



МИНИСТЕРСТВО ОБРАЗОВАНИЯ И МОЛОДЕЖНОЙ ПОЛИТИКИ
СТАВРОПОЛЬСКОГО КРАЯ

ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ
УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ

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ИНСТИТУТ»

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Учебно-методическое пособие
по профессиональной коммуникации на английском языке

для студентов, обучающихся по направлению 44.03.05
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Учебно-методическое пособие предназначено для студентов направления подготовки 44.03.05 Педагогическое образование (с двумя профилями подготовки). Профиль «Информатика» и «Математика». Учебно-методическое пособие включает в себя 14 тематических циклов, в каждый из которых входят профессионально-ориентированные тексты по информатике и математике, соответствующие интересам и потребностям студентам данного направления, лексические и грамматические упражнения, содействующие расширению словарного запаса, развитию навыков устной речи на английском языке, усвоению и запоминанию профессиональных терминов. Также в учебно-методическое пособие входит основной курс грамматики английского языка в таблицах и схемах и англо-русский учебный словарь, который содержит значительное количество слов, понимание которых необходимо для работы с современными информационно-телекоммуникационными технологиями.

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ПРЕДИСЛОВИЕ

Учебно-методическое пособие представляет собой курс английского языка для профессиональных целей, который является обязательным этапом языковой подготовки будущих бакалавров.

Задачами учебно-методического пособия является расширение и углубление коммуникативных навыков и фоновых знаний студентов по направлению подготовки; формирование у них навыков аналитического чтения и осмысления глубинной структуры текста; стимулирование самостоятельной деятельности и устной речи в области профессиональной деятельности будущих бакалавров.

Тематический материал учебно-методического пособия сгруппирован в 14 разделов (Units): Computers origins; Architecture (Computer Science); Computers in our life; Hardware and software; Parallel processing; World Wide Web; Neural network; Central processing unit; Internet; Microsoft Corporation; Arithmetic as the elementary branch of mathematics; Adding, subtracting, multiplying and dividing the whole numbers; Fractions and their meaning; Types of fractions. Тематическое разнообразие текстового материала дает возможность студентам не только овладеть специальной терминологией в области информационно-коммуникационных технологий, но и познакомиться с историей и современным состоянием отрасли.

Каждый раздел состоит из одного и более аутентичных текстов, сопровождаемые упражнениями, направленные на обучение различным видам чтения, на активизацию изученной лексики в речи, на стимулирование студентов к высказываниям монологического характера и участию в дискуссиях на профессиональные темы.

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UNIT I

COMPUTERS ORIGINS

The first suggestion that a machine for mathematical computation could be built was made more than a hundred years ago by the mathematician Charles Babbage. We now realize that he understood clearly all the fundamental principles of modern computers. Babbage was born in Devonshire, England, 1792. He did not receive a good education, but he taught himself mathematics so well that when he went in Cambridge, he found that he knew more algebra than his tutor. At that time mathematics in Cambridge was still under the influence of Newton and was quite unaffected by the contemporary developments on the continent. Charles Babbage was outstanding among his contemporaries because he insisted on practical application of science and mathematics. For example, he wrote widely on the economic advantages of mass productions and on the development of machine tools. In 1812 he was sitting in his room looking at a table of logarithms which he knew to be full of mistakes, when an idea occurred to him of computing all tabular functions by machinery. Babbage constructed a small working model which he demonstrated in 1822. The Royal Society supported the project and Babbage was promised a subsidy. In 1833 he began to think of building a machine which was in fact the first universal digital computer, as the expression is understood today.

Babbage devoted the rest of his life to an attempt to develop it. He had to finance all of the work himself and he was only able to finish part of the machine though he prepared thousands of detailed drawings from which it could be made. Babbage wrote more than 80 books and papers, but he was misunderstood by his contemporaries and died a disappointed man in 1871. He tried to solve by himself and with his own resources a series of problems which in the end required the united efforts of two generations of engineers. After his death his son continued his work and built part of an arithmetic's unit, which printed out its results directly on paper.

Vocabulary

to insist - настаивать

table - таблица

to devote - посвящать

to continue - продолжать

fundamental principals - основные принципы

advantage - преимущество

to print - распечатать
to finance - финансировать
computation - вычисление

1. Translate the words from Russian into English.

- 1) Математические вычисления _____
- 2) Основные принципы _____
- 3) Хорошее образование _____
- 4) Практическое применение науки и математики _____
- 5) Экономические преимущества производства _____
- 6) Логарифм _____
- 7) Подсчет функций при помощи машины _____
- 8) Конструировать _____
- 9) Рабочая модель _____
- 10) Цифровой компьютер _____
- 11) Арифметический центр _____
- 12) Распечатать результаты _____
- 13) Основные принципы современных компьютеров _____
- 14) Математик _____
- 15) Финансировать _____

2. Complete the sentences.

- 1) Babbage was born
- 2) Charles Babbage was outstanding because ...
- 3) Babbage constructed ...
- 4) In 1833 he began ...
- 5) When he went to Cambridge ...
- 6) Babbage devoted ...
- 7) Babbage wrote
- 8) He was misunderstood ...
- 9) Babbage was promised ...
- 10) His son built ...
- 11) Babbage did not receive ...
- 12) He understood clearly ...

3. Agree or disagree. Explain your choice.

- 1) Babbage knew more algebra than his tutor in Cambridge.
- 2) He received a good education.
- 3) Babbage was born in Cambridge.
- 4) Babbage insisted on the practical application of science and mathematics.
- 5) Babbage constructed a small working model and demonstrated it in 1833.
- 6) Babbage finished his machine in 1871.

- 7) He was misunderstood by contemporaries.
- 8) Babbage taught himself mathematics very well.
- 9) Mathematics in Cambridge was under the influence of Babbage.
- 10) Babbage wrote on the economic advantages of mass productions.
- 11) Babbage died a disappointed man in 1833.

4. Answer the questions to the text.

- 1) When was the first suggestion about computers made?
- 2) When did Babbage demonstrate a small working model?
- 3) Did anybody finance all of the work?
- 4) When did Babbage die?
- 5) Who continued his work?
- 6) He did not receive good education, did he?
- 7) Why was Babbage outstanding among his contemporaries?
- 8) Who wrote on the economic advantages of mass productions?
- 9) Who built apart of an arithmetic unit after his death?
- 10) When did he begin to think of building a machine?
- 11) At that time mathematics in Cambridge was under the influence of Newton, wasn't it?
- 12) Did Babbage finish his work?

5. Translate the sentences. Use the verbs in the necessary tense.

- 1) Чарльз Беббидж разработал первый компьютер более 100 лет назад.
- 2) В 1822 г. Беббидж сконструировал небольшую рабочую модель.
- 3) Ч.Беббидж написал более 80-и книг, некоторые из этих книг используют современные студенты в наше время.
- 4) В 1833 г. Ч.Беббидж начал разрабатывать первый универсальный цифровой компьютер.
- 5) После его смерти сын продолжил его работу.
- 6) Надеюсь, имя первого создателя компьютера будет известно многим поколениям.

6. Make up the following sentences negative and interrogative according to the models:

| Model 1 | Model 2 |
|---|--|
| Ch. Babbage began to think of building in 1833. | He was in his room looking at a table of logarithms. |
| Did Ch. Babbage begin to think of building in 1833? | Was he in his room looking at a table of logarithms? |
| Ch. Babbage did not begin to think of building in 1833. | He was not in his room looking at a table of logarithms. |

- 1) The Royal Society supported the project.

- 2) Charles Babbage was outstanding among his contemporaries.
- 3) At that time mathematics in Cambridge was still under the influence of Newton.
- 4) He wrote widely on the economic advantages of mass productions and on the development of machine tools.
- 5) In 1812 he was sitting in his room looking at a table of logarithms.
- 6) Which he knew to be full of mistakes.
- 7) Babbage constructed a small working model, which he demonstrated in 1822.

UNIT II

ARCHITECTURE (COMPUTER SCIENCE)

Architecture (computer science) is a general term referring to the structure of all or part of a computer system. The term also covers the design of system software, such as the operating system (the program that controls the computer), as well as referring to the combination of hardware and basic software that links the machines on a computer network. Computer architecture refers to an entire structure and to the details needed to make it functional. Thus, computer architecture covers computer systems, microprocessors, circuits, and system programs. Typically, the term does not refer to application programs, such as spreadsheets or word processing, which are required to perform a task but not to make the system run.

Architecture deals with both the design of computer components (hardware) and the creation of operating systems (software) to control the computer. Although designing and building computers is often considered the province of computer engineering, in practice there exists considerable overlap with computer science.

Design Elements. In designing a computer system, architects consider five major elements that make up the system's hardware: the arithmetic/logic unit, control unit, memory, input, and output. The arithmetic/logic unit performs arithmetic and compares numerical values. The control unit directs the operation of the computer by taking the user instructions and transforming them into electrical signals that the computer's circuitry can understand. The combination of the arithmetic/logic unit and the control unit is called the central processing unit (CPU). The memory stores instructions and data. The input and output sections allow the computer to receive and send data, respectively.

Different hardware architectures are required because of the specialized needs of systems and users. One user may need a system to display graphics extremely fast, while another system may have to be optimized for searching a database or conserving battery power in a laptop computer.

In addition to the hardware design, the architects must consider what software programs will operate the system. Software, such as programming languages and operating systems, makes the details of the hardware architecture invisible to the user. For example, computers that use the C programming language or a UNIX operating system may appear the same from the user's viewpoint, although they use different hardware architectures.

Recent Advances. One problem in computer architecture is caused by the difference between the speed of the CPU and the speed at which memory supplies instructions and data. Modern CPUs can process instructions in 3 nanoseconds (3 billionths of a second). A typical memory access, however, takes 100 nanoseconds and each instruction may require multiple accesses. To compensate for this disparity, new computer chips have been designed that contain small memories,

called caches, located near the CPU. Because of their proximity to the CPU and their small size, caches can supply instructions and data faster than normal memory. Cache memory stores the most frequently used instructions and data and can greatly increase efficiency.

Although a larger cache memory can hold more data, it also becomes slower. To compensate, computer architects employ designs with multiple caches. The design places the smallest and fastest cache nearest the CPU and locates a second larger and slower cache farther away. This arrangement allows the CPU to operate on the most frequently accessed instructions and data at top speed and to slow down only slightly when accessing the secondary cache. Using separate caches for instructions and data also allows the CPU to retrieve an instruction and data simultaneously.

Another strategy to increase speed and efficiency is the use of multiple arithmetic/logic units for simultaneous operations, called superscalar execution. In this design, instructions are acquired in groups. The control unit examines each group to see if it contains instructions that can be performed together. Some designs execute as many as six operations simultaneously. It is rare, however, to have this many instructions run together; so on average the CPU does not achieve a six-fold increase in performance.

Multiple computers are sometimes combined into single systems called parallel processors. When a machine has more than one thousand arithmetic/logic units, it is said to be massively parallel. Such machines are used primarily for numerically intensive scientific and engineering computation. Parallel machines containing as many as sixteen thousand computers have been constructed.

Vocabulary

arrangement – расположение

bus – шина

circuit – схема, цепь

consumer – потребитель

customer – клиент, покупатель, заказчик

disparity – неравенство

execution – выполнение

hardware – оборудование

hub – концентратор, хаб

laptop – портативный

multiple – многочисленный

option – вариант, выбор

overlap – совпадение

particular – особый

province – область

proximity – близость

recipient – получатель

software – программное обеспечение

specification – спецификация, требование
spreadsheet – электронная таблица
superscalar – суперскалярный
term – термин, срок
to accelerate – ускорять, разгоняться
to acquire – приобретать
to carry out – выполнять, исполнять, проводить, осуществлять
to cover – закрывать, покрывать, предусматривать, рассматривать
to expand – расширять, увеличивать
to process – обрабатывать
to refer to – ссылаться на, относиться к
to retrieve – извлекать
wire – провод, проволока

1. Translate the words from Russian into English.

- 1) Вся структура _____
- 2) Электронные таблицы _____
- 3) Создание операционных систем _____
- 4) Арифметическое/логическое устройство _____
- 5) Чрезвычайно быстро _____
- 6) Портативный компьютер _____
- 7) Языки программирования _____
- 8) С точки зрения пользователя _____

2. Complete the sentences.

1. Computer architecture refers to an entire structure and... 2. The input and output sections allow the computer to... 3. Another strategy to increase speed and efficiency is the use of... 4. Multiple computers are sometimes combined into... 5. One problem in computer architecture is caused by... 6. Architecture deals with both the design of computer components (hardware) and... 7. In designing a computer system, architects consider five major elements... 8. The control unit examines each group to see if it contains instructions that...

3. Read the words and translate the sentences.

1. to realize – *понимать, осознавать*: He **realized** that he was driving in the wrong direction.
2. file – *файл, папка*: You can create a **file** and edit it, print or delete.
3. to run – *выполнять, прогонять (программу)*: You can **run** several programs at a time.
4. to release – *выпускать (новую версию программного изделия)*: The first version of PC-DOS was **released** in 1981.

5. capability – *способность*: Windows 95 and 98 have a plug-n-play **capability**.

6. to undergo – *подвергаться, испытывать, переносить*: The latest models of computers **underwent** serious improvements.

7. to enhance – *увеличивать, усиливать, улучшать, расширять*: Windows 98 is the **enhanced** version of Windows 95.

8. click – *щелчок*: Pressing the button of the mouse twice is called a double **click**.

9. access – *доступ*: You can have **access** to Internet through a local provider.

10. multitasking – *многозадачный режим*: **Multitasking** capabilities allow to work with several programs simultaneously.

4. Make up situations using the following words.

a) to realize, capability, to represent, file, to check, to hold a conference, to show, connection, modern.

b) to enhance, to vary, to feel disappointed, at present, specialists, to run, however.

c) multitasking, hardware, software, option, computer system, customer, seller, to undergo.

5. Insert articles where necessary. Translate the sentences and explain your choice.

1. What is ... computer? 2. My favourite subject is ... Computer Science. 3. ...Internet is composed of many interconnected computer networks. 4. As government restrictions were lifted in ... early 1990s, ... Internet became commercial. 5. In ... 1990 Microsoft became ... first personal-computer software company to record ... 1 billion dollars in annual sales. 6. Browsers have become one of ... most important tools for computer network users. 7. When a computer carries out an instruction, it proceeds through ... five steps.

6. Translate the following sentences paying attention to “there + to be” and make these sentences negative and interrogative. Use the model:

Model: *Are there* various computers at our computing center?

There are not various computers at our computing center?

1. *There are* various computers at our computing center. 2. *There will be* some engineers at the seminar on programming tomorrow. 3. *There was* a lecture on cybernetics yesterday. 4. *There were* many ways of solving the problem. 5. *There are* many complex parts and units in every computer. 6. *There is* a student's scientific and technical society at our University. 7. *There are* strong ties between

AI research and psychology, neurophysiology and linguistics. 8. In most computers *there is* only one central processing unit.

7. Read and translate the text.

COMPUTER ARCHITECTURE

Processing Architecture. When a computer carries out an instruction, it proceeds through five steps. First, the control unit retrieves the instruction from memory – for example, an instruction to add two numbers. Second, the control unit decodes the instructions into electronic signals that control the computer. Third, the control unit fetches the data (the two numbers). Fourth, the arithmetic/logic unit performs the specific operation (the addition of the two numbers). Fifth, the control unit saves the result (the sum of the two numbers).

Early computers used only simple instructions because the cost of electronics capable of carrying out complex instructions was high. As this cost decreased in the 1960s, more complicated instructions became possible. Complex instructions (single instructions that specify multiple operations) can save time because they make it unnecessary for the computer to retrieve additional instructions. For example, if seven operations are combined in one instruction, then six of the steps that fetch instructions are eliminated and the computer spends less time processing that operation. Computers that combine several instructions into a single operation are called complex instruction set computers (CISC).

However, most programs do not often use complex instructions, but consist mostly of simple instructions. When these simple instructions are run on CISC architectures they slow down processing because each instruction – whether simple or complex – takes longer to decode in a CISC design. An alternative strategy is to return to designs that use only simple, single-operation instruction sets and make the most frequently used operations faster in order to increase overall performance. Computers that follow this design are called reduced instruction set computers (RISC).

RISC designs are especially fast at the numerical computations required in science, graphics, and engineering applications. CISC designs are commonly used for nonnumerical computations because they provide special instruction sets for handling character data, such as text in a word processing program. Specialized CISC architectures, called digital signal processors, exist to accelerate processing of digitized audio and video signals.

Open and Closed Architectures. The CPU of a computer is connected to memory and to the outside world by means of either an open or a closed architecture. An open architecture can be expanded after the system has been built, usually by adding extra circuitry, such as a new microprocessor computer chip connected to the main system. The specifications of the circuitry are made public, allowing other companies to manufacture these expansion products.

Closed architectures are usually employed in specialized computers that will

not require expansion – for example, computers that control microwave ovens. Some computer manufacturers have used closed architectures so that their customers can purchase expansion circuitry only from them. This allows the manufacturer to charge more and reduces the options for the consumer.

Network Architecture. Computers communicate with other computers via networks. The simplest network is a direct connection between two computers. However, computers can also be connected over large networks, allowing users to exchange data, communicate via electronic mail, and share resources such as printers.

Computers can be connected in several ways. In a ring configuration, data are transmitted along the ring and each computer in the ring examines this data to determine if it is the intended recipient. If the data are not intended for a particular computer, the computer passes the data to the next computer in the ring. This process is repeated until the data arrive at their intended destination. A ring network allows multiple messages to be carried simultaneously, but since each message is checked by each computer, data transmission is slowed.

In a star configuration, computers are linked to a central computer called a hub. A computer sends the address of the receiver and the data to the hub, which then links the sending and receiving computers directly. A star network allows multiple messages to be sent simultaneously, but it is more costly because it uses an additional computer, the hub, to direct the data.

8. Give a summary of the text using the following questions.

- 1) Tell about five steps, when a computer carries out an instruction.
- 2) Why did early computers use only simple instructions?
- 3) What is complex instructions? What is complex instruction set computers?
- 4) Are CISC designs commonly used for nonnumerical computations and why?
- 5) Where do we use Open and Closed Architectures?
- 6) What is the simplest network?
- 7) Are computers linked to a central computer called a hub?

9. Insert prepositions where necessary. Translate the sentences:

1. A browser's performance depends ... the speed and efficiency ... the user's computer. 2. He took this disk ... Jane. 3. Programs fall ... two major classes: application programs and operating system. 4. Games may be classified ... several ways. 5. ... the 1960s until the 1980s IBM dominates the global market for mainframe computers. 6. ...addition ... the hardware design, the architects must consider what software programs will operate the system. 7. Put this keyboard ... the box. 8. Experimentation may result ... new theory, such as the discovery that an artificial neural network exhibits behavior similar to neurons in the brain.

