидывать;
glazing type – застекление.

One of the latest trends in energy conservation is passive solar building design. This means making windows, walls and floors in such a way that they are able to collect, store and distribute solar energy (heat) in winter and reject it in summer. This kind of design implies avoiding the use of mechanical and electrical devices. The best way to design a passive solar building is to pay great attention to window placement, glazing type, thermal insulation, thermal mass and shading. In most cases these design techniques are applied to new buildings, but even existing buildings can be adapted. If emissions decrease, this will help to reduce climate change. Energy conservation makes the replacement non-renewable resources with renewable energy easier. According to the European Union pledges of 2006, the

annual consumption of primary energy in the EU should be reduced by 20% by 2020. The EU's SAVE Programme is expected to promote energy efficiency and encourage energy-saving behaviour. The European Commission is currently giving financial support to large-scale research projects that will try to understand the factors for effective energy conservation programs.

1. Mechanical and electrical devices are used in passive solar building design.
2. These techniques can only be applied to new buildings.
3. Thanks to the decrease in emissions, climate change can be reduced.
4. By 2020 yearly consumption of primary energy in the EU should be reduced by 10%.
5. The European Commission is supporting some energy conservation research projects.

Unit 7. Fire Safety in Building

Text 1. Basic Principles of Fire Protection and Design Against Fire.

1. Before you start:

1. Do you know basic principles of fire protection?
2. What technology helps us fight fire?

2. Read and translate the text using the dictionary.

New vocabulary:

fire hazard – пожарная опасность, риск возникновения пожара;

fire protection – противопожарная защита;

ignition – зажигание, загорание, воспламенение;

fire spread – распространение огня;

structural collapse – обрушение конструкции, структурное разрушение;

building regulations – строительные нормы и правила, СНиП;

fire resistance – пожароустойчивость;

safe evacuation – безопасная эвакуация;

fire precautions – меры предосторожности от пожара;

fire design – конструкция, защищающая от пожара;

fire source – источник возникновения пожара;

fire alarm – сигнал пожарной тревоги, тревожная сигнализация;

fuel-burning appliance – приспособление, работающее на сжигаемом топливе (горючем);

heat detector – тепловой пожарный извещатель; прибор, чувствительный к повышению температуры окружающей среды;

smoke detector – дымовой пожарный извещатель; прибор, реагирующий на наличие дыма;

outbreak of fire – вспышка пожара, его внезапное начало;

first-aid fire fighting equipment – комплект для оказания первой медицинской помощи при борьбе с пожаром;

extinction – тушение.

Fire hazard in buildings may be divided into internal, in the building itself, and external, arising from a fire in an adjoining property. The internal hazard may be subdivided into danger to occupants of the building and damage to structure and contents. The basic principles of fire protection may be set out under three broad headings: Every building should be designed and constructed to reduce the risk of ignition of any part of the building and the spread of fire inside the building, or into or out of it. The parts of the building are required to withstand the effects of fire long enough to avoid any structural collapse that would increase the risk of fire spread. Building regulations deal with the certain requirements for the structure, the nature of the materials used and the surface finishes of the building structure as a whole. It presupposes the following:

1) l imitations are placed upon size, depending upon occupancy;

2) a period of fire resistance is imposed on any supporting structure;

3) all openings, both horizontally and vertically, must be adequately and suitably protected;

4) limitations are imposed upon the nature and amount of combustible material used both for wall and ceiling finishes;

5) controls on width, number and disposition of exits, both horizontally and vertically, to ensure safe evacuation of a building are imposed.

The fire safety problem concerns with the passive and active fire precautions. Passive precautions must be considered at an early stage of the building design process. There are some essential principles of fire design:

– the building should be constructed from building materials that will not contribute to the spread of fire;

– structural collapse and excessive deflection should be prevented;

– the building should be constructed in such a manner that, if a fire starts, the extent of fire and smoke damage will be minimized;

– there should be adequate provision to prevent an arson attack;

– the building should be so constructed that fire cannot spread into the premises from an adjoining building or other external fire source;

– the building should be fitted with an appropriate automatic fire-alarm system;

– the fire – protection systems should be regularly maintained so that they are able to perform their function throughout the life of the building;

– all fire-protection systems should be installed by adequately trained specialists;

– any fuel-burning appliance and electrical equipment should be designed, constructed and installed in a manner that reduces its potential as an accidental source of ignition.

On the other hand, active fire precautions represent an often necessary addition to the services of a building, such as the installation of alarms and detectors to give a warning of an outbreak of fire, the installation of equipment for automatic extinction, and the provision of first-aid fire fighting equipment.

Fire safety engineer should consider some building regulations and requirements related to fire precautions from the early planning stage right through to the ultimate occupation of the building. He has two duties: to protect the lives and to safeguard property within the building.

3. Answer the following questions, using the following expressions: as far as I know, as I remember, in my opinion, if I'm not mistaken.

1. How is fire hazard in buildings divided?
2. What does the internal hazard mean?
3. What are the basic principles of fire protection?
4. What are the parts of the building required to withstand the effects of fire for?
5. What requirements do building regulations deal with?
6. What are limitations placed upon?
7. When must passive precautions be considered?
8. What do they presuppose?
9. The building should be fitted with an appropriate automatic fire-

alarm system, shouldn't it?

10. How are active fire precautions represented?

11. What are the duties of fire safety engineer?

12. When should he consider some building regulations and requirements?

13. What should the fire protection systems be regularly maintained for?

Text 2. "Fire Requirements to the Building Materials"

1. Before you start:

What fire requirements should building materials be met?

2. Read and translate the text using the dictionary.

New vocabulary:

durable – прочный;
fire-resistant – пожароустойчивый;
steel – сталь;
concrete – бетон;
brick – кирпич;
decay – разлагаться;
sound insulation – звукоизоляция;
heat insulation – теплоизоляция;
steelwork – стальная конструкция;
thickness – толщина;
expose – подвергать, выставлять;
aggregate – заполнитель**;**
lightweight – легковесный;
loadbearing – несущий нагрузку;
pulverized fuel ash – размельченная зола сгоревшего топлива;
tile – плитка;
gypsum – гипс;
plaster – штукатурка;
flame-retardant – пламезамедляющий;

partition – перегородка;
clay – глина;
sand lime – песчаный известняк;
reinforced concrete – железобетон;
wood wool slab – ДВП;
joist – балка, брус;
suspended – подвешенный;
beam – перекладина;
shutter – затворка;
measure – измерять.

Nowadays a lot of fire resistant materials and articles are being developed in the laboratories to improve fire protection in buildings. Materials that are used for structural purposes should meet several requirements. In most cases it is important that they should be hard, durable, fire-resistant. The most commonly used materials are steel, concrete, stone, wood and brick. They differ in hardness, durability and fire-resistance. Wood is the most ancient structural material. It is light, cheap and easy to work but wood has certain disadvantages: it burns and decays. Stone belongs to one of the oldest building materials used by man. It has mechanical strength, compactness, sound and heat insulation and fire-resistance. Steel is non-combustible but it does not withstand the temperature above 550 degrees C and a fire can reach a temperature of 600 degrees C within a few minutes of its outbreak. The protection of structural steelwork is of prime importance in building construction. Steel can be protected in variety of ways. It can be encased in brickwork or concrete, or protected by the application of sprayed asbestos or vermiculite. Timber of sufficient thickness is capable of withstanding fire for a longer period than unprotected steel under similar conditions. The ability of concrete to resist damage when exposed to high temperatures depends largely upon the properties of its aggregate.

Thermalite lightweight load bearing insulating building blocks manufactured from cement, sand and pulverized fuel ash are incombustible and have good thermal insulation properties. The blocks can be used in external walls, interior and partition walls. Such incombus-

tible products as ceiling tiles made of reinforced gypsum plaster can give 1 hr fire protection. Fire-retardant emulsion paint and flame-retardant treatment for timber are developed to prevent spread of flame. For walls and partitions traditional materials such as solid bricks of clay, concrete or sand lime, solid concrete blocks or reinforced concrete give a range of fire resistance depending on thickness and finish. Wood wool slabs also afford protection, plastered on both sides to a specified thickness. Floors and roofs can be of concrete or timber construction. Forms of construction include reinforced concrete slabs. Timber joist construction can incorporate plasterboard, asbestos insulation board, wood wool slabs and a variety of other materials in the ceilings to give the required degree of fire resistance. Fire resistant suspended ceilings can also be used to protect steel beams. An essential element in the design of fire-resisting structures is the adequate protection of all openings in walls and floors. In industrial buildings doors and archways should be fitted with fire-resisting doors or shutters. The fire safety engineer must achieve the maximum safety to the occupants and the minimal structural damage to the fabric of the building, if a fire occurs. All structural materials should be subjected to the tests consisting of some items: noncombustibility and ignitability of materials, fire propagation of materials, surface spread of flame, fire resistance for the elements of structure. The term “fire resistance” is a property of a complete structural element and not of an individual material. Fire resistance is measured by the length of time an element of structure will resist a fire of a prescribed severity without failure. In order to understand the meaning of fire resistance in relation to fire technology, it is important that the influence of high temperatures on such basic materials as steel and concrete should be fully appreciated. Only by acquiring such a knowledge can the engineer design a structure which will meet the fire resistance design criteria. The coordinated policy of fire prevention is initiated at the planning stage of new buildings and maintained in use.

3. True or False:

1. Structural materials are quite similar in their properties.
2. Steel can withstand the temperature nearly 800 degrees C.
3. We may ignore the influence of high temperatures on steel and

concrete.

4. Lightweight loadbearing insulating blocks can be used in external walls.

5. All structural materials should be subjected to the tests.

6. Wood wool slabs plastered on both sides give the required protection.

7. The adequate protection of all openings is not an important element.

8. Materials used for structural purposes should meet several requirements.

9. Wood hasn't got any disadvantages.

10. Ceiling tiles made of reinforced gypsum plaster can't give the adequate fire protection.

Text 3. Sources of Ignition and Fire Prevention Measures

1.**Before you start:**

Where do often fires occur?

2. Read and translate the text using the dictionary.

New vocabulary:

conflagration – большой пожар;
disaster – бедствие;
cause – вызывать;
loss – потеря;
vehicle manufacturing – автомобильное производство;
equipment – оборудование;
explosive – взрывоопасный;
flammable – воспламеняющийся;
explosion-proof – взрывозащищенный;
arc – дуга;
spark – искра;
emergency call panel – панель аварийной сигнализации;
conceal – скрывать;

perpetrator – нарушитель;
self-contained – автономный;
procedure – мероприятие;
supervision – наблюдение;
alteration – перемена, изменение;
bear in mind – иметь в виду;
sprinkler system – разбрызгивающая система;
insurer – страховщик.

1. The pages of history are full of conflagrations and disasters caused by fire. The efforts to protect property and prevent fires were made in Rome in about 300 BC.

2. Speaking about industry, the study of large fires reveals that premises engaged in engineering and electrical goods manufacture are responsible for nearly 15 percent of the total losses from large fires. The damage from the fires in the vehicle manufacturing industry is not very essential, but the most frequent outbreaks occur in the chemical industry. Where the source of a large fire could be determined, in more than one third of outbreaks the location was a store, stockroom, warehouse or similar area. Electrical equipment is a potential source of ignition of explosive atmospheres in areas where industrial operations involve flammable liquids and gases, if certain safeguards are not employed. The electrical equipment should be located in non-hazardous areas. Its explosion-proof construction should prevent electrical arcs or sparks from igniting surrounding explosive atmosphere.

3. The catastrophic fires also can be residential and nonstructural ones. Almost 60 percent of the residential fires occurred in the houses that had no detectors. In other cases the detectors operated and sent signals to emergency call panel, but the fire caused a death because of the smoke spreading throughout the building. Some of the fires are started by the children playing with matches. Statistics says that 40 percent of office fires are started by employees by bringing in kettles or toasters.

4. In many cases arson accounts for a high proportion of fires. The reasons for arson are many and varied. It may simply be mindless vandalism, playing with fire, revenge or an attempt to conceal a crime. Whatever the motive, if undetected, the perpetrators may attempt to

set fire to combustible materials lying around the outside of a building, or try to gain access to the building where the consequences of their actions could be even more damaging.

5. But technological advances, particularly over the last 10 years, now mean that protection against the threat of criminal attack, and specifically arson, can be provided by remotely monitored systems, 24 hours a day. This is especially important when a location is unmanned overnight or at weekends, requiring effective cover to be maintained. Such systems are able to take advantage of standard cameras to act as the 'detectors' with detection zones placed anywhere within a specific camera view on or around the items or areas to be protected. The cameras are then linked to a selfcontained processing system capable of using video content analysis. With the most recent systems, it is perfectly possible to differentiate between steam and smoke based on images alone.

6. While a large number of fires are attributable to human frailty a great deal more can be done in 'building-in' fire protection at the design stage. The co-ordination of fire prevention procedure is essential and should include a review of production and structural fire risks, fire alarm and fire fighting procedure and the supervision of alterations to plant and buildings where fire risks could arise. The fire prevention engineer has some major points to bear in mind when dealing with large buildings: design requirements for fire safety, fire resistance and reliability of structural materials, suitable protection of the personnel or occupants, the building itself and the equipment.

7. Sprinkler systems are regarded by the insurers as a considerable protection against fire losses. Automatic fire fighting with the use of sprinkler systems has been known since the middle of the 19-th century. Sprinklers certainly guarantee that the thermodynamic potential of the extinguishing water is utilized to a high degree and their selective operation reduces the damage to materials by water. Sprinklers both give warning and fight the fire. Heat- or smoke-sensitive detection and alarm systems are also available; these give warning but do not fight the fire. The fire prevention engineer should take positive steps to ensure that fires are not caused and to promote the proper protection.

3. Scan through the text and write in the number of the para

graph that deals with the following topics:

1. The early days of fire fighting.
2. The purpose of the remotely monitored systems.
3. The reasons for arson.
4. Safeguards to the industrial equipment.
5. Residential fires.
6. Automatic fire fighting.
7. Sources of ignition in industry.
8. Fire prevention at the design stage.
9. Fire losses.
10. The duties of the fire prevention engineer.

Unit 8. Economics Today

Text 1. The economic system

1. **Before you start:**

1. What is an economic system?
2. What are the major kinds of economic systems?

2. Read and translate the text using the dictionary.

New vocabulary:

enterprise – крупное предприятие;
allocation – отчисление; фондирование;
scarce resources – дефицитные ресурсы;
ultimate consumer – конечный потребитель;
full employment – полная занятость;
equitable distribution of income – справедливое распределение доходов.

There are many forms of economic order, ranging from the mixed private enterprise system to partially or completely controlled economies. Regardless of their form, however, economic system is the system that a society uses for allocation and distribution of scarce resources. Private enterprise means that decisions about what and how much to produce are left to the discretion of owners and managers. In controlled economies such decisions are the responsibility of some governmental agency. There is, of course, no economy today that is completely free of governmental influence, nor is this condition necessarily undesirable. There are many beneficial services and protections available from government. The question then is a matter of degree. Irrespective of the form of economic order, it performs certain valuable functions in the life of organizations of all types. Among the functions of the economic order the most important one is to provide some means of resource allocation. In a private enterprise this function is basically performed by the price mechanism. This simply means that demand for and supply of goods and services interact to set their market price. In the case of regulated utilities, there are govern

mental agencies such as public service commissions that determine the rates that may be charged by utility companies. These rates are set at the level that will allow a fair return on investments made by the companies. This form of regulated monopoly is considered, on balance, preferable to unchecked competition. This is true because of efficiency reasons. In taking actions in the area of employment, government is attempting to control the economy in such a fashion as to help the business community operate at the level of production that will yield full employment. Without a system of distribution economy simply could not exist. A major part of this distribution system is credit. Economy flourishes on credit or extended methods of payment. Such a system literally affects every link in the distribution chain from the supplier of raw materials to the ultimate consumer. Without this vital financing function being performed, the economy would doubtless be forced to a lower order of production.