10. Choose the meanings of the words.

| | |
|--------------|--|
| ИСПОЛЬЗОВАТЬ | 1.and, 2. use, 3.any, 4.read, 5.when |
| Любой | 1.end, 2. and, 3.any, 4.use, 5. when |
| Читать | 1.divide 2. ready 3. any 4. read 5. when |
| Делить | 1. do 2. read 3. when 4. divide 5. side |
| Находить | 1. begin 2. later 3. red 4. find 5. and |
| Когда | 1. restore 2. write 3. repeat 4. when 5. Place |

11. Make up a dialogue using the following words and word combinations: computer architecture, hardware, software, major elements, networks.

UNIT III

COMPUTERS IN OUR LIFE

Yesterday's computers were tools for scientists, mathematicians, and engineers. Today many businesses and organizations own computers although they have different types of computers and use them for different purposes. Hardly a day goes by when do not make a controlled business transaction. Each time we visit the bank, use a credit card, pay a bill or a ticket a computer lurks behind the scene, recording each transaction. Computers can process data in a fraction of the time it would take to perform the same jobs manually. They reduce the paperwork involved in these transactions and also reduce costs. No area of enterprise seems without computers nowadays. Scientists build computer models of airplane crashes in order to determine the 'crash behavior' of airplanes, which in turn helps aircraft designers plan safer seats, windows, and fabrics to decrease fire hazards during a crash. Ecologists use computers to monitor environmental problems like acid rain and suggest solutions. Engineers use computers to design replacement for the damaged bones. Educators use computers in the classroom to perform chemistry experiments that might otherwise be dangerous. There seems to be no limit to computer applications. Hard copy, modem, database, peripherals: all these words refer to a relatively new and rapidly changing technology – that of the computer. Computers are changing our language, and they are also changing us. No longer are computer expert the only people who interact with computers. Today the lives of most of us are affected by computers every day.

Vocabulary

tool - инструмент

Peripheral devices (peripherals) - периферийные устройства

instruction - команда, инструкция, указание

enable - разрешать, позволять, делать возможным,

fraction of the time - за короткое время;

to lurk - скрываться, оставаться незамеченным;

transaction - сделка, группа операций;

to monitor - наблюдать, контролировать, следить;

to process - обрабатывать;

solution - решение

application - применение, использование

to interact - взаимодействовать;

to control - управлять, регулировать;

to reduce costs - сокращать затраты;

otherwise - иначе, иным образом;

to affect - влиять, воздействовать.

1. Answer the following questions:

1. Who interacted with yesterday's computers?
2. What service do computers in business provide?
3. How do ecologists use computers?
4. How do engineers use them?
5. How do educators use them?
6. Where can we find computers in our life?
7. What computer manufacturers do you know?

2. Agree or disagree with the statements. Explain your choice.

1. Today computers are operated only by scientists, mathematicians and engineers.
2. Businesses and organizations own and use only personal computers.
3. All computers are produced of the same size and power.
4. In offices computers are used only as typewriters.
5. Any kind of job can be performed with the help of the computer.
6. Our lives are affected by computers every day.
7. All country schools have computer classes.

3. Translate the sentences from Russian into English.

1. В настоящее время нельзя обойтись без компьютера.
2. Каждый день мы ходим в банк, пользуемся кредитной картой, оплачиваем счёт, или оплачиваем счета через интернет.
3. Компьютеры могут за короткое время обработать информацию.
4. Нет предела применению компьютера.
5. Экологи используют компьютеры, чтобы наблюдать за проблемами окружающей среды.
6. Учёные строят компьютерные модели самолётов.
7. Компьютеры используются в разных целях.

4. Complete the following dialogue.

Amy: Hi, Sean. How are you?

Эми: Привет, Шон. Как дела?

Sean: Hi, Amy. I'm fine, thank you. It's good to hear from you.

Шон:

Amy:

Эми: Прости, что потревожила тебя, но у меня есть одна проблема и думаю, ты мог бы помочь мне с ней.

Sean: No problem. What's happened?

Шон:

Amy: It's my computer. I've been having some problems with it lately. I know that you're good with computers, so I decided to address you. As for me, I don't understand a thing in electronic appliances.

Sean:

Amy: There are actually several problems here. First of all, my computer started to shut down unexpectedly. It wasn't like this before. Secondly, I fail to open some of my past pictures of documents. Thirdly, I can't start the music. I'm at loss. I think, perhaps, my computer has become outdated or something.

Sean:

Amy:

Sean: Yes, of course. When is it more convenient for you?

Amy:

Sean: Ok, then. I will come tomorrow evening if that's all right.

Amy:

Эми:

Шон: Понятно. Попытаюсь помочь тебе. Так, в чем проблема?

Эми:

Шон: Эти проблемы достаточно серьезные. Мне нужно прийти и взглянуть на него. Полагаю, что проблема отключения может быть от перегрева. Возможно, тебе нужно сменить батарею. Когда определенные файлы не открываются, это может быть из-за вируса. Поэтому нам понадобится надежная антивирусная программа. И проблема с аудио файлами может быть связана с тем, что плеер устарел. Его нужно обновить.

Эми: Вот видишь, я знала, что ты компьютерный гений. Ты мог бы заглянуть ко мне?

Шон:

Эми: Чем раньше, тем лучше. Я не работаю на этой неделе, поэтому можешь прийти в любое время.

Шон:

Эми: Так отлично. Буду ждать тебя.

5. Make the monologue on the following topic and discuss it with your groupmates.

„ Imagine that you could only use one of the following: a computer, a mobile phone or a car. Which one would you use and why? “

6. Read and translate the following sentences paying attention to modal verbs and their equivalents:

1. Information or data *can* be stored in the computer's memory. 2. An analog computer *is able to* calculate by using physical analog of numerical measurements. 3. The first automatic computers *could* operate at the low speed. 4. My friend was happy when at last he *might* work at the computing centre. 5. Every student *must* know that a digital computer performs reasonable operations. 6. We *ought* to help him to solve this problem by a personal computer. 7. Bits are the smallest units of information that a computer *can* process. 8. The languages used to program computers *must* have simple logical structures. 9. With Windows, the user *can* move a cursor around on the computer screen with a mouse. 10. In Asteroids, a player *needs* to destroy asteroids before they crash into the player's ship.

7. Translate the messages of the computer paying attention to modal verbs.

1. Cannot recover
nonremovable drive X.

а) Не следует восстанавливать несъемный накопитель X.

б) Нельзя восстановить несъемный накопитель X.

в) Восстановите несъемный накопитель X.

2. Target disk cannot be used
for back-up.

а) Диск, на который осуществляется запись, не может быть использован для резервного копирования.

б) Не используйте диск, на который осуществляется запись, для резервного копирования.

в) Диск, на который осуществляется запись, может быть использован для резервного копирования.

3. Unable to create table in
resident memory.

а) Возможно создать таблицу в резидентной памяти.

б) Невозможно создать таблицу в резидентной памяти.

в) Создайте таблицу в резидентной памяти.

4. Target diskette may be unusable.

а) Дискета, на которую ведется запись, является непригодной.

б) Дискета, на которую ведется запись, может быть непригодной.

в) Дискета, на которую ведется запись, должна быть пригодной.

5. Drive letter must be specified.

а) Буква, определяющая дисковод, должна быть определена

б) Буква, определяющая дисковод, может быть определена

в) Буква, определяющая дисковод, определена

UNIT IV

HARDWARE AND SOFTWARE

The hardware- the devices composing a computer system.

Computer hardware can be divided into four categories:

- input hardware.
- processing hardware.
- storage hardware.
- output hardware.

Input hardware

Input hardware collects data and converts them into a form suitable for computer processing. The most common input device is a keyboard. It looks very much like a typewriter. The mouse is hand-held device connected to the computer by a small cable. As the mouse is rolled across the desktop, the cursor moves across the screen. When the cursor reaches the desired location, the user usually pushes a button on the mouse once or twice to give a command to the computer.

Processing hardware

Processing hardware directs the execution of software instructions in the computer. The most common components of processing hardware are the central processing unit and main memory.

The central processing unit (CPU) is the brain of the computer. It reads and interprets software instructions and coordinates the processing.

Memory is the component of the computer in which information is stored. There are two types of computer memory: RAM and ROM.

RAM (random access memory) is the memory, used for creating, loading and running programs.

ROM (read only memory) is computer memory used to hold programmed instructions to the system. The more memory you have in your computer, the more operations you can perform.

Storage hardware

The purpose of storage hardware is to store computer instructions and data hardware.

There are two types of output; soft copy and hard copy. Soft copy is information that is seen on a television-like screen, of monitor, attached to most computers. It is temporary; as soon as the monitor is turned off or new information is required, the old information vanishes. Hard copy is output printed in a tangible form such as on paper. It can be read without using the computer and can be conveniently carried around, written on, or passed to other readers.

Vocabulary:

keyboard - клавиатура

mouse - мышь

to load - загружать

instruction - команда

error message - сообщение об ошибке

input - ввод

output - вывод информации

button - кнопка

memory - память

to create - создавать

soft copy - мягкая копия, изображение на экране

hard copy - твердая копия, машинная (печатная)

to attach - подсоединяться, подключать

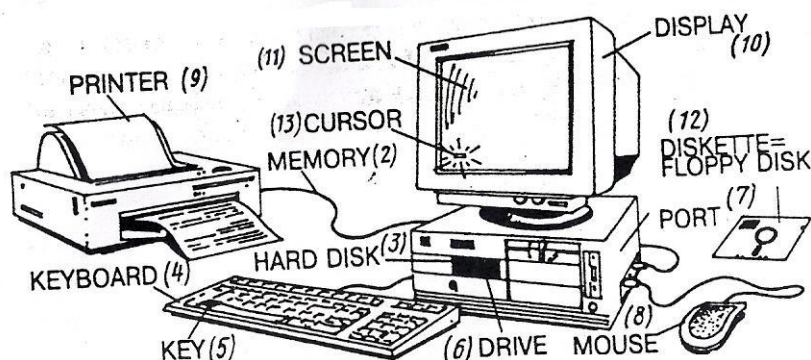
1. Answer the following questions.

1. What is hardware?
2. What does input hardware do?
3. What is the most common input device?
4. What are the main components of processing hardware?
5. What is the purpose of storage hardware?
6. What do you think is a hard copy?

2. Agree or disagree with the statements.

1. Hard copy vanishes when we turn the computer off.
2. There are two types of input: soft copy and hard copy.
3. Processing occurs in the part of the computer called the mouse.
4. Information is stored in memory.
5. The more memory you have in your computer, the less operations you can perform.
6. Hard copy can be read without using the computer.

3. Fill in the table. Use the picture.



| № | English terms | |
|----|---------------|----------------------|
| 1 | | |
| 2 | | Память |
| 3 | Hard disk | |
| 4 | Keyboard | |
| 5 | | |
| 6 | | Дисковод |
| 7 | | Гнездо, порт |
| 8 | Mouse | |
| 9 | Print | |
| 10 | Display | |
| 11 | | Экран |
| 12 | | Дискета, гибкий диск |
| 13 | Cursor | |

4. Translate the sentences from Russian into English.

- Одним из входных устройств является клавиатура.
- К устройствам ввода относятся мышка, сканер, микрофон и многое другое.
- Самая главная часть компьютера – центральный процессор.
- Память помогает компьютеру хранить информацию.
- Чем больше память в компьютере, тем больше операций можно выполнять.
- Существуют 2 типа входных устройств: мягкая копия и твердая копия.

5. Translate the following sentences in passive voice and make these sentences active:

- Peripheral devices can be attached to the computer.
- Computer instructions are also called programs.
- This work is usually performed manually.
- Computers were used to monitor environmental problems.
- Today the lives of most of us are affected by a computer every day.
- This program was damaged by a computer virus.
- The 'crash behavior' of the airplane was determined by the scientists.
- This monitor was designed by Dell Corp.

6. Make the following sentences passive:

- Hardware also includes peripheral devices_____
- Educators used computers in the classroom_____
- Scientists can build computer models of airplane crashes_____

4. Today many businesses and organizations own computers_____
5. These organizations used computers for different purposes_____
6. Computers can process data in a fraction of time_____
7. Engineers use computers to design replacement for the damaged bone____
8. Computers are changing our life_____

7. Translate the following sentences using Past Simple Active or Past Simple Passive.

- | | |
|-------------------|---------------------|
| 1. Я сказал | 1. Мне сказали |
| 2. Я посоветовал | 2. Мне посоветовали |
| 3. Он разрешил | 3. Мне разрешили |
| 4. Она нарисовала | 4. Ей нарисовали |
| 5. Мы дали | 5. Нам дали |
| 6. Они оставили | 6. Им оставили |
| 7. Он увидел | 7. Его увидели |

8. Open the brackets choosing the right form of the verb (Active or Passive).

1. They (posted/ were posted) the letters yesterday
2. The letters (posted/ were posted) yesterday
3. You can (leave/ be left) your case here.
4. The computer can (leave/ be left) here
5. He will (tell/ be told) me the rules of using.
6. The truth (tell/ be told) me.
7. The machine mustn't (use/ be used) after 6 o'clock.
8. They mustn't (use/ be used) the machine.
9. Tomorrow I will (pay/ be paid) the bill.
10. Tomorrow the bill will (pay/ be paid).

SOFTWARE

Not visible units *the software*. Software consists of the instruction to the computer that enable it to do things, such as finding the best sport to drill for oil or playing a competitive game of bridge.

These computer instructions are also called programs. Computers only do what they are told to do. Often, we want the computer to do the same thing again and again. So standard instructions – programs – are produced. First though, a computer needs to know where, within its built-in memory, to store information



and how to work on it. This basic program is called an operating system (or disk operating system). One popular operating system, introduced with the IBM PC, is called MS-DOS (from (M)icro(S)oft (D)isk (O)preating (S)ystem). A recent development from MS-DOS lets you tell the computer what to do by “pointing” at things (words or pictures) on the screen. This easy to use system is called Windows. Once the computer has its operating instructions it can be programmed to do many other things.

Popular computer programs include word processors, databases, spreadsheets and graphics:

- Word processors produce the printed words – immaculately.
- Databases store masses of information – for easy access.
- Spreadsheets record and process numbers.
- Graphics programs produce graphs and diagrams.

Vocabulary:

data base - база данных

access - доступ

graphic - графика

operating system - операционная система

to enable - разрешать, позволять, допускать

Spreadsheet - электронная таблица

to record - записывать

built-in - встроенный

disk operating system - дисковая операционная система

word processor - текстовый процессор

directory - директория

root - корневой

subdirectory - субдиректория

7. Answer the following questions.

1. What is a software?
2. What is the basic program?
3. What system is called Windows?
4. What system is introduced with the IBM PC?
5. What does word processor do?
6. What is database?
7. What programs produce graphs?
8. What are popular computer programs?

8. Find the term for each definition.

1. The instructions, which control what a computer does.

2. This program produces diagrams.
3. This program store information for easy access.
4. This program produces the printed word.
5. Information in an electronic form that can be stored and processed by a computer.

9. Find the translation of the word.

| | |
|----------------------------|--|
| a) клавиша | 1. port, 2. key, 3. root, 4. drive, 5. mouse |
| b) память | 1. error, 2. message, 3. memory, 4. mouse, 5. name |
| c) имя | 1. port, 2. key, 3. name, 4. mouse, 5. character |
| d) порт | 1. keyboard, 2. driver, 3. mouse, 4. port 5. file |
| e) корневой | 1. hard, 2. floppy, 3. personal, 4. root, |
| f) дисковод | 1. disk, 2. diskette, 3. drive, 4. port, 5. screen |
| j) экран | 1. display, 2. keyboard, 3. memory, 4. error, 5. screen |
| h) ошибка | 1. root, 2. error, 3. port, 4. print, 5. message |
| i) программное обеспечение | 1. program, 2. hardware, 3. software, 4. command, 5. character |
| к) символ | 1. error, 2. command, 3. name, 4. character, 5. message |

9. Choose the words concerning to hardware and concerning to software.

| hardware | software |
|----------|----------|
| | |
| | |

1) program, 2) drive, 3) print, 4) device, 5) keyboard, 6) root directory, 7) floppy disk, 8) memory, 9) hard diskette, 10) key, 11) character, 12) mouse, 13) error message, 14) computer, 15) file, 16) command, 17) screen, 18) display;

11. Translate the sentences from Russian into English.

1. Программное обеспечение представляет собой инструкции, позволяющие компьютеру выполнять различные задачи.

2. Одна из наиболее популярных операционных систем называется Майкрософт.

3. Компьютерные программы включают в себя текстовый редактор, базу данных, графику.

4. Текстовый редактор отвечает за печать.

5. База данных сохраняет массу информации.

12. Form nouns from the verbs by adding the suffix:

- **“ion”** (to direct – direction): to subtract, to select, to react, to construct, to act.
- **“sion”** (to divide – division): to decide, to include, to conclude, to exclude.
- **“ation”** (to compute – computation): to inform, to combine, to determine, to represent, to polarize.
- **“ment”** (to equip – equipment): to arrange, to require, to measure, to state, to replace, to establish, to develop.
- **“er”, “or”**(to work – worker): to invent, to compose, to calculate, to operate, to act, to react, to receive, to transmit, to select, to use, to combine.

UNIT V

PARALLEL PROCESSING

Parallel Processing, computer technique in which multiple operations are carried out simultaneously. Parallelism reduces computational time. For this reason, it is used for many computationally intensive applications such as predicting economic trends or generating visual special effects for feature films.

Two common ways that parallel processing is accomplished are through multiprocessing or instruction-level parallelism. Multiprocessing links several processors – computers or microprocessors (the electronic circuits that provide the computational power and control of computers) – together to solve a single problem. Instruction-level parallelism uses a single computer processor that executes multiple instructions simultaneously.

If a problem is divided evenly into ten independent parts that are solved simultaneously on ten computers, then the solution requires one tenth of the time it would take on a single nonparallel computer where each part is solved in sequential order. Many large problems are easily divisible for parallel processing; however, some problems are difficult to divide because their parts are interdependent, requiring the results from another part of the problem before they can be solved.

Portions of a problem that cannot be calculated in parallel are called serial. These serial portions determine the computation time for a problem. For example, suppose a problem has nine million computations that can be done in parallel and one million computations that must be done serially. Theoretically, nine million computers could perform nine-tenths of the total computation simultaneously, leaving one-tenth of the total problem to be computed serially. Therefore, the total execution time is only one-tenth of what it would be on a single nonparallel computer, despite the additional nine million processors.

Future Trends and Applications. When a parallel processor performs more than 1000 operations at a time, it is said to be massively parallel. In most cases, problems that are suited to massive parallelism involve large amounts of data, such as in weather forecasting, simulating the properties of hypothetical pharmaceuticals, and code breaking. Massively parallel processors today are large and expensive, but technology soon will permit an SIMD processor with 1024 processing elements to reside on a single integrated circuit.

Researchers are finding that the serial portions of some problems can be processed in parallel, but on different architectures. For example, 90 percent of a problem may be suited to SIMD, leaving 10 percent that appears to be serial but merely requires MIMD processing. To accommodate this finding two approaches are being explored: heterogeneous parallelism combines multiple parallel

architectures, and configurable computers can change their architecture to suit each part of the problem.

In 1996 International Business Machines Corporation (IBM) challenged Garry Kasparov, the reigning world chess champion, to a chess match with a supercomputer called Deep Blue. The computer utilized 256 microprocessors in a parallel architecture to compute more than 100 million chess positions per second. Kasparov won the match with three wins, two draws, and one loss. Deep Blue was the first computer to win a game against a world champion with regulation time controls. Some experts predict these types of parallel processing machines will eventually surpass human chess playing ability, and some speculate that massive calculating power will one day substitute for intelligence. Deep Blue serves as a prototype for future computers that will be required to solve complex problems.

Vocabulary

array – массив

bottleneck – узкий; затор

despite – несмотря на

draw – ничья, лотерея, жеребьевка

evenly – равномерно, ровно

feature – черта, особенность, передача; художественный

flexible – гибкий

hypothetical – гипотетический

inadvertently – неумышленно

integrated – интегрированный, объединенный

loss – утрата, убыток, потеря, проигрыш

merely – просто, только

pharmaceutical – фармацевтический

portion – часть, доля, удел, участь

safe – безопасный, благополучный, надежный

similarly – подобным образом, таким же образом

stream – течение, поток

to accommodate – предоставлять, вмещать, оказывать услугу

to accomplish – завершать, достигать

to challenge – бросать вызов, оспаривать

to generate – производить, вызывать, создавать

to occur – происходить, случаться, встречаться

to overwrite – переписывать

to permit – позволять, разрешать, давать возможность

to predict – предсказывать

to prevent – предотвращать

to reign – царствовать, царить

to reside – проживать

to share – делить, разделять, владеть совместно

to speculate – размышлять

to substitute – заменять, замещать

to surpass – превосходить

1. Ask 10 questions to the text and give answers to them.

2. Translate the words and word combinations from Russian into English.

- 1) соединять несколько процессоров _____
- 2) выполнять многочисленные команды _____
- 3) независимые части _____
- 4) в последовательном порядке _____
- 5) решить задачу _____
- 6) огромное количество данных _____
- 7) параллельно и последовательно _____
- 8) время выполнения _____

3. Find the equivalents:

- | | |
|----------------|----------------|
| 1. accept | 1. загружать |
| 2. character | 2. запоминать |
| 3. decision | 3. извлекать |
| 4. instruction | 4. команда |
| 5. to boot | 5. отвечать |
| 6. to compare | 6. оценивать |
| 7. to evaluate | 7. принимать |
| 8. to respond | 8. решение |
| 9. to retrieve | 9. символ |
| 10. to store | 10. сравнивать |

4. Read the words and translate the sentences.

1. format – *формат*: Sound files are supported in mp3 format.
2. interface – *интерфейс (область взаимодействия между человеком и компьютером)*: Windows 95 & 98 are still the most popular operating systems with a friendly interface.
3. to browse – *просматривать*: We can browse through Internet sites using various browser programs.
4. character – *знак, символ, цифра, буква*: Special characters are used in phonetic translation.
5. data – *данные*: Computers work with data in binary format.
6. hardware – *оборудование, «железо»*: Hardware are devices composing a computer system.
7. software – *компьютерные программы*: Software are programs for directing the operation of a computer.
8. instruction – *команда*: Programs are instructions that tell the hardware

how to perform a task.

9. decision – *решение*: Information is used by computer for decision making.

10. to evaluate – *оценивать*: Computers can evaluate data and process them.

5. Give the degrees of comparison of the following adjectives and adverbs:
good, large, slowly, fast, complex, simple, late, many, sophisticated, powerful, clean, famous, little, clever, expensive, cheap, practical, dark, dark, quick, easy, comfortable.

6. Fill the gaps using as.....as; so....as.

1. The computer today is ...comfortable... it was yesterday.

2. It is not ... modern ... it looks.

3. Software is...important hardware.

4. This instruction is... easy ... that one.

5. The data is not ... difficult ... I expected.

6. His computer is not ... powerful ... mine.

7. Translate the following sentences paying attention to degrees of comparison of the adjective.

1. Это самый удобный интерфейс, который мы когда-либо использовали.

2. Компьютер самая важная часть оборудованного рабочего места любого специалиста.

3. Данная компьютерная программа гораздо легче в использовании, чем предыдущая.

4. Решение этой программной задачи труднее, чем мы думаем.

5. Этот компьютер дороже, но он лучше по оборудованию, поэтому мы его приобретем для нашего офиса.

8. Read and translate the following text.

PARALLEL ARCHITECTURE

In 1966 American electrical engineer Michael Flynn distinguished four classes of processor architecture (the design of how processors manipulate data and instructions). Data can be sent either to a computer's processor one at a time, in a single data stream, or several pieces of data can be sent at the same time, in multiple data streams. Similarly, instructions can be carried out either one at a time, in a single instruction stream, or several instructions can be carried out simultaneously, in multiple instruction streams.

Serial computers have a Single Instruction stream, Single Data stream (SISD) architecture. One piece of data is sent to one processor. For example, if 100 numbers had to be multiplied by the number 3, each number would be sent to the

processor, multiplied, and the result stored; then the next number would be sent and calculated, until all 100 results were calculated. Applications that are suited for SISD architectures include those that require complex interdependent decisions, such as word processing.

A Multiple Instruction stream, Single Data stream (MISD) processor replicates a stream of data and sends it to multiple processors, each of which then executes a separate program. For example, the contents of a database could be sent simultaneously to several processors, each of which would search for a different value. Problems well-suited to MISD parallel processing include computer vision systems that extract multiple features, such as vegetation, geological features, or manufactured objects, from a single satellite image.

A Single Instruction stream, Multiple Data stream (SIMD) architecture has multiple processing elements that carry out the same instruction on separate data. For example, a SIMD machine with 100 processing elements can simultaneously multiply 100 numbers each by the number 3. SIMD processors are programmed much like SISD processors, but their operations occur on arrays of data instead of individual values. SIMD processors are therefore also known as array processors. Examples of applications that use SIMD architecture are image-enhancement processing and radar processing for air-traffic control.

A Multiple Instruction stream, Multiple Data stream (MIMD) processor has separate instructions for each stream of data. This architecture is the most flexible, but it is also the most difficult to program because it requires additional instructions to coordinate the actions of the processors. It also can simulate any of the other architectures but with less efficiency. MIMD designs are used on complex simulations, such as projecting city growth and development patterns, and in some artificial-intelligence programs.

Parallel Communication. Another factor in parallel-processing architecture is how processors communicate with each other. One approach is to let processors share a single memory and communicate by reading each other's data. This is called shared memory. In this architecture, all the data can be accessed by any processor, but care must be taken to prevent the linked processors from inadvertently overwriting each other's results.

An alternative method is to connect the processors and allow them to send messages to each other. This technique is known as message passing or distributed memory. Data are divided and stored in the memories of different processors. This makes it difficult to share information because the processors are not connected to the same memory, but it is also safer because the results cannot be overwritten.

In shared memory systems, as the number of processors increases, access to the single memory becomes difficult, and a bottleneck forms. To address this limitation, and the problem of isolated memory in distributed memory systems, distributed memory processors also can be constructed with circuitry that allows different processors to access each other's memory. This hybrid approach, known as distributed shared memory, eliminates the bottleneck and sharing problems of both architectures.

10. Give a summary of text using answers the following questions.

1. Who distinguished four classes of processor architecture?
2. When did Flynn distinguish four classes of processor architecture?
3. What is Single Data Stream architecture?
4. What does MISD processor replicate?
5. What has SIMD?
6. How do processors communicate with each other?
7. What is an alternative method?

9. Complete the sentences and translate them:

1. One piece of data is sent to... 2. SIMD processors are therefore also known as... 3. A Single Instruction stream, Multiple Data stream (SIMD) architecture has... 4. Problems well-suited to MISD parallel processing include... 5. Examples of applications that use SIMD architecture are... 6. This architecture is the most flexible, but it is also... 7. Serial computers have... 8. MIMD designs are used on complex simulations, such as...

10. Read the following international words and guess their meaning: active, passive, practical, problem, programming, experiment, to consult, form, regularly, to construct, to control, peripheral, efficient.

11. Make up a dialogue using the following words and word combinations: Parallel Processing, two common ways, problems, four classes of processor architecture, Parallel Communication.

UNIT VI.

WORLD WIDE WEB

World Wide Web (WWW), computer-based network of information resources that a user can move through by using links from one document to another. The information on the World Wide Web is spread over computers all over the world. The World Wide Web is often referred to simply as “the Web.”

History. The World Wide Web was developed by British physicist and computer scientist Timothy Berners-Lee as a project within the European Organization for Nuclear Research (CERN) in Geneva, Switzerland. Berners-Lee first began working with hypertext in the early 1980s. His implementation of the Web became operational at CERN in 1989, and it quickly spread to universities in the rest of the world through the high-energy physics community of scholars. Groups at the National Center for Supercomputing Applications at the University of Illinois in Champaign-Urbana also researched and developed Web technology. They developed the first major browser, named Mosaic, in 1993. Mosaic was the first browser to come in several different versions, each of which was designed to run on a different operating system. Operating systems are the basic software that control computers.

The architecture of the Web is amazingly straightforward. For the user, the Web is attractive to use because it is built upon a graphical user interface (GUI), a method of displaying information and controls with pictures. The Web also works on diverse types of computing equipment because it is made up of a small set of programs. This small set makes it relatively simple for programmers to write software that can translate information on the Web into a form that corresponds to a particular operating system. The Web’s methods of storing information associatively, retrieving documents with hypertext links, and naming Web sites with URLs make it a smooth extension of the rest of the Internet. This allows easy access to information between different parts of the Internet.

Future Trends. People continue to extend and improve on World Wide Web technology. Computer scientists predict that users will likely see at least five new ways in which the Web has been extended: new ways of searching the Web, new ways of restricting access to intellectual property, more integration of entire databases into the Web, more access to software libraries, and more and more electronic commerce.

HTML will probably continue to go through new forms with extended capabilities for formatting Web pages. Other complementary programming and coding systems such as Visual Basic scripting, Virtual Reality Markup Language (VMRL), Active X programming, and Java scripting will probably continue to gain larger roles in the Web. This will result in more powerful Web pages, capable of bringing information to users in more engaging and exciting ways.

On the hardware side, faster connections to the Web will allow users to download more information, making it practical to include more information and more complicated multimedia elements on each Web page. Software, telephone, and cable companies are planning partnerships that will allow information from the Web to travel into homes along improved telephone lines and coaxial cable such as that used for cable television. New kinds of computers, specifically designed for use with the Web, may become increasingly popular. These computers are less expensive than ordinary computers because they have fewer features, retaining only those required by the Web. Some computers even use ordinary television sets, instead of special computer monitors, to display content from the Web.

Vocabulary:

ADSL (Asymmetric Digital Subscriber Loop) – ассиметричная цифровая абонентская линия

applet – (от application) апплет, приложение

authorized – санкционированный, уполномоченный

browser – браузер, программа просмотра Web, навигатор

CERN (European Organization for Nuclear Research) – Европейская организация по ядерным исследованиям

coaxial – коаксиальный

commodity – товар, продукт

community – общественность, община

complementary – дополнительный

compound – составной, сложный; смесь, соединение

dial-up – коммутируемый

diverse – разнообразный

engaging – привлекательный

FTP (File Transfer Protocol) – протокол передачи файлов

funds – средства, запасы, фонды

HTML (Hypertext Markup Language) – язык гипертекстовой разметки

hub – концентратор

introduction – введение, знакомство

ISDN (Integrated Services Digital Network) – цифровая сеть с комплексными услугами

mainframe – вычислительная машина

marketplace – рыночная (базарная) площадь; рынок

merchant – торговец

mutual – взаимный, обоюдный, общий, совместный

resemblance – сходство

retailer – розничный торговец

revenue – доходы

router – маршрутизатор (в сети)

scholar – стипендиат, ученый

script – сценарий, шрифт, конспект

smooth – гладкий, спокойный, мягкий

straightforward – честный, прямой, открытый

subscription – подписка, (членский) взнос

survey – производить осмотр; осматривать

TCP/IP (Transmission Control Protocol/Internet Protocol) – протокол управления передачей / межсетевой протокол

to bear – носить, поддерживать, выносить, терпеть

to complement – дополнять

to dedicate – посвящать

to designate – назначать, обозначать

to download – загружать (в память)

to encompass – охватывать

to gain – увеличить, приобретать, набирать, обеспечивать, побуждать

to incorporate – содержать, включать

to issue – издавать, выдавать

to navigate – управлять, определять маршрут

to release – освобождать, выпускать, отпускать, передавать

to retain – сохранять, удерживать

to wire – телеграфировать

URL (Uniform Resource Locator) – унифицированный указатель (идентификатор) ресурса

1. Ask five general and five alternative questions to the text «World wide web» and give short answers to them.

2. Translate these words into English.

Распространяться по компьютерам; от одного документа к другому; компьютерное оборудование; извлекать документы; маленький набор программ; остальная часть мира; по всему миру.

3. Read the words and translate the sentences.

1. to respond – *отвечать*: Computers *respond* to the instructions in the programs.

2. processing – *обработка данных*: Data *processing* is done by Central Processing Unit.

3. to accept – *принимать*: Computer *accepts* information in form of characters called data.

4. to compare – *сравнивать*: Logical circuits *compare* signals.

5. to activate – *активизировать, приводить в действие*: Smoking in the house *activates* fire alarm system.

6. to boot – *загружать*: We can choose *boot* sequence from different disks.

7. to store – *запоминать, хранить*: Computers are used *to store* information in the digital form.

8. to install – *устанавливать, инсталлировать*: Some computer devices need drivers to be *installed*.
9. to retrieve – *извлекать информацию*: Information can be *retrieved* when needed for processing.
10. sequence – *последовательность*: Robots can do a *sequence* of motions according to their program.

4. Find the equivalents:

- | | |
|------------------------------|-----------------------------------|
| 1. the input of a computer | 1. наличие и отсутствие |
| 2. an auxiliary equipment | 2. перфорированные отверстия |
| 3. at the rate of | 3. устройство вывода |
| 4. a high-speed line-printer | 4. высокоскоростное |
| 5. for efficient use | построчно-печатающее |
| 6. a storage device | устройство |
| 7. a factor of advantage | 5. коэффициент преимущества |
| 8. the output unit | 6. со скоростью |
| 9. punched holes | 7. для эффективного использования |
| 10. presence and absence | 8. вспомогательное оборудование |
| | 9. устройство ввода компьютера |
| | 10. запоминающее устройство |

5. Read the messages. Pay attention to the structure.

- | | |
|---|-----------------------------------|
| a) <u>bad command</u> неверная команда | прилагательное + существительное |
| б) <u>input file</u> входной файл | существительное + существительное |
| в) <u>end of input file</u> окончание входного файла | существительное + существительное |

6. Write down the numbers of the sentences concerning the following structures (ex.5).

1. list device; 2. printer file; 3. path of parameter; 4. current directory; 5. root directory; 6. invalid path; 7. incorrect parameter; 8. destination disk; 9. invalid argument; 10. default file; 11. bad file; 12. file name; 13. allocation table; 14. DOS partition; 15. input file; 16. device drive; 17. current date; 18. internal command.

7. Translate the word combinations paying attention to the structures (ex.5).

Root directory, destination disk, graphics printer file, name of device, input file, incorrect number of parameters, insufficient space, volume label, insufficient room, parallel printer, keyboard system file, non – system drive error, invalid drive

specification, current keyboard code, insufficient disk space, illegal device name, incompatible system size, incorrect DOS version.

8. Find the translation for the following words and write down the numbers of the sentences concerning these words.

1. разрабатывать – a) discover, b) delete, c) edit, d) develop
2. загружать – a) insert, b) boot, c) process, d) realize
3. удалять – a) manage, b) install, c) run, d) delete
4. редактировать – a) switch, b) edit, c) store, d) fill
5. совместимый – a) interchangeable, b) dependable, c) compatible, d) portable
6. улучшенный – a) enhanced, b) enlarged, c) entered, d) enriched
7. выполнять – a) activate, b) investigate, c) delete, d) perform
8. обеспечивать – a) instruct, b) promote, c) provide, d) deal
9. программа – a) command, b) control, c) program, d) system

9. Arrange synonyms in pairs and translate them: to take in, a figure, to arrange, to show, to carry out, a digit, to calculate, little, to display, small, to receive, to position, instruction, data, location, command, information, cell, to perform, to compute.

10. Read and translate the text without a dictionary. What is the main idea of this abstract?

A WEB OF COMPUTERS

Like all computer networks, the Web connects two types of computers—clients and servers – using a standard set of rules for communication between the computers. The server computers store the information resources that make up the Web, and Web users use client computers to access the resources. A computer-based network may be a public network – such as the worldwide Internet – or a private network, such as a company's intranet. The Web is part of the Internet. The Internet also encompasses other methods of linking computers, such as Telnet, File Transfer Protocol, and Gopher, but the Web has quickly become the most widely used part of the Internet. It differs from the other parts of the Internet in the rules that computers use to talk to each other and in the accessibility of information other than text. It is much more difficult to view pictures or other multimedia files with methods other than the Web.

Enabling client computers to display Web pages with pictures and other media was made possible by the introduction of a type of software called a *browser*. Each Web document contains coded information about what is on the page, how the page should look, and to which other sites the document links.