Economic goals for a nation include price stability, full employment, economic growth, and equitable distribution of income. Price stability contributes to the efficient allocation of resources and facilitates long-term planning. Full employment means that jobs are available for those seeking work. Higher standards of living require increased output per person (economic growth per capita). An equitable distribution of income capita). An equitable distribution of income means that the fruits of the economy are divided in a way that seems fair to the majority of the people. With the long-run trend toward a more sophisticated, highly integrated economic system, it is becoming increasingly important for an individual decision maker to be aware of the macroeconomic environment.

3. Answer the questions:

1. What is a system?
2. What are three main concepts of a system? What do they imply?
3. What is an economic system?
4. What functions does economic order perform?
5. What do economic goals for a nation usually include?

Text 2. The field of international business

1. Before you start:

1. What is international business?
2. Which are the world's greatest companies?

2. Read and translate the text using the dictionary.

New vocabulary:

international business – международное предпринимательство;

business transaction – деловая операция;

government-sponsored – финансируемый из государственного бюджета;

resource acquisition – получение ресурса.

International business includes all business transactions that involve two or more countries. Such business relationships may be private or governmental. In the case of private firms the transactions are for profit. Government-sponsored activities in international business may or may not have a profit orientation. There are three major motivations for private firms to pursue international business. These are to expand sales, to acquire resources, and to diversify sources of sales and supplies.

Sales expansion. Sales are limited by the number of people interested in a firm's products and services and by customers' capacity to make purchases. Since the number of people and the degree of their purchasing power is higher for the world as a whole than for a single country firms may increase their sales potentials by defining markets in international terms.

Ordinarily higher sales mean higher profits. If, for example, each sales unit has the same mark-up, more volume translates to more profits. Lucas film, for example, receives a percentage of the sales made by companies marketing Star Wars merchandise; thus Lucas film's revenues increase with each additional toy that Parker Kenner sells in the United Kingdom. In fact, profits per unit of sales may increase as sales increase. Star Wars cost approximately $10 million to produce; as more people see the film, the average production cost per viewer

decreases. International sales are thus a major motive for firms' expansion into international business. A United Nations study indicated that among the largest industrial firms in the world, about 40 percent of their sales come from outside their home markets.

Resource acquisition. Manufacturers and distributors seek out products and services as well as components and finished goods produced in foreign countries. Sometimes this is to reduce their costs: for example, Lucas film used studios in the United Kingdom in the filming of Star Wars and Kenner manufactures its Laser Pistol in Hong Kong. The potential effects on profits are obvious. The profit margin may be increased, or cost savings may be passed on to consumers, thereby permitting more people to buy the products.

3. Read the text again and answer the questions.

1.How would you define the concept 'international business'?

2. What are the main motives for a firm to join international business?

Text 3. Management is the art and science of making appropriate choices

1. **Before you start:**

1. How do you understand the word "management"?

2. What is the function of management**?**

2. Read and translate the text using the dictionary.

New vocabulary:

scientific management – научные методы управления;
managing organizations – управляющая организация;
stagnancy – застой;
business executive – коммерческий руководитель.

To one degree or another, we are all involved in managing and are constantly making decisions concerning how to spend or use our resources. Like most things in our modern, changing world, the function of management is becoming more complex. The role of the manager today is much different from what it was one hundred years, fifty years

or even twenty-five years ago. At the turn of the century, for example, the business manager's objective was to keep his company running and to make a profit. Most firms were production oriented. Few constraints affected management's decisions. Governmental agencies imposed little regulations on business.

The modern manager must now consider the environment in which the organization operates and be prepared to adopt a wider perspective. That is, the manager must have a good understanding of management principles, an appreciation of the current issues and broader objectives of the total economic political, social, and ecological system in which we live, and he must possess the ability to analyze complex problems.

The modern manager must be sensitive, and responsive to the environment – that is he should recognize and be able to evaluate the needs of the total context in which his business functions, and he should act in accord with his understanding.

Modern management must posses the ability to interact in an ever-more-complex environment and to make decisions that will allocate scarce resources effectively. A major part of the manager's job will be to predict what the environment needs and what changes will occur in the future.

Organizations exist to combine human efforts in order to achieve certain goals. Management is the process by which these human efforts are combined with each other and with material resources. Management encompasses both science and art. In designing and constructing plans and products, management must draw on technology and physical science, of course, and, the behavioral sciences can contribute to management. However much you hear about "scientific management" or "management science", in handling people aid managing organizations it is necessary to draw on intuition and subjective judgment. The science portion of management is expanding, more and more decisions can be analyzed and programmed, particularly with mathematics. But although the artistic side of management may be declining in its proportion of the whole process it will remain central and critical portion of your future jobs. In short:

Knowledge (science) without skill (art) is useless, or dangerous;

Skill (art) without knowledge (science) means stagnancy and inability to pass on learning.

Like the physician, the manager is a practitioner. As the doctor draws on basic sciences of chemistry, biology, and physiology, the business executive draws on the sciences of mathematics, psychology, and sociology.

3. Read the text again and answer the questions

1. The function of management is becoming more complex. Why?
2. What must management possess nowadays?
3. Management encompasses both science and art. In what can we see it?

Section 2

GRAMMAR PRACTICE

Unit 1. The Article (Артикль)

1. Прочитайте текст. Объясните употребление неопределенного, определенного и нулевого артиклей. Переведите текст**.**

Staying Power

People have pondered ***the*** power of nails since ***the*** Roman days. But only in ***the*** past 100 years have nails come into widespread use in homes and furniture. For centuries, blacksmiths made nails one at a time, at considerable expense, by drawing ***a*** short rod of red-hot iron, hammering one end to ***a*** point and pounding ***the*** other end to ***a*** head. By ***the*** late 1700s nailsmiths had devised hand-operated machines that could cut nails from flat iron sheets. By ***the*** 1880s steam-powered machines sped up ***the*** process and "cut nails" became less expensive; however, their strength was still variable. That changed in ***the*** early 1900s. when steel became both flexible and very strong. Machines cut nails and formed ***the*** tip and head in one step from a long spool of steel wire. That process allows manufacturers to craft many types of nail points and shanks that improve performance. Simple friction against ***a*** nail shank holds two pieces of wood together and prevents ***the*** nail from loosening as vibrations and changes in temperature and humidity expand and contract ***the*** wood's fibers.

2. Вставьте артикль a, the, -

1. ___ arm	9.___ old woman	17.___ hour
2. ___ animal	10.___ theatre	18.___ insect
3. ___ seaside	11.___orchid	19.___North Pole
4. ___actress	2. ___jungle	20.___ finger
5. ___ dog	13. ___ billion	21.___ ant
6.___ Netherlands	14. _____monkey	22. ___ woman
7. ___ actor	15. _____earache	23. ___eagle
8. ___ iPhone	16. _____ Pacific Ocean	24. ___e-book

3. Вставьте артикль a, the, -

1. Listen to ___ radio
2. ___ romance of ___ busy broker
3. Christmas Presents
4. ___ great fire of London
5. History of ___ media
6. As___ result of my work
7.___adventure of her husband
8.___busy day

4. Вставьте артикль, где необходимо.

At... beginning of... 19th century... little boy was born in... family of John Dickens, ... clerk at... office in... Portsmouth, and was named Charles. He had... sister who was older than himself, arid there were several other children in... family. When Charles was seven, he was sent to... school. He was not... strong child. He did not like to play... cricket or.. football and spent all his free time reading. In 1821 ... family went to... London and little Charles left behind him... happiest years of his childhood. His father was in... money difficulties, and... family became poorer and poorer. ... boy had to give up his studios. Mr. Dickens was put into... debtors' prison. Little Charles learned to know all., horrors and cruelty of... large capitalist city. He had to go to work at... blacking factory. He worked there from... morning till... night. When his father came out of prison, Charles was sent to... school for some time. Soon he got work as... clerk. Then he learned... stenography and became... reporter; in Parliament. In 1836 at... age of 24 Charles Dick published his first book. It was... collection of ... stories. ... title of... book was "Sketches by Boz." There were followed by "Pickwick Papers" and "Oliver Twist" and many other famous novels. Charles Dickens is one of... greatest writers of... 19th. century. His novels are now translated into most languages of... world.

Unit 2. Prepositions

Предлоги

1. Переведите следующие предложения, обращая внимание на составные предлоги и союзы.

according to – согласно чему-либо;
as far as – до;
because of – из-за, благодаря, вследствие;
by means of – с помощью, по средствам;
due to – из-за, благодаря, вследствие;
in addition to – в дополнение к, кроме;
in order to – чтобы, для того чтобы;
in spite of –несмотря на;
on account of – благодаря, вследствие, из-за;
thanks to – благодаря, из-за, вследствие;
owing to – благодаря, из-за, вследствие;

Составные союзы

as … as – так /же/ … как /и/; такой же … как /и;
as long as – /до тех пор/ пока;
as soon as – как только;
as well as – так же, как /и/; и … и;
both … and – как … , так и; и … и;
either … or – или … или; либо … либо;
in order that – /для того/ чтобы;
neither … nor – ни … ни;
so that – чтобы, для того чтобы;
the … the – чем, тем.

1. **Both** the tracks **and** the platforms are now located below the street level.
2. **In order** to get to the platforms the passengers use escalators.
3. **According to** the traffic requirements the railways have to change their schedules two times a year.
4. Automatic sound warning is given **as soon as** the slightest fault occurs.

5. **Due to** electronics most substations are now operated by remote control.
6. **In spite of** having some drawbacks the hydro-power stations may be considered promising **because of** a cheap cost of generated electricity.
7. Electric railway may use **either** direct **or** alternative current.
8. **As well as** the electrics, the diesels are capable of developing a high tractive effort at low speeds.
9. The early trains had **neither** lighting **nor** heating.
10. **In addition to** the normal-type wagons there exist special freight cars for special kinds of goods.

2. Поставьте необходимые предлоги в предложения.

about in at with to of for on

1. My sister will arrive … the station … 9 o'clock … the morning.
2. Look … that beautiful photo … my baby daughter.
3. I'm hungry. What's … lunch today?
4. This is the highest mountain … the world.
5. What do you usually do … weekends?
6. We are going … the party … Saturday.
7. I bought a new pair … sunglasses … the chemist's.
8. What do you know … Scotland?
9. The postman came … a letter … my Dad.
10. Did you speak … the boss … your salary?
11. Sam lives … home … his mother.
12. Can you help me … my drawing? - … course I can.
13. I met my future husband … a queue … the bus stop.
14. Justin is … Kristy's house.
15. The diagram is … page 76 … the left.

3. Выберите из скобок подходящий предлог.

1. Does she come … (at/in/to) school … (on/by/in) bus?
2. My office is … (near/near to/near with) the stadium.
3. Kevin often goes abroad … (in/on/for) business.
4. All the notices in the streets were … (on/by/in) French.
5. What's interesting … (on/in/at) TV … (on/at/in) the moment?

6. Sorry. I took your bag … (on/for/by) mistake.
7. Shall we go … (for/on/to) a walk?
8. Kira is happy, she is … (on/in/with) love.
9. We are waiting … (for/at/by) the rain to stop.
10. Is Sophie good … (in/on/at) roller-skating?
11. Is Tim interested … (at/in/by) marketing?
12. I'm afraid … (by/with/of) big crowds of people.
13. The forest was full … (with/of/by) mosquitoes.
14. The patients are listening … (of/to/at) Mozart.
15. Our plans depend … (on/from/in) the weather.
16. We are … (out/of/out of) peaches. Could you go and buy some?
17. I guess he annoys me … (for/on/in) purpose.
18. I'm tired of swimming … (on/at/in) the sea. Let's go to the swimming pool … (for/in/by) a change.
19. My wife spends hundreds of euros a month … (for/in/on) her nails … (in/on/for) average.
20. Our teacher is … (in/on/at) a good mood today.

4. Используйте верный предлог времени (**in, on, at, for, since, during).**

1. She has been in Africa … February.
2. Dan has had his design studio … several years.
3. The fishing season is to start … a couple of weeks.
4. The kids worked on a farm … their summer holidays.
5. My car will be ready … 3 days.
6. My sister's birthday is … September.
7. I am often very tired … Friday evenings.
8. It's too cold here … winter.
9. I got my driving license … 2018 … the age of 23.
10. We always visit our parents … Christmas.

Unit 3. Plural forms

Множественное число существительных в английском языке

1. Напишите множественное число существительных.

Н-р: one house (один дом) – many houses (много домов)

1. one watch (одни часы) – many ……
2. one child (один ребенок) – many ……
3. one leaf (один лист) – many ……
4. one mouse (одна мышь) – many ……
5. one tooth (один зуб) – many ……
6. one photo(одна фотография) – many ……
7. one man (один мужчина) – many ……
8. one dress (одноплатье) – many ……
9. one shelf (одна полка) – many ……
10. one sheep (одна овца) – many ……
11. one hero (один герой) – many ……
12. one story (одна история) – many ……
13. one dish (одно блюдо) – many ……
14. one woman (одна женщина) – many ……
15. one glass (один стакан) – many ……

2. Образуйте множественное число существительных, сделав необходимые изменения во всем предложении.

Н-р: The child is from Mexico, he is 10 years old.– The **children are** from Mexico, **they are** 10 years old.

1. The woman liked the story.
2. The white mouse is in the box.
3. The policeman is an American.
4. His wife is a secretary.
5. This is a sandwich with butter and cheese.
6. He is my favourite actor.
7. My friend is a student.
8. There is a big fish in the river.
9. The bookshelf is between the mirror and the sofa.

10. I can see a sheep in the field.

3. Образуйте множественное число имен существительных и запишите их формы в правильную колонку.

A dolphin, a fly, a dress, a shoe, a diary, a cake, a strawberry, a sandwich, a toy, a fox, a garden, a ray, a piano, an enemy, a branch, a wish, a coin, an ability.

-s **-es** **-ies**

Unit 4. Possessive case

Притяжательный падеж

1. Перепишите предложения, используя притяжательный падеж существительных. Переведите готовые предложения.

This car belongs to Sam. – This is **Sam's car.**

These apples belong to the girls. – These are **the** girls' **apples.**

1. This notebook belongs to Jane.
2. These suitcases belong to our guests.
3. This bedroom belongs to my son.
4. These keys belong to Mark.
5. This painting belongs to Picasso.
6. These poems belong to Pushkin.
7. This helicopter belongs to our boss.
8. These dictionaries belong to the students.

2. Напишите, чем является 's в каждом предложении – обозначением притяжательного падежа существительного или сокращенной формой глагола **is.**

Ann is David's wife. – 's обозначает притяжательный падеж.

Ann's a wonderful wife. – 's является сокращением глагола is (Ann is a wonderful wife.)

1. Mary's day was very hard.
2. Peter's a dentist.
3. My son's girlfriend speaks four languages.
4. She's a talented tennis-player.
5. It's cold today.
6. Kate's uncle has lost his passport.

3. Прочитайте текст и определите родственные связи героев, используя притяжательный падеж.