How the Web Works. When users want to access the Web, they use the Web

browser on their client computer to connect to a Web server. Client computers connect to the Web in one of two ways. Client computers with dedicated access to the Web connect directly to the Web through a router (a piece of computer hardware that determines the best way to connect client and server computers) or by being part of a larger network with a direct connection to the Web. Client computers with dial-up access to the Web connect to the Web through a modem, a hardware device that translates information from the computer into signals that can travel over telephone lines. Some modems send signals over cable television lines or special high-capacity telephone lines such as Integrated Services Digital Network (ISDN) or Asymmetric Digital Subscriber Loop (ADSL) lines. The client computer and the Web server use a set of rules for passing information back and forth. The Web browser knows another set of rules with which it can open and display information that reaches the client computer.

Web servers hold Web documents and the media associated with them. They can be ordinary personal computers, powerful mainframe computers, or anywhere in the range between the two. Client computers access information from Web servers, and any computer that a person uses to access the Web is a client, so a client could be any type of computer. The set of rules that clients and servers use to talk to each other is called a protocol. The Web, and all Internet formats, uses the protocol called TCP/IP (Transmission Control Protocol/Internet Protocol). However, each part of the Internet – such as the Web, gopher systems, and File Transfer Protocol (FTP) systems – uses a slightly different system to transfer files between clients and servers.

The address of a Web document helps the client computer find and connect to the server that holds the page. The address of a Web page is called a Uniform Resource Locator (URL). A URL is a compound code that tells the client's browser three things: the rules the client should use to reach the site, the Internet address that uniquely designates the server, and the location within the server's file system for a given item.

The Web holds information in many forms, including text, graphical images, and any type of digital media files: including video, audio, and virtual reality files. Some elements of Web pages are actually small software programs in their own right. These objects, called applets (from a small application, another name for a computer program), follow a set of instructions written by the person that programmed the applet. Applets allow users to play games on the Web, search databases, perform virtual scientific experiments, and many other actions.

The codes that tell the browser on the client computer how to display a Web document correspond to a set of rules called Hypertext Markup Language (HTML). Each Web document is written as plain text, and the instructions that tell the client computer how to present the document are contained within the document itself, encoded using special symbols called HTML tags. The browser knows how to interpret the HTML tags, so the document appears on the user's screen as the document designer intended. In addition to HTML, some types of objects on the Web use their own coding. Applets, for example, are mini-computer

programs that are written in computer programming languages such as Visual Basic and Java.

Client-server communication, URLs, and HTML allow Web sites to incorporate hyperlinks, which users can use to navigate through the Web. Hyperlinks are often phrases in the text of the Web document that link to another Web document by providing the document's URL when the user clicks their mouse on the phrase. The client's browser usually differentiates between hyperlinks and ordinary text by making the hyperlinks a different color or by underlining the hyperlinks. Hyperlinks allow users to jump between diverse pages on the Web in no particular order. This method of accessing information is called *associative access*, and scientists believe it bears a striking resemblance to the way the human brain accesses stored information. Hyperlinks make referencing information on the Web faster and easier than using most traditional printed documents.

11. Complete the sentences and translate them:

1. The server computers store the information resources that... 2. Web servers hold Web documents and... 3. The client computer and the Web server use... 4. Hyperlinks make referencing information on the Web faster and... 5. The browser knows how to... 6. The set of rules that clients and servers use to talk to each other is called... 7. The Web is part of... 8. Hyperlinks are a defining feature of the Web – they allow users to...

12. Learn the following dialogue by heart or make up your own.

– Can you tell me anything about the Web?
– Of course, I can. What do you want to know?
– World Wide Web is a computer-based network of information resources, isn't it?
– Yes, it is. The information on the Web is spread over computers all over the world.
– What do the users do if they want to access the Web?
– They just use the Web browser on their client computer to connect to a Web server.

UNIT VII

NEURAL NETWORK

Neural Network, in computer science, highly interconnected network of information-processing elements that mimics the connectivity and functioning of the human brain. Neural networks address problems that are often difficult for traditional computers to solve, such as speech and pattern recognition.

Neural networks were initially studied by computer and cognitive scientists in the late 1950s and early 1960s in an attempt to model sensory perception in biological organisms. Neural networks have been applied to many problems since they were first introduced, including pattern recognition, handwritten character recognition, speech recognition, financial and economic modeling, and next-generation computing models.

How a Neural Network Work. Neural networks fall into two categories: artificial neural networks and biological neural networks. Artificial neural networks are modeled on the structure and functioning of biological neural networks. The most familiar biological neural network is the human brain. The human brain is composed of approximately 100 billion nerve cells called neurons that are massively interconnected.

Biological neurons have a fairly simple large-scale structure, although their operation and small-scale structure is immensely complex. Neurons have three main parts: a central cell body, called the soma, and two different types of branched, treelike structures that extend from the soma, called dendrites and axons. Information from other neurons, in the form of electrical impulses, enters the dendrites at connection points called synapses. The information flows from the dendrites to the soma, where it is processed. The output signal, a train of impulses, is then sent down the axon to the synapses of other neurons.

Artificial neurons, like their biological counterparts, have simple structures and are designed to mimic the function of biological neurons. The main body of an artificial neuron is called a node or unit. Artificial neurons may be physically connected to one another by wires that mimic the connections between biological neurons, if, for instance, the neurons are simple integrated circuits.

Artificial neurons may be either discrete or continuous. Discrete neurons send an output signal of 1 if the sum of received signals is above a certain critical value called a threshold value; otherwise they send an output signal of 0. Continuous neurons are not restricted to sending output values of only 1s and 0s; instead they send an output value between 1 and 0 depending on the total amount of input that they receive – the stronger the received signal, the stronger the signal sent out from the node and vice-versa. Continuous neurons are the most commonly used in actual artificial neural networks.

Vocabulary:

a node – узел
above – над, выше, свыше
adjustable – регулируемый
back-propagation – обратное распространение, обратная передача
bottom – дно, низ
capable – способный
continuous – непрерывный, сплошной, длительный
counterpart – копия, двойник
counterparts – лица, вещи, взаимно дополняющие друг друга
decay – разрушение, разложение
discrete – дискретный
extensive – обширный, значительный
fairly – справедливо, довольно
fiber – волоконный
firing rate – КПД (доля работающих нейронов)
immensely – бесконечно, необычайно
in full strength – в полном составе
insight – проницательность, понимание
integrated – интегрированный, объединенный
likelihood – вероятность
loop – петля, спираль
mainframe – вычислительная машина
perception – восприятие, понимание, ощущение
random – случайный, произвольный
relevant – уместный, относящийся к делу
sample – проба, образец
sense – чувство, ощущение, смысл
sophisticated – изощренный, изысканный
strength – сила, прочность, крепость
target – цель
to be composed of – состоять из
to delay – откладывать, задерживать, медлить
to discourage – обескураживать, озадачивать, разочаровывать
to discriminate – различать
to encounter – встретиться с; сталкиваться с
to expose to – подвергать
to extract – удалять, добывать, вытягивать
to generalize – обобщать
to mimic – имитировать, подражать
to reinforce – укреплять, подкреплять
to respond – реагировать, поддаваться
to restrict – ограничивать
to simulate – симулировать, изображать

to train on – направлять на
top – верхняя часть, вершина
train – ход, цепь
vertebrate – позвоночное
wire – проволока, провод
withstand – выдерживать

1. Answer the following questions:

1. What is Neural Network?
2. Who studied networks?
3. When did cognitive and computer scientists start to study networks?
4. Where can specialists use the networks?
5. What are artificial neural network and biological neural networks?
6. How many parts have neurons?
7. What is « synapses»?
8. May artificial neurons be either discrete or continuous?
9. What is continuous neurons?
10. What neurons are more commonly used in actual artificial neural networks?

2. Translate these words and word combinations into English.

Функционирование человеческого мозга; способность к обучению; ограниченный набор примеров; распознавание образов; компьютерные модели следующего поколения; биологические нейронные сети; подражать функции биологических нейронов; искусственные нейроны.

3. Read the words and translate the sentences. Make your own sentences using these words.

1. handling – *обращение (с чем-либо), обработка, перемещение, транспортировка*: Handling of heavy parts can be done by robots.
2. to substitute – *заменять, использовать вместо чего-либо*: Robots can substitute people in some monotonous operations.
3. simplification – *упрощение*: The simplification of design results in lower production costs.
4. to monitor – *контролировать*: Computer can be used to monitor automatic operation of the machine tool.
5. to require – *нуждаться, требовать*: The house requires painting.
6. to achieve – *достигать*: Only hard work allows to achieve success.
7. available – *имеющийся в наличии, доступный*: The information is available to anyone.
8. to eliminate – *устранять, ликвидировать*: Digital recording of sound

eliminates noises from the musical records.

9. to verify – *проверять, подтверждать*: All theories must be verified by experiments.

10. solution – *решение, раствор*: It was difficult to find the solution of the problem.

4. Arrange synonyms in pairs and translate them: memory, for example, a step, a routine, calculation, location, permanent numbers, block diagram, to call, to share, storage, a stage, constant numbers, computation, subroutine, to term, for instance, sub code, to divide, a program, cell, flow chart.

5. Make questions from the words in brackets using necessary tense of the verb.

Example: 1. (ever/ heard/ Neural Network) Have you ever heard about Neural Network?

2. (last week, eliminate, mistake) _____
3. (always/ use/ computer programs) _____
4. (next year/ sort out/ this problem) _____
5. (ever/ substitute/ robots) _____
6. (yesterday/ work/ computer) _____
7. (tomorrow/ discuss/ the system) _____
8. (now/ discrete neurons/ send) _____
9. (every day/ install/ computer devices) _____
10. (regularly/ compare/ our results) _____

2. Complete these sentences using today/ this year/ this term etc.

Example: 1. I saw Tom's computer yesterday but I haven't seen him today.

2. I read a scientific article yesterday but _____
3. Last year the company made a profit but this year _____
4. He complemented this program last term but _____
5. It issued a lot of noise but _____
6. My friend retrieved a lot of information yesterday but we _____

2. Supply either the Present Simple or the Present Perfect in the following sentences.

3.

1. I cannot tell about the instruction, I (not read) _____ it yet.
2. Every day I (use) _____ my computer in the office and at home.
3. We (discuss) _____ the interface this week?
4. Students usually (study) _____ computer science and engineering and at the University.
5. It is a pity, but I (not buy) _____ this browser yet.

6. As a rule we (store) _____ a lot of information in the computer.
7. Something (go) _____ wrong with my computer.
8. I already (send) _____ my information.
9. We (buy) _____ a new computer set this year.

4. Rewrite the sentences using the Present Perfect and the Past Simple:

Example: I am writing a letter to my foreign partner (already. yesterday).
 I have already written a letter to my foreign partner.
 I wrote a letter to my foreign partner yesterday.

1. The system is eliminating the mistake. (a few minutes ago. not yet) _____
2. The bell is ringing, (just; some minutes ago) _____
3. He is going to solve this problem in a few days. (already; last week) _____
4. We are receiving the signals now. (yesterday; many times) _____
5. Students are reading scientific books by John von Neumann. (this month; last year) _____
6. The teacher is explaining a new rule. (Just; at the previous lesson) _____
7. They are discussing this problem again. (many times; a few days ago) _____
8. Hyperlinks are making referencing information on the Web. (just, yesterday) _____
9. The company is selling the computer over the Internet. (just; an hour ago) _____
10. Who is your partner speaking to? (yesterday, just) _____

5. Read the text. What is the main idea of this text?

DIFFERENCES BETWEEN NEURAL NETWORKS AND TRADITIONAL COMPUTERS

Neural networks differ greatly from traditional computers (for example personal computers, workstations, mainframes) in both form and function. While neural networks use a large number of simple processors to do their calculations, traditional computers generally use one or a few extremely complex processing units. Neural networks also do not have a centrally located memory, nor are they programmed with a sequence of instructions, as are all traditional computers.

The information processing of a neural network is distributed throughout

the network in the form of its processors and connections, while the memory is distributed in the form of the weights given to the various connections. The distribution of both processing capability and memory means that damage to part of the network does not necessarily result in processing dysfunction or information loss. This ability of neural networks to withstand limited damage and continue to function well is one of their greatest strengths.

Neural networks also differ greatly from traditional computers in the way they are programmed. Rather than using programs that are written as a series of instructions, as do all traditional computers, neural networks are “taught” with a limited set of training examples. The network is then able to “learn” from the initial examples to respond to information sets that it has never encountered before. The resulting values of the connection weights can be thought of as a ‘program’.

Neural networks are usually simulated on traditional computers. The advantage of this approach is that computers can easily be reprogrammed to change the architecture or learning rule of the simulated neural network. Since the computation in a neural network is massively parallel, the processing speed of a simulated neural network can be increased by using massively parallel computers – computers that link together hundreds or thousands of CPUs in parallel to achieve very high processing speeds.

6. Find the equivalents.

- | | |
|----------------|------------------------|
| 1. term | 1. применять |
| 2. spreadsheet | 2. расширять |
| 3. specify | 3. ускорять |
| 4. eliminate | 4. частый |
| 5. combine | 5. объединять |
| 6. frequent | 6. электронная таблица |
| 7. accelerate | 7. термин |
| 8. expand | 8. ликвидировать |
| 9. employ | 9. точно определять |
| 10. purchase | 10. покупка |

7. Read and translate the following sentences paying attention to the meaning of the word «yet»:

yet – (пока) еще, однако, но, хотя

1. *Yet* the data for processing information appeared to be more important than the data for storing information in this case. 2. In cases where we must write instructions involving addresses of constants that have not *yet* been specially assigned, we usually use the symbolic coding. 3. The program must be debugged if the errors have not *yet* been corrected. 4. *Yet* in practice, programmers desire the computer to take alternative ways of acting.

8. Read and translate the text.

NEURAL NETWORK LEARNING

In all biological neural networks the connections between particular dendrites and axons may be reinforced or discouraged. For example, connections may become reinforced as more signals are sent down them, and may be discouraged when signals are infrequently sent down them. The reinforcement of certain neural pathways, or dendrite-axon connections, results in a higher likelihood that a signal will be transmitted along that path, further reinforcing the pathway. Paths between neurons that are rarely used slowly atrophy, or decay, making it less likely that signals will be transmitted along them.

The role of connection strengths between neurons in the brain is crucial; scientists believe they determine, to a great extent, the way in which the brain processes the information it takes in through the senses. Neuroscientists studying the structure and function of the brain believe that various patterns of neurons firing can be associated with specific memories.

Connection Weights. To mimic the way in which biological neurons reinforce certain axon-dendrite pathways, the connections between artificial neurons in a neural network are given adjustable *connection weights*, or measures of importance. When signals are received and processed by a node, they are multiplied by a weight, added up, and then transformed by a nonlinear function. The effect of the nonlinear function is to cause the sum of the input signals to approach some value, usually +1 or 0. If the signals entering the node add up to a positive number, the node sends an output signal that approaches +1 out along all of its connections, while if the signals add up to a negative value, the node sends a signal that approaches 0. This is similar to a simplified model of how a biological neuron functions – the larger the input signal, the larger the output signal.

Training sets. Computer scientists teach neural networks by presenting them with desired input-output training sets. The input-output training sets are related patterns of data. For instance, a sample training set might consist of ten different photographs for each of ten different faces. The photographs would then be digitally entered into the input layer of the network. The desired output would be for the network to signal one of the neurons in the output layer of the network per face. Beginning with equal, or random, connection weights between the neurons, the photographs are digitally entered into the input layer of the neural network and an output signal is computed and compared to the target output. Small adjustments are then made to the connection weights to reduce the difference between the actual output and the target output. The input-output set is again presented to the network and further adjustments are made to the connection weights because the first few times that the input is entered, the network will usually choose the incorrect output neuron. After repeating the weight-adjustment process many times for all input-output patterns in the training set, the network learns to respond in the desired manner.

A number of different neural network learning rules, or algorithms, exist and use various techniques to process information. Common arrangements use some sort of system to adjust the connection weights between the neurons automatically. The most widely used scheme for adjusting the connection weights is called error back-propagation, developed independently by American computer scientists Paul Werbos (in 1974), David Parker (in 1984/1985), and David Rumelhart, Ronald Williams, and others (in 1985). The back-propagation learning scheme compares a neural network's calculated output to a target output and calculates an error adjustment for each of the nodes in the network. The neural network adjusts the connection weights according to the error values assigned to each node, beginning with the connections between the last hidden layer and the output layer. After the network has made adjustments to this set of connections, it calculates error values for the next previous layer and makes adjustments. The back-propagation algorithm continues in this way, adjusting all of the connection weights between the hidden layers until it reaches the input layer. At this point it is ready to calculate another output.

9. Ask the following questions.

1. What is biological neural networks?
2. How many connections become reinforced?
3. What is dendrite-axon connections?
4. What is the role of connection strengths between neurons in the brain?
5. What can we call people, who studying the structure and functions of the brain?
6. What is connection weights? What is for can we use it?
7. What is training sets?
8. Where should we use various techniques to process information?
9. What is « error back-propagation»?
10. Who developed theory «error back- propagation»?

10. Translate the sentences paying attention to pronouns « both...and», «either ...or», «neither...nor».

1. We both participated in this work.
2. You have given me two examples, both are correct.
3. Both students and teacher were there.
4. Both adult people and children use the computer.
5. This computer is both good and cheap.
6. You may choose either Microsoft 95 or Microsoft 97.
7. Either of the examples is correct.
8. Use either source. I do not mind which.
9. Which of two computers may I use? You may take either.
10. Either he or I must do it.

11. Neither of the statements is true.
12. I can agree in neither case.
13. He has not selected the numbers of instructions. Neither have I.
14. Neither he nor I designed the interface.
15. We accepted neither offer.
16. Both connection weights and training sets are important for Network learning.

11. Translate the sentences into English paying attention to pronouns « both...and», «either ...or», «neither...nor».

1. И то, и другое выражение правильно, но первое привычнее.
2. Каждый из этих компьютеров можно использовать.
3. Мне нравится ни эта клавиатура, ни та.
4. Или он или я удалим эту ошибку в программе.
5. Я не могу согласиться ни в том, ни в другом случае.

12. Make five sentences using pronouns « both...and», «either ...or», «neither...nor».

13. Read the international words and guess their meaning: final, base, container, register, subject, transmission, million, disk, serial, track, resistor, reaction, technology, dio de, result, to generate, element.

14. Learn the dialogue by heart or make up your own one.

- Are there two categories of neural network?
- Yes, they are: artificial neural networks and biological neural networks.
- What is the most familiar biological neural network?
- It is the human brain, which is composed of approximately 100 billion nerve cells called neurons.
- What are the main parts of neuron?
- Biological neurons have three parts: a central cell body, called soma, and two different types of branched, treelike structures that extend from the soma, called dendrites and axons.
- But what about artificial neurons?
- The main body of an artificial neuron is called a node or unit.