George and Mary are married. They have 2 children: John and Laura. Mary has a sister, Kelly. George has a brother, Rob.

George is Mary's husband.

1. Mary is _____ wife.

2. George is _____father.
3. Mary is _____ mother.
4. John is _____son.
5. Laura is _____daughter.
6. John is _____brother.
7. Laura is _____ sister.
8. Kelly is _____aunt.
9. Rob is _____ uncle.
10. John is _____nephew.
11. Laura is _____niece.

Unit 5. The Pronoun

Местоимение

1. Заполните пропуски личными местоимениями **(I, we, you, he, she, it, they, me, us, him, her, them).**

H-p: My teacher is very nice. I like… – I like **him.**

1. I work for my mother. I help … in the shop. And she gives … some money.
2. We have two dogs. We often take … for a walk. We also take a ball and our dogs like to play with …
3. My brother works at the hospital**.** … is a doctor.
4. My favorite subject is History**.** … is very exciting.
5. Tom is a good lawyer. Do you know …?
6. Look at her. … is so beautiful!
7. Where is my notebook? I can't find … .
8. We are going to the beach. You can join … .
9. I like Kate's hair. … is so thick and long.
10. These are my souvenirs. … bought … in England.

2. Замените подчеркнутые слова личными местоимениями.

H-p: I saw Bob yesterday, but Bob didn't see me. – I saw **him** yesterday, but **he** didn't see me.

1. Jack and I met Samantha. Samantha gave Jack and me a letter for you. Take the letter.
2. Den and Mike are leaving for New York. I am driving Den and Mike to the airport.
3. I'm calling Alex. I haven't seen Alex for ages. And Alex isn't at school.
4. Let's go to the library with Peter and me. Peter and I need some books in Japanese.
5. Here is our cat Felix. Felix is hungry. I will feed Felix.

3. Выберите подходящие личные и притяжательные местоимения. Переведите.

1. Give … (my, me, mine) a glass of water.

2. Who is sitting behind … (our, we, us)?3. Would you like to dance with … (he, him, his)?4. Joanna is going to meet … (them, they, their).5. It took … (he, him, his) 5 days to get to … (you, your).6. Please help … (I, me, my)

with … (me, my) homework.7. This is … (me, my, I) cat. … (His, Her, Its) name is Tom.8. She promised to help … (us, our, we) and she will keep … (she, her, he) word.

Unit 6. The Numeral

Имя числительное

1. Найдите пары: слова из первого столбика и соответствующие цифры из второго.

H-p:1 - d

1. seventy-two	a) 31
2. thirteen	b) 11
3. fifty-six	c) 660
4. eighty	d) 72
5. eighteen	e) 315
6. twenty-three	f) 100
7. eleven	g) 13
8. ninety	h) 49
9. twelve	i) 925
10. twenty	j) 18
11. nineteen	k) 80
12. forty-nine	l) 504
13. one hundred	m) 217
14. thirty-one	n) 410
15. four hundred and ten	o) 90
16. six hundred and sixty	p) 56
17. five hundred and four	q) 23
18. nine hundred and twenty-five	r) 20
19. two hundred and seventeen	s) 19
20. three hundred and fifteen	t) 12

2. Преобразуйте количественные числительные в порядковые.

H-p: one (один) – the first (первый), thirty (тридцать) – the thirtieth (тридцатый), sixty-four (шестьдесят-четыре) – the sixty-fourth (шестьдесят четвертый)

1. two
2. eighty-three
3. seven hundred and sixteen

4. twelve
5. eleven
6. twenty-five
7. ninety-six
8. thirty-eight
9. ten
10. two thousand and nine

3. Напишите указанные в скобках даты словами.

H-p: I was born on …… (13.05.1976). (Я родился ……) – I was born on the thirteenth of May, nineteen seventy-six.

1. My son was born on …… (02.12.2000).
2. Our dog was born on …… (21.08.2008).
3. My granddad was born on …… (23.06.1900).
4. My granny was born on ..... (18.02.1910

Unit 7. The Adjective

Имя прилагательное

1. Выберите в скобках правильную степень прилагательного:

1. Nick is (happier, the happiest) boy that I know.
2. Of the six cars, I like the silver one (better, best).
3. Jane's notebook is (cheaper, the cheapest) than mine.
4. This is (more delicious, the most delicious) cheese-cake I have ever had!
5. This bookcase is (more beautiful, the most beautiful) than that one.
6. Do you feel (better, the best) today than yesterday?
7. I think my cat is (prettier, the prettiest) of all the cats in the world.
8. Steve Jobs is (more famous, famouser) than Stephen Wozniak.
9. This week the weather is (hotter, more hot) than last week.
10. Our new house is (more expensive, expensiver) than the old one.
11. Girls are usually (cleaner, more clean) than boys.
12. Chemistry was (harder, the hardest) subject at school.

2. Дайте степени сравнения прилагательных.

H-p: wet – wetter – the wettest

expensive – more expensive – the most expensive

1. big 2. clever 3. good 4. pleasant 5. poor 6. bad 7. funny 8. important 9. sunny 10. far 11. comfortable 12. wise

3. Составьте из данных слов предложения и переведите их.

1. most – the Mona Lisa – in – is – painting – the – famous – the – world.
2. longer – the Don – is – the Volga – than.
3. more – Spain – Germany – than – beautiful – is.
4. London – city – in – biggest – the – England – is.
5. the – team – Adam – is – worst – the – player – in.

Unit 8. The indefinite forms

1. Раскройте скобки**,** употребив глагол в **Present Simple, Past Simple** или **Future Simple.**

1. We … (go) roller-skating last Saturday.
2. Our granny … (bake) meat-pies every weekend.
3. We … (write) an essay tomorrow.
4. I really … (enjoy) the opera yesterday.
5. Where your husband … (work) five years ago?
6. British people … (prefer) tea to coffee.
7. Tom, you … (meet) me at the railway station next Sunday?
8. Where she usually … (celebrate) her birthdays?
9. … you (have) a big family?
10. Newton … (invent) the telescope in 1668.
11. When … this accident (happen)?
12. I always … (send) Christmas cards to my grandparents.
13. Nina and Nick … (get married) in two weeks.
14. How many books they … (bring) tomorrow?
15. Stanley … (have) two sons and a daughter.

2. Поставьте глагол to be в одну из форм **Simple.**

1. … your girlfriend Italian?
2. I … afraid of spiders.
3. There … a lot of tourists in our café yesterday.
4. Peter … in Africa next winter.
5. We … never late for our Drawing classes.
6. I … 70 years old in 2050.
7. She … my neighbor last year.
8. It … usually very hot in Egypt.
9. I … born in September.
10. My parents … doctors.

3. Выпишите из текста глаголы в форме **Present Simple, Past Simple** и **Future Simple.** Переведите текст**.**

Clara had a car accident when she was ten years old. When she grew up she was afraid of cars. Then she met Brad who was a profes

sional racing driver. He wanted to help her and drove her in his car every day. So in five years Clara became a racing driver too. Now she drives 200 km per hour and takes part in sports championships. She really enjoys driving and has a lot of future plans. Next year she will open a driving school. And Clara and Brad will get married quite soon.

4. Превратите утвердительные предложения в отрицательные, обращая внимание на форму глагола-сказуемого.

1. This coat belongs to Jane.
2. I drive to Moscow once a month.
3. Your boss is very impudent.
4. The car stopped near the bank.
5. The soup was delicious.
6. The concert will start at 7 p.m.
7. Her shoes are dirty.
8. I bought the curtains for my bedroom.
9. I am a football fan.
10. Their wedding will be in spring.

Unit 9. The continuous forms

1. Поставьте глагол в форму **Present Continuous, Past Continuous** или **Future Continuous.**

to shine

1. The sun … yesterday morning.
2. The sun … brightly now.
3. Tomorrow the sun … all day long.

to write

4. I … a postcard at the moment.
5. I … a postcard when you phoned.
6. I … a lot of Christmas cards tomorrow evening.

to sit

7. We … in the garden at 3 o'clock yesterday afternoon.
8. This time tomorrow we … in the garden.
9. We … in the garden now.

2. Раскройте скобки**,** употребив глагол в форме **Present Continuous, Past Continuous** или **Future Continuous.**

1. I … (study) Japanese online from 5 till 6 tomorrow evening.
2. Listen! Why the dogs … (bark)?
3. She … (wear) a yellow coat when I saw her.
4. They … (take) their driving test next Monday.
5. I dropped my wallet when I … (get) on the bus.
6. What you … (do) in my office yesterday?
7. Bob … (feel) much better today.
8. The kids … (watch) cartoons in their room now.
9. I'm afraid she … (sleep) in ten minutes.
10. We … (have) tea soon?

3. Преобразуйте утвердительные предложения в отрицательные, обращая внимание на форму глагола-сказуемого.

1. We are enjoying the party. (Нам нравится вечеринка.)
2. He'll be playing chess in an hour. (Через час он будет играть в шахматы.)
3. They were planting flowers in the garden last May. (Они занимались посадкой цветов в саду в прошлом мае.)
4. I am looking for a job. (Я ищу работу.)
5. The phone was working yesterday. (Вчера телефон работал.)
6. Margaret will be working as a waiter during her summer holidays. (Маргарита будет работать официанткой во время летних каникул.)
7. The secretary is typing a contract. (Секретарь печатает договор.)

Unit 10. The Perfect forms

1. Поставьте глагол в форму **Present Perfect, Past Perfect** или **Future Perfect.**

to arrive

1. Our taxi … by 9 o'clock yesterday morning.
2. Let's go. The guests already … .
3. They … by the time the meeting starts.

to be

4. I am tired of waiting. Where you … ?
5. By the time I'm 30 I … a famous scientist.
6. He didn't remember where he … before the accident.

to paint

7. We … the house by next Tuesday.
8. She … more than 10 pictures already.
9. I wondered if they … the room.

2. Раскройте скобки**,** употребив глагол в форме **Present Perfect, Past Perfect** или **Future Perfect.**

1. Sam … (lose) his keys. So he can't open the door.
2. When I woke up in the morning, the rain already … (stop).
3. I hope I … (finish) my test by midnight.
4. The film turned out to be much longer than we … (expect).
5. My sister just … (leave) for the bank.
6. The girls were good friends. They … (know) each other for 5 years.
7. Mother … (lay) the table before we come.
8. I never … (try) Japanese food.
9. Ted was so happy because his dream … (come) true.
10. We … (be) to Paris many times.

3. Выберите в скобках подходящее слово или словосочетание. Переведите предложения.

1. She will have finished her resume … (on Monday/by Monday/last Monday).
2. The aircraft hasn't landed … (yet/just/already).
3. We have lived in New York … (since/from/for) three years.
4. … (After/Already/Ago) they had eaten the cake, they cleared the table.
5. They will have decorated the Christmas tree … (by the time/before/by then).
6. My uncle has … (already/yet/ago) repaired his car.
7. I haven't met them … (from/since/for) their wedding.
8. … (By the time/Already/Just) the sun set, the farmers had already stopped working.
9. Have you … (just/ever/yet) been married, Kelly?
10. … (When/How much/How long) has he known her?

Unit 11. Review of tenses in Active voice

Обзор всех времен в активном залоге

1. Раскройте скобки, употребляя глаголы в требующемся времени.

1. Where is your luggage? – I (to leave) it at the station. I (to take) it tomorrow when Nick (to come) to help me. 2. 1 (to read) about an hour when he (to come). 3. The play (not yet to begin) and the people (to talk) in the hall. 4. Yesterday I (to buy) a new pair of gloves, as I (to lose) the old ones. 5. We (to walk) in silence. He already (to tell) me all that (to be) interesting about himself, and I (to have) nothing to tell him. 6. The moon (not to rise) yet, and only two stars, like two distant lighthouses, (to shine) in the dark blue sky. 7. One night a little swallow (to fly) over the city. His friends (to fly) away to Egypt six weeks before, but he (to stay) behind. 8. What you (to do) these three months? 9. Our train starts late in the evening, so if you (to come) at seven o'clock, we still (to pack) our luggage. 10. When you (to see) him last? 11. I (to meet) him when he (to walk) across the park. 12. You ever (to act) on the stage? – Why, yes, that's what I (to do) for the last six years. 13. Don't enter the bedroom! The child (to sleep) there, and he always (to wake) up when somebody (to open) the door.

2. Раскройте скобки, употребляя глаголы в требующемся времени.

1. What you (to do) when I (to come) in? 2. When I (to come) to his house, they (to tell) me that he (to leave) an hour before. 3. On checking up his answers he (to find) out that he (to make) several mistakes. 4. When I (to leave) home, the snow already (to stop), but a strong wind (to blow). 5. You (to read) this book? – Yes, I (to read) it. I (to think) it (to be) very interesting. 6. What the children (to do) now? – Oh, they (to play) the new table game which I (to buy) for them the day before yesterday. 7. They (to reach) the corner of the street by now and (to stand) at the bus stop. 8. After we (to walk) about two hours, we arrived at a picturesque glade covered with fresh grass. 9. We could not go out because it (to rain) hard since early morning. 10. She (to teach) at our school for twenty years now. 11. Ring me up

as soon as you (to come) home. 12. He (to begin) to write his composition at three o'clock. It is already eleven, and he still (to write) it. He says he (to finish) it by twelve. 13. We (to help) our librarian to put the books in the right order for already three days, but we (to arrange) only half the books.

3. Раскройте скобки, употребляя глаголы в требующемся времени.

1. The first person whom Andrew (to see) as he (to enter) was his old nurse. She (to sit) on the sofa. During the last five years she greatly (to change) and now (to look) a very old woman. 2. She is going to read the letter she just (to receive). 3. How long you (to wait) for me? I am very sorry. 4. Yesterday I (to meet) a friend of mine whom I (not to see) for a long time. 5. Ring me up at eleven o'clock, I (not yet to sleep). 6. You (to be) late for the concert if you (not to take) a taxi. 7. The sun (to set) a long time ago, and it (to begin) to get cold. 8. When I (to come) home yesterday, my sister already (to return) and (to sit) at the fireplace looking through some old photographs. 9. He (to smoke) three cigarettes and (to look) through all the books on the shelf, when at last he (to hear) his friend's steps approaching the door. 10. He just (to approach) the door, when she (to enter). 11. He (to write) the composition for three hours and he (to say) he soon (to finish) it as he (to think) over the conclusion now. 12. Hardly I (to go) out when I (to remember) that I (to forget) to take my umbrella. 13. Where is the baby? — The nurse (to put) it to bed. 14. He said he (to work) for a long time without achieving good results.

4. Раскройте скобки, употребляя глаголы в требующемся времени.

1. When I (to come) to Pete's house last Sunday, he (to read) a new book. He (to say) he (to give) it to me soon. Today I (to take) it from him. Now I (to read) it. I (to finish) it by Friday. If you like, I (to give) it to you on Saturday when you (to come) to see me. 2. When will he come? We (to wait) for him for already half an hour. 3. On leaving the hall the students (to thank) the professor who (to deliver) the lecture. 4. We already (to cover) about ten miles when Peter, who (to look) out of the window for the last five or ten minutes, suddenly exclaimed:

"Here is the station!" 5. When morning came, the storm already (to stop), but the snow still (to fall). 6. Yesterday by eight o'clock he (to finish) all his homework, and when I (to come) to his place at nine, he (to read). 7. I (to wait) for permission to go abroad for already three weeks, but I (not to receive) the visa yet. 8. Everybody (to be) at the door of the museum, but my friend (not yet to come). 9. We (to drink) tea when the telephone (to ring). 10. Johnny noticed that everybody (to look) at him, and he (to feel) shy. 11. Light (to travel) more quickly than sound.