15. Topics for discussion:

1. Artificial neural networks and biological neural networks.
2. Neural networks and traditional Computers.
3. Neural network learning.

UNIT VIII

CENTRAL PROCESSING UNIT

Central Processing Unit (CPU), in computer science, microscopic circuitry that serves as the main information processor in a computer. A CPU is generally a single microprocessor made from a wafer of semiconducting material, usually silicon, with millions of electrical components on its surface. On a higher level, the CPU is actually a number of interconnected processing units that are each responsible for one aspect of the CPU's function. Standard CPUs contain processing units that interpret and implement software instructions, perform calculations and comparisons, make logical decisions (determining if a statement is true or false based on the rules of Boolean algebra), temporarily store information for use by another of the CPU's processing units, keep track of the current step in the execution of the program, and allow the CPU to communicate with the rest of the computer. *CPU Function.* A CPU is similar to a calculator, only much more powerful. The main function of the CPU is to perform arithmetic and logical operations on data taken from memory or on information entered through some device, such as a keyboard, scanner, or joystick. The CPU is controlled by a list of software instructions, called a computer program. Software instructions entering the CPU originate in some form of memory storage device such as a hard disk, floppy disk, CD-ROM, or magnetic tape. These instructions then pass into the computer's main random access memory (RAM), where each instruction is given a unique address, or memory location. The CPU can access specific pieces of data in RAM by specifying the address of the data that it wants.

As a program is executed, data flow from RAM through an interface unit of wires called the bus, which connects the CPU to RAM. The data are then decoded by a processing unit called the instruction decoder that interprets and implements software instructions. From the instruction decoder the data pass to the arithmetic/logic unit (ALU), which performs calculations and comparisons. Data may be stored by the ALU in temporary memory locations called registers where it may be retrieved quickly. The ALU performs specific operations such as addition, multiplication, and conditional tests on the data in its registers, sending the resulting data back to RAM or storing it in another register for further use. During this process, a unit called the program counter keeps track of each successive instruction to make sure that the program instructions are followed by the CPU in the correct order.

Branching Instructions. The program counter in the CPU usually advances sequentially through the instructions. However, special instructions called branch or jump instructions allow the CPU to abruptly shift to an instruction location out of sequence. These branches are either unconditional or conditional. An unconditional branch always jumps to a new, out of order instruction stream. A

conditional branch tests the result of a previous operation to see if the branch should be taken *Clock Pulses*. The CPU is driven by one or more repetitive clock circuits that send a constant stream of pulses throughout the CPU's circuitry. The CPU uses these clock pulses to synchronize its operations. The smallest increments of CPU work are completed between sequential clock pulses. More complex tasks take several clock periods to complete. Clock pulses are measured in Hertz, or number of pulses per second. For instance, a 100-megahertz (100-MHz) processor has 100 million clock pulses passing through it per second. Clock pulses are a measure of the speed of a processor.

Fixed-Point and Floating-Point Numbers. Most CPUs handle two different kinds of numbers: fixed-point and floating-point numbers. Fixed-point numbers have a specific number of digits on either side of the decimal point. This restriction limits the range of values that are possible for these numbers, but it also allows for the fastest arithmetic. Floating-point numbers are numbers that are expressed in scientific notation, in which a number is represented as a decimal number multiplied by a power of ten. Scientific notation is a compact way of expressing very large or very small numbers and allows a wide range of digits before and after the decimal point. This is important for representing graphics and for scientific work, but floating-point arithmetic is more complex and can take longer to complete. Performing an operation on a floating-point number may require many CPU clock periods. A CPU's floating-point computation rate is therefore less than its clock rate. Some computers use a special floating-point processor, called a coprocessor, which works in parallel to the CPU to speed up calculations using floating-point numbers. This coprocessor has become standard on many personal computer CPUs, such as Intel's Pentium chip.

Vocabulary

abruptly – внезапно, резко

ALU (Arithmetic / Logic Unit) – арифметическое/логическое устройство

arsenide – арсенид

avenue – проход, дорога, путь

Boolean algebra – булева алгебра, алгебра логики

branch instructions – команды ветвления

bulky – громоздкий

CD-ROM (Compact Disk Read Only Memory) – компакт-диск

Clock Pulses – тактовая частота

competitive – конкурентоспособный, основанный на конкуренции

core – оперативная память на магнитных сердечниках, жила, сердечник, ядро микропроцессора

CPU (Central Processing Unit) – центральный микропроцессор, ЦПУ

decoder – декодер, декодирующее устройство, дешифратор

density – плотность

fixed-point numbers – числа с фиксированной запятой (точкой)

flags – флаги, признаки, индикаторы

floating-point numbers – числа с плавающей запятой (точкой)
 floppy disc – дискета, гибкий (магнитный) диск
 gallium – галлий
 hard disk – жесткий диск, дисковод, винчестер
 IC (integrated circuit) – интегральная микросхема, ИС
 immense – необъятный, огромный
 increment – увеличение, приращение, инкремент
 jump instructions – команды перехода
 kit – набор, комплект, конструктор
 maintenance – поддержание, содержание, обслуживание, утверждение
 overwhelming – полный, подавляющий, невыносимый
 print – шрифт, эстамп, гравюра, отпечаток, след
 program counter – счетчик команд, программный счетчик
 quantum – квантовый
 RAM (Random Access Memory) – оперативная память, оперативное запоминающее устройство, ОЗУ
 ROM (Read-Only Memory) – постоянное запоминающее устройство, ПЗУ
 rate – скорость
 relay – реле, переключатель
 semiconductor – полупроводник
 shift – сдвиг
 silicon – кремний
 sophisticated – изощренный, изысканный
 subsequent – последующий
 subsequent to – вслед за
 temporarily – временно
 to amplify – усиливать
 to contribute – делать вклад, вносить, участвовать
 to etch – гравировать, запечатлеть
 to expose – раскрывать, обнажать
 to originate from – происходить от/из
 to originate in – зарождаться в
 to pursue – преследовать, осуществлять, заниматься
 to synchronize – сверять, синхронизировать
 to synchronize with – совпадать (по времени) с
 tremendously – чрезвычайно
 tube – труба, камера
 wafer – (кремниевая) пластина, «вафля»

1. Complete the sentences.

1. A CPU is generally a single microprocessor made from...
2. Standard CPUs contain...
3. The main function of the CPU is...

4. As a program is executed, data flow from RAM through an interface unit of wires called...
5. The program counter in the CPU usually advances sequentially...
6. A conditional branch tests...
7. An unconditional branch always jumps...
8. Clock pulses are measured in Hertz...
9. Most CPUs handle two different kinds of numbers...
10. Floating-point numbers are numbers that...

2. Translate these words and word combinations into English.

- 1) Полупроводниковый материал _____
- 2) ответственный за один аспект функции _____
- 3) выполнять арифметические операции _____
- 4) ячейка памяти _____
- 5) выполнять вычисления и сравнения _____
- 6) для дальнейшего использования _____
- 7) в правильном порядке _____
- 8) отправлять данные назад _____

3. Ask the questions to the underlined words.

Example: 1. The ALU performs specific operations such as addition, multiplication, and conditional tests on the data in its registers. – What does The ALU perform?

2. Fixed-point numbers have a specific number of digits on either side of the decimal point.

3. This restriction limits the range of values that are possible for these numbers.

4. More complex tasks take several clock periods to complete.

5. Some computers use a special floating-point processor, called a coprocessor.

4. Read the international words and guess their meaning:

permanent, constant, diagram, code, symbol, function, alternative, line, term, symbolism, specific, actual, characteristic, to illustrate, catalogue, to consume massive amounts of energy, transistor densities, by the advent of the microprocessor.

5. Find the equivalents:

- | | |
|-------------------------|------------------------|
| 1. then | 1. точно |
| 2. thus | 2. легко |
| 3. however | 3. ясно |
| 4. whereas | 4. вместо чего-либо |
| 5. perhaps | 5. кроме того |
| 6. also | 6. вероятно |
| 7. sometimes | 7. также |
| 8. there | 8. следовательно |
| 9. in other words | 9. однако |
| 10. moreover | 10. затем |
| 11. instead of | 11. таким образом |
| 12. hence | 12. иногда |
| 13. the current chapter | 13. там |
| 14. in fact | 14. более того |
| 15. specifically | 15. другими словами |
| 16. often | 16. в действительности |
| 17. in addition to | 17. часто |
| 18. easily | 18. данная глава |
| 19. clearly | 19. тогда как |
| 20. precisely | 20. специально |

6. Read the words and translate the sentences.

1. to develop – *развивать, разрабатывать, конструировать*: The scientists have developed a new theory of Universe.

2. (to) charge – *заряд, оплата, заряжать (аккумулятор)*: Electrons in the atom have the negative charge. You should charge the battery (It's empty).

3. to involve – *включать в себя, содержать*: This research involves many complex experiments.

4. (to) aim – *цель, стремиться*: The aim of the experiment was to obtain numerical results.

5. exact – *точный*: Mathematics is an exact science.

6. major – *главный, больший, более важный*: Mathematics, Physics and Technical drawing are the major subjects for engineers.

7. means – *средство*: Telephone is means of communication.

8. area – *площадь, область, сфера деятельности*: Russia has the largest area of land in the world.

9. necessary – *необходимый*: Knowledge of English is absolutely necessary nowadays.

10. numerous – *многочисленный*: Numerous experiments were made to

confirm the new theory.

7. Learn the following dialogue by heart or make up your own one.

- Do you know anything about the CPU?
- Well, I know that it is a microscopic circuitry that serves as the main information processor in a computer.
- Is a CPU similar to a calculator?
- Yes, you are right, but it is much more powerful.
- And what is the main function of the CPU?
- The main function of the CPU is to perform arithmetic and logical operations on data taken from memory or on information entered through some device, such as keyboard, scanner or joystick.

8. Match the part of the sentence on the left with the part on the right.

| | |
|---------------------------------------|--|
| 1. I would buy the computer | A. if my parents buy a new computer. |
| 2. If I had taken my teacher's advice | B. I would study computer science. |
| 3. If you help me | C. I would not have left the university. |
| 4. I will study well | D. if it was cheaper. |
| 5. If I had a lot of free time | E. I won't be late for work. |

9. Open the brackets using «Conditional I» in the following sentences.

Example: 1. If our tablet ... (charge), we ... (miss) the call by skype. – If our tablet charges, we will miss the call by skype.

- 2. If he ... (practice) every day, he ... (become) a programmer.
- 3. She ... (help) us if we ... (ask).
- 4. If they ... (have) enough money, they ... (buy) a computer next year.
- 5. I ... (not use) floppy disk anymore if you ... (install) RAM.
- 6. If students ... (not study) well, they ... (not be) a highly qualified specialist.

10. Open the brackets using «Conditional II» in the following sentences.

Example: If Susan ... (move) to Tokyo, she ... (work) in the computer company. – If Susan moved to Tokyo, she would work the computer company.

- 1. If you ... (have) these documents, you ... (get) this job. (Если бы у тебя были водительские права, ты бы получил эту работу.)
- 2. I ... (go) to the police if I ... (be) you. (Я бы обратился в полицию на твоём месте.)
- 3. If we ... (receive) the documents tomorrow, we ... (synchronize) on Monday.

4. If I ... (see) my friend tomorrow, I... (ask) him about this interface.
5. If Helen ... (know) Mr. Black's e-mail now, she would send the models of interface.

11. Open the brackets using «Conditional III» in the following sentences.

Example: John ... (not catch) the virus if he ... (choose) another website.—
John wouldn't have caught the virus if he had chosen another website.

1. I ... (study) computer science at the University if I ... (know) that it was important for me.
2. If you ... (go) with me to this exhibition last month, you ... (see) the gadgetry there.
3. We ... (not be tied) if you ... (recess)
4. If I ... (not open) the e-mail yesterday, I ... (not see) this important message.
5. Nick ... (not be) so tired this morning if he ... (go to bed) early last night.

12. Translate the following sentences using necessary conditionals.

На твоём месте я бы не стал устанавливать эту программу.

Я бы сверил эти данные, если бы они у меня были.

Если бы мой компьютер был бы помощней, объём оперативной памяти был бы больше.

Если мы увидим этого преподавателя, мы обязательно спросим об интегральных микросхемах

Жаль, что его не было вчера в институте. Если бы я его встретил я бы показал бы ему новый интерфейс.

UNIT IX

INTERNET

Internet is the computer-based global information system. The Internet is composed of many interconnected computer networks. Each network may link tens, hundreds, or even thousands of computers, enabling them to share information with one another and to share computational resources such as powerful supercomputers and databases of information. The Internet has made it possible for people all over the world to effectively and inexpensively communicate with one another. Unlike traditional broadcasting media, such as radio and television, the Internet does not have a centralized distribution system. Instead, an individual who has Internet access can communicate directly with anyone else on the Internet, make information available to others, find information provided by others, or sell products with a minimum overhead cost.

The Internet has brought new opportunities to government, business, and education. Governments use the Internet for internal communication, distribution of information, and automated tax processing. In addition to offering goods and services online to customers, businesses use the Internet to interact with other businesses. Many individuals use the Internet for shopping, paying bills, and online banking. Educational institutions use the Internet for research and to deliver courses to students at remote sites.

The Internet's success arises from its flexibility. Instead of restricting component networks to a particular manufacturer or particular type, Internet technology allows interconnection of any kind of computer network. No network is too large or too small, too fast or too slow to be interconnected. Thus, the Internet includes inexpensive networks that can only connect a few computers within a single room as well as expensive networks that can span a continent and connect thousands of computers.

Internet service providers (ISPs) provide Internet access to customers for a monthly fee. A customer who subscribes to an ISP's service uses the ISP's network to access the Internet. Because ISPs offer their services to the general public, the networks they operate are known as public access networks. In the United States, as in many countries, ISPs are private companies; in countries where telephone service is a government-regulated monopoly, the government often controls ISPs.

An organization that has many computers usually owns and operates a private network, called an intranet, which connects all the computers within the organization. To provide Internet service, the organization connects its intranet to the Internet. Unlike public access networks, intranets are restricted to provide security. Only authorized computers at the organization can connect to the intranet,

and the organization restricts communication between the intranet and the global Internet. The restrictions allow computers inside the organization to exchange information but keep the information confidential and protected from outsiders.

The Internet has grown tremendously since its inception, doubling in size every 9 to 14 months. In 1981, only 213 computers were connected to the Internet. By 2000, the number had grown to more than 100 million. The current number of people who use the Internet can only be estimated. One survey found that there were 61 million Internet users worldwide at the end of 1996, 148 million at the end of 1998, and 407 million by the end of 2000. Some analysts estimate that the number of users will double again by the end of 2002.

Vocabulary

announcement – объявление, сообщение, извещение

attachment – крепление, приспособление, насадка

audible – слышимый, слышный

continent – континент, материк

dedicated – выделенный, специальный, назначенный

dial-up – коммутируемый по телефонной линии

domain – владение, имения, область, сфера

DSL (Digital Subscriber Line) – абонентская цифровая линия

inception – открытие, основание, начало

login – регистрация

malfunction – неисправность

MIME (Multipurpose Internet Mail Extension) – многоцелевые расширения почтовой службы в Интернете

overhead – наверху, верхний, надземный

payload – полезная нагрузка

remote – отдаленный, замкнутый, незначительный

string – строка, ряд, веревка, шнурок, струна, нитка

survey – топографическая/геодезическая съемка, инспекция, исследование, оценка

to disseminate – распространять (учение, взгляды)

to ensure – обеспечивать

to forward – пересылать, продвигать

to interfere – вмешиваться, мешать, трогать

to propagate – распространять, разводить

to relay – передавать, транслировать

to request – просить

to spin – крутить, вращать

toll-free – бесплатный

tremendously – чрезвычайно

Usenet – система телеконференций Интернета

1. Translate these words and word combinations into English Translate into English.

- 1) Централизованная система распределения _____
- 2) взаимосвязанные компьютерные сети _____
- 3) делиться информацией друг с другом _____
- 4) недорогие сети _____
- 5) соединять тысячи компьютеров _____
- 6) обеспечивать безопасность _____
- 7) в пределах одного помещения _____
- 8) базы данных информации _____

2. Find the equivalents:

- | | |
|-----------------|-------------------|
| 1. significant | 1. круг |
| 2. capacity | 2. размещение |
| 3. message | 3. существенный |
| 4. auxiliary | 4. гибкий диск |
| 5. release | 5. дополнительный |
| 6. integer | 6. сообщение |
| 7. density | 7. емкость |
| 8. allocation | 8. целое число |
| 9. circle | 9. освобождать |
| 10. floppy disk | 10. плотность |

3. Form adverbs from adjectives by adding the suffix “-ly” and translate the words:

Example: easy – easily - легко

reasonable, usual, reliable, intelligent, special, physical, functional, subsequent, simultaneous, sufficient, consequent.

4. Arrange antonyms in pairs and translate them: to add, presence, hole, input, north, to multiply, to divide, binary, south, output, blank, absence, to subtract.

5. Read and translate the following sentences paying attention to the meaning of the words and word combinations given below:

case – ящик, коробка, корпус, случай

in any case – во всяком случае

this is the case – дело обстоит так

this is not the case – это не так

1. These are cases for packing all the units of the computer ES-1045. 2. In this case the bits would be divided into 14 groups of 3 bits each. 3. This is some kind of synchronization of the pulses in a computer, and in most computers this is the case: all pulses are synchronized with respect to each other. 4. In each case, the operation is suppressed; therefore the condition code and data in storage and registers remain unchanged. 5. In any case registers store information in the memory. 6. The word which comes from the arithmetic unit back to the memory is not erased, but this is not the case with a new word as the previous one in the memory is always erased.

6. Choose the correct answer in the brackets paying attention to tense of the verb.

1. The Internet (*is/ were/ to be*) the computer based global information system.
2. The Internet (*includes/ to include/ included*) inexpensive networks that can only connect a few computers within a single room as well as expensive networks that can span a continent and connect thousands of computers.
3. The Internet (*does not/do not/is not*) have a centralized distribution system.
4. The Internet (*has brought/ brought/ to bring*) new opportunities to government, business, and education.
5. The restrictions (*allow /allows/ to allow*) computers inside the organization to exchange information.
6. One survey (*found/ had found/ to find*) that there were 61 million Internet users worldwide at the end of 1996.
7. To provide Internet service, the organization (*connects/ connected /is connecting*) its intranet to the Internet.