5. Раскройте скобки, употребляя глаголы в требующемся времени.

1. Peter (to read) by the fireplace when the door (to open) and the maid (to enter). The cook (to follow) her. 2. When the mother (to satisfy) herself that the children (to sleep) peacefully in their beds, she (to take) out the Christmas presents and carefully (to put) them into the stockings which (to hang) at the beds. 3. If you (to ring) me up tomorrow, I (to tell) you all about it. 4. The lesson (not yet to begin), and the children (to talk) loudly in the corridor. 5. I (to live) in St. Petersburg since 1991. 6. By the fifteenth of January the students (to pass) all the examinations. 7. The students (to write) the paper by dinner-time. 8. They (to sail) down the river for many hours before they (to come) to the village. 9. I (not to be) to my home town for five years. 10. The rain (to stop) by the time we (to reach) home. 11. The message (to arrive) five minutes after he (to leave) the house. 12. It (to be) nearly eleven o'clock when we (to begin) doing this work. 13. At last the reply from my grandmother (to come), and my mother (to tell) me that she (to come) soon. 14. Here you (to be) at last! I (to wait) for you for twenty minutes. You (not to be) ashamed?

6. Раскройте скобки, употребляя глаголы в требующемся времени.

1. The day (to be) cold and it (to rain). When I (to reach) home, my raincoat (to be) all wet. *I* (to take) it off, (to shake) the water off it, (to hang) it up and (to go) into the living room. My children (to play) on the carpet. When they (to see) me, they (to jump) up and (to run) up to me. 2. I (to hear) this song several times already, but *I* cannot

remember the words. I (to write) them down as soon as I (to hear) this song again. 3. Hardly he (to open) the suitcase, when he (to find) the tie which he (to think) he (to lose) long before. 4. Shut the door! The room (to be) full of smells which (to come) from the kitchen. Mother (not to like) kitchen smells in the room. 5. Last night he (to finish) the book which he (to begin) writing a year ago. 6. He said he (to listen) to the same stories for a long time. 7. By the evening he (to translate) ten pages. 8. You ever (to be) to the new stadium? — Yes, I (to be) there last Saturday. 9. The old woman was happy: she (not to see) her son for three years. 10. What you (to do) yesterday? 11. How many pages you (to translate) for today?

7. Раскройте скобки, употребляя глаголы в требующемся времени.

ANN. Hello, Kate. I am so glad you (to come) at last. Where you (to spend) the morning?

KATE. I (to be) in the bookstore choosing new books in English.

ANN. It (to rain) still? It (to be) rather dark in the room.

KATE. No, the rain (to stop), but the wind (to blow). On my way to your place I (to meet) Mary. You (to know) her?

ANN. Of course I .... (to know) her since childhood. When we (to be) children, we often (to play) together. Where you (to meet) her? I (not to see) her for a long time. What she (to look) like?

KATE. She (not to change) a bit. She (to go) to the library when I (to meet) her.

ANN. What she (to tell) you?

KATE. She (to tell) me she recently (to return) from a very interesting trip and that she (to travel) a lot and (to see) many interesting things. She (to want) to see all her friends soon.

ANN. Oh, then she (to come) to see me, too, I (to think).

KATE. Yes, that (to be) a pleasant meeting, I (to be) sure. But what (to be) the time? My watch (to stop) and I (not to know) the exact time.

ANN. It (to be) ten minutes to three.

KATE. Oh, then let’s begin working at once. At four o’clock I must go. My mother (to wait) for me at the metro station at a quarter past four.

Unit 12. The Passive voice

Страдательный залог

1. Дополните предложения, выбрав необходимый глагол по смыслу в Passive voice.

compose base observe export cancel restrict perform

1. The text _____ using excerpts from the Enerdata press release of 30 May 2013 in Grenoble.
2. In Japan electricity production _____after the Fukushima accident in March 2011.
3. The annual analysis of world energy demand_____on 2012 data for G20 countries.
4. Among the G7 countries strong alterations in using gas and coal_____in the USA and in Europe.
5. The surplus of US coal_____at very competitive prices.
6. The control of the eReader functioning_____through a sensory screen.
7. The growing share of renewable energies_____by the increased use of coal in the EU.

2. Измените предложения из активного залога в пассивный.

H-p: *ACTIVE:* High oil prices **impact** even Cina in 2011.

PASSIVE: Even China **was impacted** by high oil prices in 2011.

1. In 2011 China alone **contributed** to 80% of the world growth of electricity consumption.
2. A sensory screen **enables** the control of the eReader functioning.
3. Immediately after the accident at the Fukushima plant the management **implemented** measures to stabilize situation.
4. The increase of the coal share for electricity production **caused** the growth of CO2 emissions in the G20 countries.
5. Enerdata, an independent Research & Consulting firm, **carried out** this analysis.

6. The Tolino Shine eBook reader **provides** a size of letters tuning.

7. In 2011 high oil prices **resulted** in a decrease of oil demand in European countries, the USA and Japan.

3. Употребите правильную форму глагола в пассивном залоге.

1. The roads (cover) with the snow. – Дороги покрыты снегом.
2. Chocolate (make) from cocoa. – Шоколад изготавливается из какао.
3. The Pyramids (build) in Egypt. – Пирамиды были построены в Египте.
4. This coat (buy) four years ago. – Это пальто было куплено 4 года назад.
5. The stadium (open) next month. – Стадион будет открыт в следующем месяце.
6. Your parents (invite) to a meeting. – Твои родители будут приглашены на собрание.
7. Where is your car? – It (mend) at the moment. – Где твоя машина? – В данный момент она ремонтируется.
8. The books already (pack). – Книги уже упакованы.
9. The castle can (see) from a long distance. – Замок можно увидеть издалека.
10. The guests must (meet) at noon. - Гости должны быть встречены в полдень.

4. Измените предложения по образцу:

Н-р: Shakespeare wrote “Romeo and Juliet”. (Шекспир написал «Ромео и Джульетту».) – “Romeo and Juliet” was written by Shakespeare. («Ромео и Джульетта» была написана Шекспиром.)

1. Popov invented radio in Russia.
2. Every four years people elect a new president in the USA.
3. The police caught a bank robber last night.
4. Sorry, we don’t allow dogs in our safari park.
5. The postman will leave my letter by the door.
6. My mum has made a delicious cherry pie for dinner.
7. George didn’t repair my clock.
8. Wait a little, my neighbor is telling an interesting story.

9. My son can write some more articles about football.
10. You must clean your bedroom tonight.

5. Превратите предложения в отрицательные и переведите.

1. Ann was bitten by a homeless dog.
2. The zoo is being reconstructed at the moment.
3. The luggage must be checked at the customs.
4. Souvenirs are sold everywhere.
5. The job will be finished at 3 o'clock.

6. Дайте полные ответы на следующие вопросы.

1. Are the Olympic Games held every 10 years?
2. Is bread made from flour or potatoes?
3. Was the Eifel Tower built in Moscow?
4. Will the final exams be taken in summer or in winter?
5. When is Christmas celebrated in Europe?

Unit 13. Modal Verbs

Модальные глаголы

1. Выберите в скобках правильный вариант модального глагола. Переведите предложения.

1. He … (can't/couldn't) open the window as it was stuck.
2. Interpreters … (may/must) translate without dictionaries.
3. … (Can/May) I use me your bike for today?
4. … (May/Could) you give me the recipe for this cake?
5. I hardly ever see Jane, she … (may/might) have moved to Africa.
6. Take an umbrella. It … (may/can) rain.
7. You … (could/should) stop smoking. You know you … (cannot/must not) buy health.
8. You … (may/must) finish the article as soon as possible.
9. Liz doesn't … (ought to/have to) keep to a diet anymore.
10. Lara … (can/might) get a playstation for her birthday.
11. You … (must not/needn't) read in the dark.
12. My grandfather is retired, so he … (shouldn't/doesn't have to) go to work.
13. The fridge is full, so we … (must not/needn't) go shopping.
14. Our employees … (can/must) sign this agreement.
15. We … (may/ought to) reserve a table in advance if we want to have dinner there.
16. I … (can't/needn't) believe it! You … (have to/must) be joking.
17. Ann … (must/is to) finish school next year.
18. Sorry, I'm late. I … (needed to/had to) wait for the plumber.
19. What time do we … (should/have to) be at the railway station?
20. Don't wait for me tonight. I … (might/must) be late.
21. I … (may not/cannot) watch this film. It's too boring.
22. We've got a dishwasher, so you … (couldn't/needn't) wash-up.
23. You look very pale, I think you … (need/should) stay at home.
24. … (Could/Might) you, please, pass me the mustard?

2. Преобразуйте предложения с модальными глаголами в прошедшее время, начиная с данных слов. Используйте could, had to, was to, was allowed to.

Н-р: Bob can't dive. (Боб не умеет нырять.) – Last year Bob couldn't dive. (В прошлом году Боб не умел нырять.)

1. You must show your identity card here. (Ты должен показать удостоверение личности здесь.) – Last night …
2. We can't buy a new car. (Мы не можем купить новую машину.) – Last summer …
3. Mike may take my laptop computer for a couple of hours. (Майк может взять мой ноутбук на пару часов.) – This morning …
4. Victor has to call his mother. (Виктору нужно позвонить своей маме.) – Yesterday …
5. You don't need to paper the walls. (Вам не нужно оклеивать стены обоями.) – Yesterday …
6. She is to be at the office at 9 a.m. (Ей нужно быть в офисе в 9 утра.) – Last Friday …
7. You must not tell lies. (Ты не должен лгать.) – Last night …

3. Преобразуйте предложения с модальными глаголами в будущее время, начиная с данных слов. Используйте will be able to, will be allowed to, will have to.

Н-р: The baby can talk. (Малыш умеет разговаривать.) – Soon the baby will be able to talk. (Скоро малыш сможет разговаривать.)

1. He can't get the tickets.– I'm afraid …
2. You may use my camera. – I think …
3. I am to wait for him at the airport.– Next Sunday …
4. You must tell me the truth.– Very soon …
5. I have to take these pills 3 times a day. – Tomorrow …
6. I can read this book in Italian.– In two years …

Unit 14. Indirect speech

Косвенная речь в английском языке

1. Превратите следующие предложения в косвенную речь, сделав все необходимые изменения.

Н-р: Jack said: “ I am working hard.” (Джэк сказал: «Я много работаю.») – Jack said (that) he was working hard. (Джэк сказал, что много работает.)

I told her: “You can join us.” (Я сказал ей: «Ты можешь присоединиться к нам.») – I told her (that) she could join us.” (Я сказал ей, что она может присоединиться к нам.)

1. Fred said: “I have invented a new computer program”.
2. Mary said: “I will help my sister.”
3. They told me: “We were really happy.”
4. She said: “I live in a big apartment.”
5. He told her: “I am going to the fish market.”
6. Betty said: “I found my passport.”
7. Mr. Ford said: “I don’t like pork.”
8. Little Tim told his mother: “I am sleepy.”

2. Преобразуйте следующие просьбы и советы в косвенную речь.

Н-р: The doctor said: “Please take a deep breath, Ann.”(Доктор сказал: «Пожалуйста, сделай глубокий вздох, Аня.») – The doctor asked Ann to take a deep breath. (Доктор попросил Аню сделать глубокий вздох.)

Sara: “Don’t forget to buy some juice.” (Сара: «Не забудь купить немного сока.») – Sara reminded not to forget to buy some juice. (Сара напомнила не забыть купить немного сока.)

She said: “You should stop smoking so much, Mark.” (Она сказала: «Тебе следует прекратить так много курить, Марк.» - She advised Mark to stop smoking so much. (Она посоветовала Марку прекратить так много курить.)

1. The policeman said: “Keep the silence, please.” – The policeman asked ……
2. Mother said: “Kids, you should wash your hands before lunch.” – Mother advised ……

3. The dentist told me: “Don’t eat nuts anymore.” – The dentist warned ……

4. Tom : “Could you lend me 20 dollars, please?”– Tom asked ……

5. Mr. Walters told his sons: “You must stay away from the lake.”– Mr. Walters warned ……

6. John said: “You should see a lawyer, Ted.” – John advised ……

7. The teacher told the students: “Don’t talk during the test.”– The teacher warned ……

8. The judge said: “Mr. Brown, you must pay a big fine.” – The judge ordered ……

3. Измените вопросы на косвенную речь.

Н-р: “Where does your niece live?” («Где живет твоя племянница?») – He wanted to know where the niece lived. (Он хотел знать, где живет племянница.)

“Can you type?” («Ты умеешь печатать?») – The manager asked if I could type. (Менеджер спросил, могу ли я печатать.)

1. “Where has Jim gone?”– Maria wanted to know ……

2. “What did the workers eat?”– They asked ……

3. «Have you ever been to China, Sam – I asked ……

4. “Are you French or Italian?” – She wanted to know ……

5. “When will the next train arrive?”– I asked ……

6. “Do you grow flowers in your garden, Mrs. Smith?” – She wondered ……

Unit 15. Conditional Sentences

Условные предложения в английском языке

1. Раскройте скобки в условных предложениях I типа и поставьте глаголы в правильную форму.

H-p: If it … (rain), we … (stay) at home. (Если пойдет дождь, мы останемся дома.) – If it rains, we shall stay at home.

1. If he … (practice) every day, he … (become) a champion.
2. She … (help) us if we … (ask).
3. If they … (have) enough money, they … (open) a restaurant next year.
4. I … (not talk) to you anymore if you … (insult) me.
5. If Bob … (not keep) his word, Anna … (be angry) with him.

2. Раскройте скобки в условных предложениях II типа и поставьте глаголы в правильную форму.

H-p: If Susan … (move) to Tokyo, she … (live) near her sister. (Если бы Сюзан переехала в Токио, она бы жила рядом со своей сестрой.) – If Susan moved to Tokyo, she would live near her sister.

1. If you … (have) a driving license, you … (get) this job.
2. My dog … (be) 20 years old today if it … (be) alive.
3. I … (go) to the police if I … (be) you.
4. If people … (not buy) guns, the world … (become) safer.
5. Tom ... (not eat) much “fast food” if his wife … (cook) at home.

3. Раскройте скобки в условных предложениях III типа и поставьте глаголы в правильную форму.

H-p: John … (not have) a car accident if he … (choose) another road. (Джон не попал бы в автомобильную аварию, если бы выбрал другую дорогу.) – John wouldn’t have had a car accident if he had chosen another road.

1. I … (visit) Sarah yesterday if I … (know) that she was ill.
2. If you … (go) with me to Paris last month, you … (see) the Eifel Tower too.
3. We … (not get wet) if you … (take) an umbrella.
4. If Mum … (not open) the windows, our room … (not be) full of mosquitoes.

5. Nick … (not be) so tired this morning if he … (go to bed) early last night.

4. Подберите к первой части условных предложений (из первого столбика) их окончание (из второго столбика). Обратите внимание на тип условного предложения. Переведите получившиеся предложения.

Н-р: 1 – c (Мы бы испекли торт, если бы мы купили немного яиц вчера.)

1) We would have made a cake	a) if he hadn't shouted at them.
2) If it rains much	b) if she loses weight.
3) If I knew English well	c) if we had bought some eggs yesterday.
4) My kids wouldn't have cried	d) if I were you.
5) I would call him	e) I would be an interpreter.
6) She will put this dress on	f) the flowers will grow very fast.

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