7. State the functions of the Infinitive and translate the sentences.

1. The assistant came *to instruct* students how to handle instructions.
2. The assistant came *to be instructed* by professor.
3. The main purpose of the computers is *to solve* complex problems.
4. *To perform* reasonable operation, a computer must have a way of accepting data.
5. *To carry out* the instruction, the computer must accept the data in the form of punched holes and blanks.
6. Buses are designed *to carry* as much data as possible.
7. Another advantage in this case is that *less* power is required *to run* a computer.
8. In 1967 Ampex developed a special videodisk machine that made it possible *to locate and replay* a desired action in less than four seconds.
9. The experiments *to be carried out* will be very important.
10. The programmer *to do* the program for a computer must have a good knowledge of mathematics.

8. Read and translate the sentences paying attention to the Infinitive (active infinitive or passive infinitive)

1. The investigation of space *is said to be* of great importance for science.
2. Many tests *are reported to have* made at the University.
3. This system is supposed

to work reliably for two years. 4. The computers *are believed to play* great part in the further development of science and industry. 5. The data is *likely to be processed* by specialists. 6. The computer *is known to perform* many operations in a very short period of time. 7. A complicated problem of using solar energy *is said to be solved* in the future. 8. He *is supposed to have* finished his research work. 9. We are sure *to study* the results of the experiment. 10. This research center *is certain to be equipped* with the newest electronic devices.

9. Put «to» before the infinitive where it is necessary.

1. My friend asked me ... let him ... use my computer.
2. You must make him ... practice an hour a day.
3. She was made ... repeat the rules of using.
4. He is not sure that it can ... be done, but he is willing ... try.
5. Let me ... help you with your work.
6. She asked me ... read this scientific article carefully and ... write an answer.
7. You ought ... take care of your vision, because you spend a lot of time in front of your computer.
8. I looked for the book everywhere but could not ... find it.
9. The man told me not ... switch on the computer.
10. Have you seen him ... install this program?
11. You had better ... go there at once.
12. I would rather not ... tell them about it.

10. Read and translate the text.

ELECTRONIC MAIL AND NEW GROUPS

Electronic mail, or e-mail, is a widely used Internet application that enables individuals or groups of individuals to quickly exchange messages, even if the users are geographically separated by large distances. A user creates an e-mail message and specifies a recipient using an e-mail address, which is a string consisting of the recipient's login name followed by an @ (at) sign and then a domain name. E-mail software transfers the message across the Internet to the recipient's computer, where it is placed in the specified mailbox, a file on the hard drive. The recipient uses an e-mail application to view and reply to the message, as well as to save or delete it. Because e-mail is a convenient and inexpensive form of communication, it has dramatically improved personal and business communications.

In its original form, e-mail could only be sent to recipients named by the sender, and only text messages could be sent. E-mail has been extended in two

ways, and is a much more powerful tool. Software has been invented that can automatically propagate to multiple recipients a message sent to a single address. Known as a mail gateway or list server, such software allows individuals to join or leave a mail list at any time. Such software can be used to create lists of individuals who will receive announcements about a product or service or to create online discussion groups. Of particular interest are Network News discussion groups (newsgroups) that were originally part of the Usenet network. Thousands of newsgroups exist, on an extremely wide range of subjects. Messages to a newsgroup are not sent directly to each user. Instead, an ordered list is disseminated to computers around the world that run news server software. Newsgroup application software allows a user to obtain a copy of selected articles from a local news server or to use e-mail to post a new message to the newsgroup. The system makes newsgroup discussions available worldwide.

E-mail software has also been extended to allow the transfer of nontext documents, such as graphics and other images, executable computer programs, and prerecorded audio. Such documents, appended to an e-mail message, are called attachments. The standard used for encoding attachments is known as Multipurpose Internet Mail Extensions (MIME). Because the Internet e-mail system only transfers printable text, MIME software encodes each document using printable letters and digits before sending it and then decodes the item when e-mail arrives. Most significantly, MIME allows a single message to contain multiple items, allowing a sender to include a cover letter that explains each of the attachments.

11. Answer the following questions using the information from the text.

1. What is an electronic mail?
2. Why do we use «@»?
3. What is for do we use e-mail?
4. What messages could be sent?
5. What is MIME? What's for is used MIME?

12. Translate the following sentences into English.

1. Для передачи различной информации друг другу люди используют почтовый ящик с электронной почтой.
2. Электронная почта – удобный способ передачи информации.
3. Миллионы людей по всему миру используют социальные сети для личного и профессионального общения.
4. В условиях современного мира интернет играет важную роль.
5. При использовании электронной почты необходимо соблюдать общепризнанные нормы сетевого этикета.

13. Complete the following dialogue about Internet.

Andy: Tell me Ross, how often do you use the Internet?

Энди: Скажи мне Росс, как часто ты используешь интернет?

Ross:

Росс: Должен сказать, довольно часто. Я использую его каждый день, так как мне нужно проверять электронную почту, читать новости, общаться с друзьями. А почему ты спрашиваешь?

Andy: I'm trying to make a survey with answers about the Internet and its frequency of use. I've already asked seven people and now I need to compare the facts. Do you mind being one of my respondents?

Энди:

Ross:

Росс: Вовсе нет. Какие еще вопросы в твоём списке?

Andy: What's the first thing you do when you go online?

Энди:

Ross:

Росс: Ну, для начала я проверяю свой электронный ящик, а затем начинаю бороздить просторы интернета в поисках нужной информации.

Andy: What type of information do you usually search for?

Энди:

Ross:

Росс: Я ищу все, что связано с моей учебной. Мне нужно много новой информации для выполнения домашней работы.

Andy: Do you simply copy what you find?

Энди:

Ross: No, our teachers won't accept any foolish copying. I try to adapt the information to my tasks. I also try to write everything in my own words.

Росс: Нет, наши учителя не принимают никакого пустого копирования. Я пытаюсь адаптировать информацию под мои задания. А также, я пытаюсь писать все своими словами.

Andy:

Энди: Понятно. Как насчет музыки? Используешь ли ты интернет для того, чтобы слушать музыку?

Ross: Yes, of course. I always listen to online radio. Moreover, I sometimes surf the Internet for song lyrics.

Andy:

Ross: I don't read magazines that much, but e-books are definitely useful.

Andy:

Ross: I've never paid attention to it, but I think more than five times.

Andy:

Росс:

Энди: А ты читаешь онлайн книги или журналы?

Росс:

Энди: Сколько раз в день ты используешь интернет? Это один из наиболее важных вопросов в моем списке?

Росс:

Энди: Спасибо. Эта информация очень полезна для меня.

13. Prepare the monologues about:

1. The role Internet in my life.
2. The social networks in Russia.
3. The virtual friends of mine.

UNIT X

MICROSOFT CORPORATION

Microsoft Corporation is leading American computer Software Company. Microsoft develops and sells a wide variety of software products to businesses and consumers in more than 50 countries. The company's Windows operating systems for personal computers are the most widely used operating systems in the world. Microsoft has its headquarters in Redmond, Washington.

Microsoft's other well-known products include Word, a word processor; Excel, a spreadsheet program; Access, a database program; and PowerPoint, a program for making business presentations. These programs are sold separately and as part of Office, an integrated software suite. The company also makes BackOffice, an integrated set of server products for businesses. Microsoft's Internet Explorer allows users to browse the World Wide Web. Among the company's other products are reference applications; games; financial software; programming languages for software developers; input devices, such as pointing devices and keyboards; and computer-related books.

Microsoft operates The Microsoft Network (MSN), a collection of news, travel, financial, entertainment, and information Web sites. Microsoft and the National Broadcasting Company (NBC) jointly operate MSNBC, a 24-hour news, talk, and information cable-television channel and companion Web site.

Business Developments. In the mid-1990s Microsoft began to expand into the media, entertainment, and communications industries, launching The Microsoft Network in 1995 and MSNBC in 1996. Also in 1996 Microsoft introduced Windows CE, an operating system for handheld personal computers. In 1997 Microsoft paid \$425 million to acquire WebTV Networks, a manufacturer of low-cost devices to connect televisions to the Internet. That same year Microsoft invested \$1 billion in Comcast Corporation, a U.S. cable television operator, as part of an effort to expand the availability of high-speed connections to the Internet.

In June 1998 Microsoft released Windows 98, which featured integrated Internet capabilities. In the following month Gates appointed Steve Ballmer, executive vice president of Microsoft, as the company's president, transferring to him supervision of most day-to-day business operations of the company. Gates retained the title of chairman and chief executive officer (CEO).

In 1999 Microsoft paid \$5 billion to telecommunications company AT&T Corp. to use Microsoft's Windows CE operating system in devices designed to provide consumers with integrated cable television, telephone, and high-speed Internet services. Also in 1999, the company released Windows 2000, the latest version of the Windows NT operating system. In January 2000 Gates transferred

his title of CEO to Ballmer. Gates, in turn, took on the title of chief software architect to focus on the development of new products and technologies.

Vocabulary:

collaboration – сотрудничество

copyright – авторское право

dominance – преобладание, господство

handheld – ручной

in turn – по очереди

lawsuit – судебный иск

suite – апартаменты

to allege – ссылаться на, утверждать

to browse – рассматривать, разглядывать, пролистывать

to claim – приписывать себе, претендовать, требовать

to drop – ронять, опускать, понижать, исключать, стихать

to evolve – развивать, эволюционировать, развиваться

to launch – спускать, начинать, предпринимать, бросать, запускать, выпускать, бросаться

to pursue – преследовать, осуществлять, заниматься, следовать

to release – освобождать, выпускать, отпускать, передавать

to retain – сохранять, удерживать

venture – рискованное предприятие, спекуляция

1. General understanding.

1. What is Microsoft Corporation?
2. What does Microsoft Corporation develop and sell?
3. Where this corporation has headquarters?
4. What main Microsoft's products do you know?
5. Does Microsoft operate the MSN?
6. When did Microsoft begin to expand into the Media, entertainment and information web sites?
7. When did Microsoft release Windows 98?
8. What else Windows do you know?
9. Did Microsoft pay 425 million dollars to acquire web TV Networks?
10. How many dollars did Microsoft pay to Telecommunications Company?

2. Translate these words and word combinations into English.

- 1) продавать отдельно _____
- 2) всемирная паутина _____
- 3) кабельное телевидение _____
- 4) разработчики программного обеспечения _____

- 5) наиболее широко используемые _____
- 6) предприятия и потребители _____
- 7) информационные каналы кабельного телевидения _____
- 8) разрабатывать и продавать _____

3. Find the equivalents:

- | | |
|-------------------------------|--------------------------------------|
| 1. the Boolean value | 1. основные особенности |
| 2. repetitive statement | 2. идентификаторы постоянных величин |
| 3. identifiers for constants | 3. построчный |
| 4. type declaration | 4. отладить программу |
| 5. step-by-step | 5. описание типа |
| 6. line-by-line | 6. портативные компьютеры |
| 7. hand-held computers | 7. Булево значение |
| 8. to debug a program | 8. оператор повторений |
| 9. basic features | 9. поэтапный |
| 10. this is not the case | 10. условный оператор |
| 11. conditional statement | 11. универсальные языки |
| 12. general-purpose languages | 12. это не так |

4. Arrange synonyms in pairs and translate them: speed, peripheral, to control, to write, auxiliary, to do, to receive, rate, to record, to get, to make, to handle, device, unit, instruction, part, to accept, command, section, information, data, to take in.

5. Learn the following dialogue by heart.

- I know that Microsoft Corporation is leading American computer Software Company. But what does this company do?
- Microsoft develops and sells a wide variety of software products to businesses and consumers in more than 50 countries.
- What is the main product?
- Don't you know that the company's Windows operating systems for personal computers are the most widely used operating systems in the world?
- Well, I've heard about it.
- Microsoft's other well-known products include Word, Excel, Access and PowerPoint.

6. Read the text. What is the main idea of the text?

WINDOWS

Windows. In 1985 Microsoft released Windows, an operating system that extended the features of MS-DOS and employed a graphical user interface. Windows 2.0, released in 1987, improved performance and offered a new visual appearance. In 1990 Microsoft released a more powerful version, Windows 3.0,

which was followed by Windows 3.1 and 3.11. These versions, which came preinstalled on most new personal computers, rapidly became the most widely used operating systems. In 1990 Microsoft became the first personal-computer software company to record \$1 billion in annual sales.

As Microsoft's dominance grew in the market for personal-computer operating systems, the company was accused of monopolistic business practices. In 1990 the Federal Trade Commission (FTC) began investigating Microsoft for alleged anticompetitive practices, but it was unable to reach a decision and dropped the case. The United States Department of Justice continued the probe.

In 1991 Microsoft and IBM ended a decade of collaboration when they went separate ways on the next generation of operating systems for personal computers. IBM chose to pursue the OS/2 operating system (first released in 1987), which until then had been a joint venture with Microsoft. Microsoft chose to evolve its Windows operating system into increasingly powerful systems. In 1993 Apple lost a copyright-infringement lawsuit against Microsoft that claimed Windows illegally copied the design of the Macintosh's graphical interface. The ruling was later upheld by an appellate court.

In 1993 Microsoft released Windows NT, an operating system for business environments. The following year the company and the Justice Department reached an agreement that called for Microsoft to change the way its operating system software was sold and licensed to computer manufacturers. In 1995 the company released Windows 95, which featured a simplified interface, multitasking, and other improvements. An estimated 7 million copies of Windows 95 were sold worldwide within seven weeks of its release.

7. Make sentences putting the words in the correct order.

1. used / systems / operating / the / became / these / rapidly / versions / most widely.
2. Was / the / accused / company / monopolistic / of / business / practices.
3. Systems / powerful / into / increasingly / system / Microsoft / to / chose / evolve / its / operating / windows / systems.
4. 1993 / Microsoft / in / NT / released / windows.
5. 1995 / in / the / released / 95 / company.

8. Complete the following sentences using the rules of sequence of tenses.

Example: She said, "I speak English." - She said that she spoke English.

1. She said, "I am speaking English."-_____
2. She said, "I have spoken English."-_____
3. She said, "I spoke English."-_____
4. She said, "I am going to speak English."-_____
5. She said, "I will speak English."-_____

6. She said, "I can speak English."-_____
7. She said, "I may speak English."-_____
8. She said, "I have to speak English."-_____
9. She said, "I must speak English."-_____
10. She said, "I should speak English."-_____
11. She said, "I ought to speak English."-_____

9. Open the brackets sentences using the rules of sequence of tenses.

Example: He said that Microsoft Corporation (*to be*) leading American computer Software Company. - He *said that* Microsoft Corporation *was* leading American computer Software Company

1. Our teacher said that Microsoft (*to develop*) a wide variety of software products to businesses and consumers in more than 50 countries
2. I did not know that these programs (*to belong*) to Microsoft Corporation.
3. The company also makes BackOffice
4. Among the company's other products (*to be*) reference applications; games; financial software; programming languages for software developers
5. In the mid-1990s Microsoft (*to begin*) n to expand into the media,
6. Also in 1996 Microsoft (*to introduce*) Windows CE, an operating system for handheld personal computers
7. That same year Microsoft (*to invest*) \$1 billion in Comcast Corporation,
8. Also in 1999, the company (*to release*) Windows 2000, the latest version of the Windows NT operating system.
9. In January 2000 Gates (*to transfer*) his title of CEO to Ballmer.

10. Read and translate the following sentences paying attention to the meaning of the word combinations with «set»:

- a) *to set* – ставить, помещать, устанавливать
to set aside – откладывать
to set up – основывать, учреждать
a set – набор, комплект, множество, прибор
a set of – ряд

1. The conditional code *is set* as a result of all logical comparing, connecting, testing, and editing operations. 2. The Institute of Automatic and Engineering Cybernetics of the Russian Academy of Sciences *was set up* in the late 1930s. 3. All logical operations other than editing are the part of the standard instruction *set*. 4. The *set* of logical operations include moving, comparing, bit connecting, bit testing, translating and editing. 5. A *set* of instructions is provided for the logical operation of processing data. 6. Several bits of an instruction *are set aside* to designate (определять) the operation code.

b) Make your sentences using «*to set*», «*to set aside*», «*to set up*», «*a set a set of*» using sequence of tenses.

Example: The foreign colleagues *said that he had set* those operations.

11. Choose the correct answer in the brackets.

1. I knew that my computer ... (have/has/had) a problem.
2. I know that my computer ... (have/has/had) a problem.
3. I knew that my computer ... (will have/would have/had) a problem soon.
4. He said he ... (used/has used/had used) Windows 95 since 2003.
5. She asks me if the installation ... (has been cancelled/had been cancelled/been cancelled).
6. She asked me if the installation ... (has been cancelled/had been cancelled/was cancelled).
7. Nobody knew what ... (will happen/would happen/happens) next.
8. Kelly said that she ... (didn't want/doesn't want/hadn't wanted) to buy a new computer program.
9. We didn't expect that he ... (showed/will show/would show) us this set of logical operations.

UNIT XI

ARITHMETIC AS THE ELEMENTARY BRANCH OF MATHEMATICS

Arithmetic is the elementary branch of mathematics dealing with the properties of numbers and their operation; the fundamental operations are addition, subtraction, multiplication, division.

The arithmetic symbols now in use were derived from the Arabs and the Hindus, the latter of whom introduced the symbol 0. These symbols have been in use since the XVI century. Before the introduction of Arab notation in Europe Roman numerals were used.

The Arabic system, which is a decimal system, employs ten figures to express numbers:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | |
|--------|-----|-----|-------|------|------|-----|-------|-------|------|
| naught | one | two | three | four | five | six | seven | eight | nine |
|--------|-----|-----|-------|------|------|-----|-------|-------|------|

Naught is also called zero and cipher. By combining these figures any number can be expressed.

The Roman System uses seven capital letters to express numbers, viz.:

Letters: I V X L C D M

Values: 1 5 10 50 100 500 1000

Repeating a letter repeats its value, thus I represents 1; II- two; X -ten; XX – twenty.

When a letter is placed before another of greater value its value is to be taken from that of the greater. Thus, IV represents five minus one - four; XL - forty (fifty minus ten).

When a letter is placed after another of greater value, their values are to be united. Thus VII represents seven; LXXX - eighty.

The periods above quadrillions in their order are: quintillions, sextillions, septillions, octillions, nonillions, decillions, etc.

Vocabulary:

arithmetic - арифметика

operation – операция (пр. арифметическая операция, ассоциативная операция)

to be derived from - получено от

introduction – введение, представление, внесение

letter - буква

value – ценность. значение

to be placed – быть размещенным

quadrillions - квадрильон

1. Guess the meaning of the following:

Arithmetic, Roman System, Arabs, Hindus, letter, figure, symbol, operation, century.

2. Give Russian equivalents to the following phrases:

1. the elementary branch_____
2. dealing with the properties_____
3. symbols now in use_____
4. were derived from the Arabs and the Hindus_____
5. seven capital letters, another of greater value_____

3. Give English equivalents to the following:

1. повторяет свое значение_____
2. сочетая эти цифры_____
3. десять цифр для выражения чисел_____
4. их значение складывается_____
5. основные действия_____

4. Read and translate the text.

HOW WE READ AND WRITE NUMBERS

To make it easier to read large numbers, we separate the figures of the numbers by commas into groups of three, counting from right to left. Each group is called the period and has its own name.

The system of numbers we use, called Arabic System, is a decimal system, that is, it is based on tens. In this system, the value a digit represents is determined by the place it has in the numbers. If a digit is moved to the left one place, the value it represents becomes ten times as great.

Zero in the decimal system is a place-holder. In the number 30, zero shows that 3 has been moved to the left one place, thus counting tens instead of ones. The place value in numbers is shown below.

| | | | |
|-----------------|-------------|-----------|----------|
| 682,000,000,000 | 847,000,000 | 156,000 | 592 |
| Billions | Millions | Thousands | Ones |
| 4 periods | 3 periods | 2 periods | 1 period |

These numbers are read: six hundred eighty-two billion, eight hundred forty-seven million, one hundred thirty-six thousand, five hundred and ninety-two.

All periods of a number contain three digits, or places (the first period on the left may or may not), zero is used as a place-holder.

When we want to find a single number that will represent all the numbers in

a group of unequal numbers or quantities we find the average.

To find the average of a group of unequal numbers, we add the numbers and then divide their sum by the numbers of addends.

Vocabulary:

to make it easier to read - чтобы легче читать

ten times as great - увеличивается в 10 раз

5. Answer the following questions using the information from the text.

1. Why do we separate the figures of the numbers by commas?
2. How is each group of three figures called?
3. How is the system of numbers we use called?
4. How many digits does a period of a number contain?
5. How do we find the average of unequal numbers?

6. Read and translate the derivatives. Mind the suffixes.

Example: easy - easier

to add - addend

to count - counting

to represent - representative

to hold - holder

to equal - unequal

7. Give English equivalents to the following:

1. большие числа _____
2. считая справа налево _____
3. определяется занимаемым местом в числе _____
4. десятичная система _____
5. содержит три цифры _____
6. группа неравных чисел или количеств _____
7. найти среднее арифметическое _____
8. передвигать на одно место влево _____

8. Give Russian equivalents to the following phrases:

1. separate the figures by commas _____
2. it is based on tens _____
3. as a place-holder _____
4. to find a single number _____
5. the average of a group _____
6. unequal number _____
7. the numbers of addends _____

9. Make up sentences of your own using the words and expressions given below:

Quantity, unequal, sum, to make it easier to read, to separate, the figures of the numbers, to be determined by, ten times as great, ten times as small.

10. Make up 5 questions to the texts and answer them.

UNIT XII

ADDING, SUBTRACTING, MULTIPLYING AND DIVIDING THE WHOLE NUMBERS

The result of addition of numbers is called the sum or total of the numbers. The numbers to be added are called the addends. In adding a series of numbers, begin with the column at the right. If the sum of a column of digits is ten or larger, carry the tens digit and add it to the sum of the digits in the next column to the left.

In subtracting whole numbers, the number which is to be diminished is called the minuend; the number subtracted is called subtrahend. The answer is the difference between the minuend and the subtrahend and it is called the remainder, or difference.

In multiplication, the number by which you multiply is called the multiplier, the number being multiplied is the multiplicand.

The number resulting from the multiplication is called the product. The product of any number multiplied by zero is zero. The product of any number which is multiplied by one is the same number. The order in which numbers are multiplied does not change the product.

In division, the number that is to be divided is called the dividend. The number by which the dividend is to be divided is called the divisor. The answer is the quotient. The remainder is what is left over after the dividend has been divided into equal parts. If there is a remainder, it may be written over the divisor and expressed as a fraction in the quotient.

Vocabulary:

addition – добавление

addend - слагаемое

quotient - частное

multiplication - умножение

order - заказ

sum - сумма

is to be diminished - должно быть

the numbers to be added - числа, которые нужно сложить

the same number - то же самое число

1. Answer the following questions:

1. How is the result of addition called?
2. What do we do while adding a series of numbers?
3. What is the result of subtracting whole numbers called?
4. What is the multiplicand?
5. What number is called the remainder?
6. How do we write it?

2. Read the following words, paying attention to the pronunciation:

to add, addends, adding, to subtract, subtrahend, minuend, remainder, to multiply, dividend, divisor, quotient.

3. Give all possible derivatives of the following verbs:

to differ, to check, to answer, to change, to obtain.

4. Give Russian equivalents to the following phrases:

1. the result of addition _____
2. divide into equal parts _____
3. does not change the product _____
4. is left over after the dividend _____
5. the product of any number _____
6. the number being multiplied _____
7. it may be written over the divisor _____
8. the difference between _____
9. the minuend and the subtrahend _____
10. the same number _____

5. Complete the following sentences:

1. The result of addition is called ...
2. The answer in subtraction is ...
3. The number by which you multiply is called ...
4. The product of any number multiplied by one is ...
5. The number by which the dividend is to be divided is called ...
6. The order in which numbers are multiplied ...

6. Make up sentences of your own using the words and expressions given below:

the numbers to be added, the exercise to be checked, the work to be done, the number to be divided, can be checked.

7. Translate into English:

1. Числа, которые нужно сложить, называются слагаемыми, а результат сложения, т.е. число, получающееся от сложения, называется суммой.

2. Вычитанием называется действие, посредством которого (by means of which) по данной сумме и одному данному слагаемому находим другое слагаемое.

3. Число, которое уменьшают, называется множимое; число, на которое умножают, называется множителем. Результат действия, т.е. число, полученное при умножении, называется произведением.

4. Число, которое делят, называется делимым; число, на которое делят,

называется делителем; число, которое получается в результате деления, называется частное.

8. Express agreement or disagreement with the following:

1. The result of addition of numbers is called the difference.
2. The number subtracted is called the subtrahend.
3. The order in which numbers are multiplied changes the product.
4. In division, the number that is to be divided is called the quotient.
5. The product multiplied by zero is zero.

9. Find an improper word:

1. addition, subtrahend, to add, sum, addend, total.
2. quotient, remainder, dividend, division, product, divisor.
3. minuend, difference, subtraction, quotient, subtrahend, remainder.

UNIT XIII

FRACTIONS AND THEIR MEANING

A fraction represents a part of one whole thing. A fraction indicates that something has been cut or divided into a number of equal parts.

In a fraction the upper and lower numbers are called the terms of the fraction. The horizontal line separating the two numbers in each fraction is called the fraction line. The top term of a fraction or the term above the fraction line is called the numerator; the bottom term or the term below the fraction line is called the denominator.

A fraction may stand for a part of a group. There is a group of 5 apples. Each is $\frac{1}{5}$ (one fifth) of the group. If we take away 2 apples, we say that we are removing $\frac{2}{5}$ of the number of apples present. If we take away 3 apples we are removing $\frac{3}{5}$ of the apples present. In this instance, a fraction is being used to stand for a part of a group.

A fraction also indicates division. For example: one apple was divided into eight parts and the man has eaten $\frac{1}{8}$ of the apple. How much of the apple is left? How many eighths are in the whole apple?

Principle to remember. If in any fraction the numerator and denominator are equal, the fraction is equal to 1.

Vocabulary:

denominator - знаменатель

division - разделение

fraction – дробь, фракция, доля, часть.

fraction line – делитель числителя и знаменателя.

numerator - нумерация

indicate – указывать

upper and lower numbers – большее и меньшее числа в дроби

to consist of - состоять из

is represented by (the fraction) - представлено (дробью)

may stand for - может означать

1. Answer the following questions:

1. What does a fraction represent?
2. What do we call "the terms of fraction"?
3. What is the numerator (denominator)?
4. What does a fraction indicate?
5. When is the fraction equal to 1?

2. Read and translate the following international words. Mind the pronunciation:

line, group, present, division, indicate, fraction, number, to separate, horizontal

3. Give Russian equivalents of the following:

1. terms of the fraction _____
2. the upper and lower numbers _____
3. the fraction line _____
4. separating two numbers _____
5. the term below the fraction line _____
6. the top term of a fraction _____
7. something has been cut or divided into a number of parts _____
8. to stand for a part of a group _____

4. Make up sentences of your own using the words and expressions given below:

to be called, to represent, equal parts, to consist of, may stand for.

5. Insert the missing words.

1. In a fraction the upper and numbers are called
2. The top term of ... is called
3. The bottom term or the term ... is called
4. A fraction also ... division.
5. If in any fraction the numerator and ... are equal, the fraction is equal to...

6. Make sentences putting the words in the correct order.

1. fraction / division / a / indicates / also.
2. the terms/ fraction / and / the upper / in / a / are / the lower / called / numbers, of a fraction.
3. to stand / a group / is being used / for / a fraction / a part of.
4. represents / one / a part / whole / of / a fraction / thing.

7. Complete the following sentences.

1. The horizontal line separating the two numbers in each fraction is called ...
2. The number above the fraction line is the numerator and that below is ...
3. The denominator names the fractional unit and the numerator indicates ...

8. Translate into English:

Дробь представляет собой часть целого. Число, стоящее над чертой, называется числителем дроби. Число, стоящее под чертой, называется знаменателем дроби. Числитель и знаменатель называются членами дроби. Если в дроби числитель и знаменатель равны, то дробь равна 1.

UNIT XIV

TYPES OF FRACTIONS

Common Fraction. A common fraction is a number that has the numerator represented by numbers placed the one above, and the other below a horizontal line. $\frac{3}{7}$ is a common fraction.

Proper Fraction. If the numerator of a fraction is less than denominator the fraction is called a proper fraction. The value of a proper fraction is always less than 1. $\frac{6}{7}$, $\frac{1}{5}$ and $\frac{9}{10}$ are proper fractions.

Improper Fraction. If the numerator of a fraction is equal to 1 or larger than the denominator, the fraction is called an improper fraction. The value of improper fraction is equal to or larger than 1. $\frac{5}{3}$, $\frac{3}{2}$, $\frac{8}{8}$ are improper fractions.

Mixed numbers. A number which consists of a whole number and a fraction is called a mixed number. $2\frac{1}{9}$, $5\frac{1}{4}$, $9\frac{2}{5}$ are mixed numbers.

Reducing a Fraction to Lower Terms. For convenience and clarity a fraction must always be expressed in its simplest form. That is it must be reduced to its lowest terms. To reduce a fraction to its lowest terms, divide the numerator and the denominator by the largest number that will divide into both of them evenly. This process is called the reduction of a fraction to its lowest terms. The largest quantity which is a common divisor of two or more quantities is called a greatest common divisor of these quantities. It is written G.C.D.

Vocabulary:

common Fraction - простая дробь

proper Fraction – правильная дробь

improper Fraction – неправильная дробь

mixed numbers – смешанная дробь

is equal to - равен

to reduce a fraction - сократить дробь

1. Answer the following questions:

1. What is a common fraction called?
2. What is a proper fraction called?
3. Is the value of a proper fraction more or less than $\frac{1}{2}$?
4. What do we call mixed numbers?
5. How do you reduce a fraction to its lower terms?

2. Express agreement or disagreement with the following:

1. The value of a proper fraction is always less than 1.
2. A mixed number is a number which contains only a fraction.

3. We can't express a fraction in its simplest form.
4. In a common fraction the numbers are placed above and below the horizontal line.
5. A greatest common divisor is the smallest common divisor of two or more quantities.

3. Read the following words paying attention to the pronunciation:

reduce, value, both, other, mixed, proper, improper.

4. Give all possible derivatives of the following words:

value, convenience, to represent, to explain, to divide.

5. Fill in the blanks with prepositions if necessary:

1. ... convenience and clarity a fraction must be always expressed ... its simplest ... form.
2. A number which ... consists ... a whole number and a fraction is called ... a mixed number.
3. The value ... improper fraction is equal ... or ... larger than 1.
4. This process is called ... the reduction ... a fraction ... its lowest term.

6. Translate into Russian:

Fraction indicates division, the numerator being a dividend, the denominator is a divisor, and the value of the fraction is the quotient.

A fraction can be reduced to lower term if the numerator and the denominator are divisible by a single number, that is if they have a common divisor. In order to reduce a fraction to its lowest term, therefore, it is seen at once that the greatest common divisor must be used.

7. Translate into English:

Дробь, у которой числитель меньше знаменателя, называется правильной. Правильная дробь меньше единицы. Дробь, у которой числитель равен знаменателю или больше его, называется неправильной дробью. Таким образом, неправильная дробь или равна единице, или больше её. Числа, которые состоят из целого числа и дроби, называются смешанными числами. Сокращением дроби называется замена её другой, равной ей дробью с меньшими членами, путём деления числителя и знаменателя на одно и то же число. Это число называется общим делителем.

ГРАММАТИКА АНГЛИЙСКОГО ЯЗЫКА В ТАБЛИЦАХ

1. Глагол **TO BE** в простом настоящем времени (Present Simple)

| | |
|---------------------------|---------------------------|
| I am a student. | We are students. |
| You are a student. | You are students. |
| He is a student. | They are students. |
| She is a student. | |
| It is a book. | |

2. Вопросительные предложения с глаголом **TO BE** и ответы на вопросы

| | |
|--|---|
| Am I a teacher? Are you a student? | Yes, I am. No, I am not (I'm not). Yes, I am. I am a student. |
| Is he English? Is she from Canada? Are we in England? | No, I am not. I'm a doctor. Yes, he is. No, he is not (he isn't). Yes, she is. She's from Canada. No, she is not (isn't). She is from France. Yes, you are. You are in Bath. No, you are not (you aren't). You are in Scotland. |

3. Глагол **TO HAVE** в простом настоящем времени (Present Simple)

| | |
|---|----------------------------------|
| I have a brother. | We have a car. |
| You have a house. | You have a garden. |
| He has a dog. She has a cat. It has a window. | They have three children. |
| to have = to have got: You've got a house. We've got a car. | |

4. Вопросительные предложения с глаголом TO HAVE и ответы на вопросы

| | | | |
|-------------|------|----------------|--|
| Have | I | time? | Yes, you have . |
| | you | money? | No, I have not (I haven't). |
| | we | a cousin? | Yes, you have . |
| | they | a dictionary? | No, they have not (they haven't). |
| Has | he | a family? | Yes, he has . |
| | she | a grandmother? | No, she has not (she hasn't). |
| | it | long ears? | Yes, it has . |

Например:

Have you (got) a car? — Yes, **I have**. No, **I haven't**.

Have they (got) children? — Yes, they **have**. No, they **haven't**. **Has** he (got) an umbrella? - Yes, he **has**. No, he **hasn't**.

How many daughters **has** he **got**? - He's **got** two.

5. Вводное слово THERE с глаголом TO BE

| | |
|---|-------------------------------|
| There is a table in the room. | В комнате <i>(есть)</i> стол. |
| There is a vase on the table. | На столе <i>стоит</i> ваза. |
| There are flowers in the vase. | В вазе <i>(стоят)</i> цветы. |
| There is some milk in the glass. | В стакане <i>есть</i> молоко. |
| There is little water in the cup. | В чашке мало воды. |
| There are no apples in the fridge. | В холодильнике нет яблок. |

6. Вопросительные предложения и ответы на вопросы

| | |
|---------------------------------------|--|
| Is there a table in the room? | Yes, there is . No, there isn't . |
| Are there plates on the table? | Yes, there are . No, there aren't . |
| Is there any tea in the cup? | Yes, there is some. No, there isn't any. |
| Are there any questions? | Yes, there are . No, there aren't . |

| | |
|---|---|
| Is there a telephone in the house? | Yes, there is . No, there isn't . |
| Is there any time? | Yes, there is some. No, there isn't . |

7. Специальные вопросы

| | |
|---------------|--------------------------------|
| what? | кто (по профессии)? что?какой? |
| who? | кто? |
| whom? | кого? кому? |
| where? | где? куда? |
| when? | когда? |
| why? | почему? |
| which? | какой (из)?который? |
| now: | как? |
| much? | (time, money, water, etc.) |
| how | сколько? |
| many? | (books, rooms, chairs, etc.) |
| What time? | когда? |
| At what time? | в какое время? |

Например: *What* is she? *What* are you doing? *Who* can help me? *Who* are you waiting for? *Whom* does he love? *Where* do you come from? *Where* are you going? *Why* is she unhappy? *Which* of you can answer this question? *How* can **I** get to the bus stop? *How much* time does it take? *How many* students are there in your group? *What time* do you normally get up? *What colour* is your favourite?

8. Существительное Образование множественного числа существительных

| | | | |
|----------|----------|-----|------|
| a fact | facts | s | [s] |
| a cat | cats | | |
| a day | days | | |
| a girl | girls | [Z] | |
| a plane | planes | | |
| a dress | dresses | es | [iz] |
| a box | boxes | | |
| a place | places | | |
| a city | cities | tes | [iz] |
| a family | families | | |

9. Особые случаи образования множественного числа

существительных

| | | |
|--------------|------------------|-----------|
| a man | <i>мужчина</i> | men |
| a woman | <i>женщина</i> | women |
| a foot | <i>нога</i> | feet |
| a tooth | <i>зуб</i> | teeth |
| a mouse | <i>мышь</i> | mice |
| a child | <i>ребенок</i> | children |
| a postman | <i>почтальон</i> | postmen |
| a phenomenon | <i>явление</i> | phenomena |
| a sheep | <i>овца</i> | sheep |

10. Существительные, употребляемые только в единственном числе

| | |
|-------------------------------|---------------------------|
| weather — <i>погода</i> | knowledge — <i>знания</i> |
| furniture — <i>мебель</i> | progress — <i>успехи</i> |
| information — <i>сведения</i> | hair — <i>волосы</i> |
| advice - <i>совет(ы)</i> | love — <i>любовь</i> |
| news — <i>новости</i> | work — <i>работа</i> |
| money — <i>деньги</i> | fish — <i>рыба</i> |
| watch — <i>часы</i> | fruit — <i>фрукты</i> |

11. Существительные, употребляемые только во множественном числе

| | |
|------------------------------|--------------------------|
| contents — <i>содержание</i> | slums — <i>трущобы</i> |
| wages — <i>зарплата</i> | trousers - <i>брюки</i> |
| clothes — <i>одежда</i> | spectacles - <i>очки</i> |
| goods - <i>товар</i> | tropics — <i>тропики</i> |
| politics — <i>политика</i> | memoirs — <i>мемуары</i> |
| suburbs — <i>окраина</i> | scales — <i>весы</i> |

12. Притяжательный падеж существительных

| | |
|---------------------|--|
| Единственное число | cat's Tom's mother's boss'(s) Marx'(s) |
| Множественное число | sisters' children's The Browns'(s) |

13. Артикль

Неопределенный артикль *a (an)* употребляется только с существительным в единственном числе, когда лицо или предмет не знакомы говорящему или упоминаются впервые. Например:

They live in **a** new house with **a** garden and **a** swimming pool.

He has **a** sister and **a** brother.

She was **a** young girl of 17.

I want **an** apple.

Определенный артикль *the* употребляется с существительными как в единственном, так и во множественном числе, когда лицо или предмет знакомы или известны говорящему. Например:

The house is new and **the** garden is wonderful.

The sister and **the** brother are very much alike.

The young girl was only 17.

Хотя употребление того или иного артикля определяется контекстом, существуют случаи фиксированного употребления артикля. Например:

The Russians, **the** English, **the** Americans.

The Browns, **the** Martins, **the** Petrovs.

The United Kingdom of Great Britain and Northern Ireland, **the** USA, **the** Ukraine, **the** Netherlands.

The Pacific Ocean, **the** Black Sea, **the** English Channel, **the** Thames, **the** Volga.

The Urals, **the** Rocky Mountains, **the** Bermudas, **the** British Isles.

The first of September, **the** third place, **the** best novel, **the** most interesting book.

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

The Sun, **the** Moon, **the** Earth, **the** Universe.

Артикль не употребляется:

Pushkin Square, house number 40, Downing Street, No. 10, page 15, room 105.

James Smith, Mary Larsen, Doctor Smith, Lord Byron, Queen Elizabeth.

Europe, Asia, Africa, South-East Asia, Latin America, France, Russia, Great Britain.

London, Washington, Moscow, Paris.

14. Числительные

| Количественные | Порядковые | Количественные | Порядковые |
|----------------|------------|----------------|------------|
| 1 - one | first | 10 — ten | tenth |
| 2 - two | second | 11 — eleven | eleventh |
| 3 - three | third | 12 — twelve | twelfth |
| 4 - four | forth | 13 — thirteen | thirteenth |

| | | | | |
|-----------|---------|----|--------------|---------------|
| 5 - five | fifth | 14 | — fourteen | fourteenth |
| 6 — six | sixth | 20 | — twenty | twentieth |
| 7 — seven | seventh | 21 | — twenty-one | twenty-first |
| 8 - eight | eighth | 32 | — thirty-two | thirty-second |
| 9 - nine | ninth | | | |

40 - forty, 50 - fifty 100 - a hundred, 300 - three hundred 1,000 - a thousand, 5,000 - five thousand 1,000,000 — a million, 10,000,000 — ten million 563 — five hundred **and** sixty-three 1,450 - fourteen hundred **and** fifty

Даты:

1147 — eleven forty-seven 1900 — nineteen hundred
 1493 — fourteen ninety-three 1905 — nineteen “o” [ou] five
 1992 — nineteen ninety-two 2000 — two thousand

15. Местоимения

| Личные местоимения в именительном падеже | Личные местоимения в объектном падеже | Притяжательные местоимения | Абсолютная форма притяжательных местоимений | Возвратные местоимения |
|--|---------------------------------------|----------------------------|---|------------------------|
| I | me | my | mine | myself |
| you | you | your | yours | yourself |
| he | him | his | his | himself |
| she | her | her | hers | herself |
| it | it | its | its | itself |
| we | us | our | ours | ourselves |
| you | you | your | yours | yourselves |
| they | them | their | theirs | themselves |

16. Указательные местоимения

| | | |
|---------------|--------------------|-------------------|
| Единственное | this — <i>этот</i> | that — <i>тот</i> |
| Множественное | these — <i>эти</i> | those — <i>те</i> |

17. Неопределенные местоимения

| | |
|--------|---|
| much | <i>много</i> - с неисчисляемыми существительными: much time, much money, much water, much sun, much snow, much milk, much food |
| many | <i>много</i> — с исчисляемыми существительными: many books, many students, many houses, many trees, many flowers, many rivers |
| little | <i>мало</i> - с неисчисляемыми существительными: little time, little money, little water, little sun, little snow, little milk, little food |

| | |
|----------|---|
| few | <i>мало</i> — с исчисляемыми существительными: few books, few students, few houses, few trees |
| a little | <i>немного</i> : I have a little time. Wait a little. There is a little water. |
| a few | <i>несколько</i> : There are a few chairs in the room. I want to tell you a few words. |

Much и **many** в современном английском языке употребляются чаще в вопросительных и отрицательных предложениях. В утвердительных предложениях употребляется **a lot of** как с исчисляемыми, так и с неисчисляемыми существительными. Например: Have you got **many** relatives?

Do you have **much** work to do today?

We don't have **much** time to stay here long. We have **a lot of** friends here.

He earns **a lot of** money.

They have **a lot of** children.

They spend **a lot of** time at home.

18 .Местоимения SOME, ANY, NO и их производные

| В утвердительных предложениях | | В вопросительных предложениях | | В отрицательных предложениях | |
|-------------------------------|---|-------------------------------|-------------------------------------|------------------------------|---------------------------|
| some | <i>какой-то, какой-нибудь</i> | any* | <i>какой-нибудь, сколько-нибудь</i> | no** | <i>никакой, несколько</i> |
| something | <i>что-то, что-нибудь</i> | anything | <i>что-либо</i> | nothing | <i>ничего</i> |
| somebody, someone | <i>кто-то, кто-нибудь</i> | anybody, anyone | <i>кто-либо, кто-нибудь</i> | nobody, no one, none | <i>ни один, никто</i> |
| somewhere | <i>где-нибудь, куда-нибудь</i> | anywhere | <i>где-либо, куда-либо</i> | nowhere | <i>нигде, никуда</i> |
| somehow | <i>как-нибудь, каким-нибудь образом</i> | anyhow | <i>как-нибудь</i> | | |
| somewhat | <i>немного, в какой-то</i> | anyway | <i>в любом случае</i> | | |

* Any в утвердительных предложениях означает *любой*', anything — *что угодно*, anybody — *любой, кто угодно*, anywhere — *где угодно, куда угодно*, anyhow — *во всяком случае*, anyway - *в любом случае, все равно*.

** Если в предложении есть другое отрицание, употребляется местоимение any и его производные.

Местоимение **every** (*каждый*) и его производные **everything** (*всё*), **everybody** (*все*), **everywhere** (*езде*) имеют те же формы в вопросительных и отрицательных предложениях. Например:

I want to ask you **some** questions. Have you got **any** relatives? There is **no** place like home. There aren't **any** chairs in the room. She told us **something** interesting. Did he tell you **anything**? **Nothing** will change the situation. We can't do **anything**. Ask **somebody** to help you. Is **anybody** at home? **Nobody** answers the phone. Her relatives are **somewhere** in Australia. **I** couldn't find the book **anywhere**. We shall try and do it **somehow**. What time shall we meet? — **Any** time will do. It is so simple, **anybody** will know it. I would do **anything** for you. You will have to tell the truth **anyway**. **Every** cloud has its silver lining. **Everybody** is here, we may begin. There were flowers **everywhere**, even on the floor.

19. Степени сравнения прилагательных

| Прилагательные | Положительная степень | Сравнительная степень | Превосходная степень |
|------------------------------------|--|--|---|
| Односложные и некоторые двусложные | big warm easy fast | bigger warmer easier faster | biggest warmest easiest fastest |
| Многосложные | beautiful interesting dangerous carefully | more beautiful more interesting more (less) dangerous more carefully | most beautiful most interesting most (least) dangerous most carefully |

20. Прилагательные и наречия, образующие степени сравнения не по правилам

| Положительная степень | Сравнительная степень | Превосходная степень |
|-----------------------|--|----------------------|
| good | better | best |
| bad | worse | worst |
| old | older | oldest |
| | сравнение по возрасту | |
| | elder | eldest |
| | старшинство в семье | |
| far | farther (<i>дальше</i>) further (<i>далее</i>) | farthest furthest |

| | | |
|-------------|-------|--------|
| much, many* | more | most |
| little** | less | least |
| few | fewer | fewest |

* В английском языке эти неопределенные местоимения имеют степени сравнения.

** Прилагательное little имеет степени сравнения: smaller - smallest.

as... as — *такой же... как*

The dog is **as big as** a horse. It's **as cold as** in winter.

not so... as — *не такой... как* She was **not so young as** he thought.

the... the — *нем... тем* **The more** we study, **the more** we know.

much + сравнительная степень — *намного* + сравнительная степень:

much better - *намного лучше*, **much younger** - *намного моложе*, **much more interesting** — *намного интереснее*

still + сравнительная степень — *ещё* + сравнительная степень: **still easier** - *ещё проще*, **still more difficult** - *ещё труднее*

Например:

Tom is **bigger than** Jane because he is two years **older than** she, but she is **more clever**.

This is the **most interesting** book **I** know.

Who is **the eldest** in the family?

Odessa is **farther than** Kiev.

Her husband is **as old as** her brother.

New York is **not so beautiful as** Washington.

The party was **much more exciting than I** thought.

21. Обозначение времени

m. - in the morning p.m. — in the afternoon (in the evening) (from 12 to 24)

What time is it?

It's: 9.00 (nine o'clock) 13.50 (ten minutes **to** two)

8.30 (half **past** eight) 14.05 (five minutes **past** two)

7.15 (a quarter **past** seven) 10.25 (twenty-five **past** ten)

- 45 (a quarter **to** seven) 9.35 (twenty-five **to** ten)

clock — часы (*настенные, настольные*) **alarm clock** — будильник

watch — наручные часы **hour hand** — часовая стрелка

minute hand — минутная стрелка **face of the clock (watch)** —

циферблат

My watch is right/wrong. — Мои часы идут правильно/неправильно.

My watch is fast/slow. — Мои часы спешат/отстают.

22 .Сводная таблица употребления времен Изъявительное наклонение

| | | | | | | | | | | | |
|--|--------------------------------------|----------------------------------|---|--|------------------------------------|---|----------------|---|---|-----------------|---|
| Active Voice to ask | | | | | | | | | | | |
| Simple | | | Continuous | | | Perfect | | | Perfect Continuous | | |
| to ask | | | to be asking | | | to have asked | | | to have been asking | | |
| Present | Past | Future | Present | Past | Future | Present | Past | Future | Present | Past | Future |
| asks | asked | shall } ask will } ask | am } asking is } asking are } asking | was } asking were } asking | shall } be asking will } asking | has asked | had asked | shall } have asked will } have asked | has been asking | had been asking | shall } have been asking will } have been asking |
| Употребление | | | | | | | | | | | |
| Действие как факт(обычное, обычное, повторяющееся, постоянное) | | | действие как процесс (незаконченное, длящееся) | | | действие, предшествующее какому-то моменту, связанное с ним | | | действие, начавшееся в прошлом и продолжающееся вплоть до какого-нибудь момента | | |
| usually every day often seldom sometimes | yesterday last week 5 days ago | tomorrow next week | now | at 4o'clock from 6 o'clock till 7 o'clock другое действие | | today this week already ever, never just not yet | | 1by 4 o'clock 2. другое действие | for since since when | for | for |
| Перевод на русский язык | | | | | | | | | | | |
| глагол несовершенного вида | | | глагол несовершенного вида | | | глагол совершенного вида прошедшего времени | | | глагол несовершенного вида | | |
| Passive Voice to be asked | | | | | | | | | | | |
| to be asked | | | to be being asked | | | to have been asked | | | | | |
| am } asking is } asking are } asking | was } asked were } asked | shall } be asked will } asked | am } being asked is } being asked are } being asked | was } being asked were } asked | — | has been asked | had been asked | shall } have been asked will } have been asked | — | | |

23. Сослагательное наклонение

| Аналитические формы | | Синтетические формы | |
|---|--|--|---------------------|
| | | Present Subjunctive | |
| | | I (we) ask (be, have, do) he (you, they) ask (be, have, do) | |
| I (we) should ask (do) he (you, they) would ask (do) | | Past Subjunctive | |
| | | I (we) asked (were, had, did) he (you, they) asked (were, had, did) | |
| I (we) should have asked he (you, they) should have asked | | Past Perfect Subjunctive | |
| | | I (we) should had asked he (you, they) would had asked (had been, had had, had done) | |
| Употребление | | | |
| 1. В простых предложениях и в | | 1. В условных придаточных | |
| I should do this work (today, tomorrow) I should have done this work (yesterday) | | if i had time. if i had had time. | if unless, provided |
| 2. В 3-х типах придаточных | | 2. После глагола wish | |
| подлежащих (it is necessary, it is possible...) It is necessary that he (should) do this work. дополнительных (to order, to demand, to suggest...) The chief demanded that we (should) do this work in time. цели (so that, lest) She must hurry lest she (should) be late. | | I wish I were stronger. | |
| Had I time, I should do this work. | | | had, were, could |
| Перевод на русский язык: глагол в прошедшем времени + «бы» | | | |

24. Употребление времен в придаточных предложениях времени и условия

В придаточных предложениях времени и условия, относящихся к будущему времени, вместо времен Future употребляются соответствующие времена Present, если в главном предложении употребляется глагол в одном из будущих времен.

Союзы придаточных предложений времени и условия:

if — *если* when — *когда* before — *до того как* after — *после того как*
 while — *пока, в то время как* till — *до (вплоть до), пока не* until — *до (до тех пор как)* as soon as — *как только* as long as — *пока* unless — *если не, пока не*

Например:

If I am free tomorrow, I shall call you.

When everybody comes, we shall start the discussion.

He will remember it *as long as* he lives.

You won't master a foreign language *unless* you work hard.

We'll discuss the book *after* you have read it.

I shall do it *while* you are talking to him.

They'll wait *till* you return.

Если я буду свободен завтра, я позвоню тебе.

Когда все придут, мы начнем обсуждение.

Он будет помнить это, *пока* будет жить.

Ты не овладеешь иностранным языком, *если не* будешь много работать.

Мы обсудим книгу *после того*, как вы ее прочтете.

Я сделаю это, *пока* вы будете разговаривать с ним.

Они подождут, *пока* вы не вернетесь.

25. Модальные глаголы

| Модальный глагол | Модальное значение | Примеры |
|--|--|---|
| can (could) эквивалент* — to be able to | Способность, возможность, умение | He can speak English. Can you do it? She couldn't come. You will be able to come tomorrow. |
| | Сомнение, предположение | It can rain. Can they be home? |
| may (might) эквивалент* — to be allowed to | Возможность, разрешение Сомнение, предположение | May I come in? — Yes, you may. She might go for a walk. The children will be allowed to swim if the weather is warm. It may rain. They may come soon. |
| must mustn't | Необходимость Предположение, уверенность Запрещение | You must know the subject. He must try to do the work. She must be still working. This must be your coat. You mustn't go out today. |
| have to | Необходимость, вызванная обстоятельствами | I have to get up very early. Do you have to work hard? We didn't have to wait. |

| | | |
|-------------------------|---|--|
| should | Необходимость (совет) | You should follow my advice. You shouldn't miss classes. |
| to be | Необходимость, связанная с договоренностью или планом | He is to arrive on Monday. Am I to come at 5? The meeting is to last three hours. |
| ought | Необходимость, обязанность, долг | She ought to know how to behave. You ought to help her. |
| needn't = don't have to | Отсутствие необходимости | You needn't do it now. = You don't have to do it now. He needn't buy the tickets. = He doesn't have to buy them. |

* Эквиваленты модальных глаголов can и may имеют только первое модальное значение.

26. Перевод модальных глаголов на русский язык

| | |
|--|--|
| <p>I can speak English. I couldn't speak English last year. I hope I shall be able to speak good English next year. They can come soon. May I ask a question? The weather may change. The children are not allowed to go in before the bell rings. The teacher must know her students well. It must be very interesting. You mustn't eat too much ice-cream. We have to work hard now. Tomorrow is Saturday, we don't have to get up early. You shouldn't wear this dress every day. He should follow the doctor's instruction. The delegation is to arrive in April. You ought to finish your work on time. She needn't come to the office today, the boss will be away</p> | <p>Я <i>могу</i> говорить по-английски. Я <i>не мог</i> говорить по-английски в прошлом году. Я надеюсь, что на будущий год <i>смогу</i> хорошо говорить по-английски. <i>Возможно</i>, они скоро придут. <i>Можно</i> задать вопрос? Погода <i>может</i> измениться. Детям <i>не разрешается</i> входить в класс до звонка. Учитель <i>должен</i> хорошо знать своих учеников. Это, <i>наверное</i>, очень интересно. <i>Нельзя</i> есть слишком много мороженого. Сейчас нам <i>приходится</i> много работать. Завтра суббота, <i>не надо</i> рано вставать (<i>можно не вставать</i> рано). <i>Не стоит (не следует)</i> надевать это платье каждый день. Ему <i>следует</i> выполнять указания врача. Делегация <i>должна</i> приехать в апреле. Тебе <i>необходимо</i> закончить работу вовремя. Ей <i>не обязательно</i> приходить сегодня на работу, начальника не будет.</p> |
|--|--|

27 .Разделительные вопросы

| | |
|------------------------------|--------------|
| You are a journalist, | aren't you? |
| She knows French, | doesn't she? |
| We shall have lunch, | shan't we? |
| You have been to Japan, | haven't you? |
| I can do it myself, | can't I? |
| The students had to work | didn't they? |
| There is a lot of time, | isn't there? |
| You are not a student, | are you? |
| He doesn't speak Spanish, | does he? |
| She is not going to join us, | is she? |
| You haven't met before, | have you? |
| I couldn't do it alone, | could I? |
| They didn't have to do it, | did they? |
| Your friends haven't | have they? |
| There wasn't much traffic, | was there? |

Перевод разделительных вопросов на русский язык:

I told you about it, didn't I? Я *ведь* вам об этом говорила.

She isn't English, is she? Она *же* не англичанка.

You are coming with us, aren't you? Ты идешь с нами, *да*?

Времена в страдательном залоге (Passive Voice = TO BE + 3-я форма глагола)

| | | |
|---------|----------------------|------------|
| Present | am/is/are | taken |
| Past | was/were | built |
| Future | shall/will be | asked |
| Present | have/has been | translated |
| Past | had been | brought |
| Future | shall/will have been | done |
| Present | am/is/are being | examined |
| Past | was/were being | discussed |

Сказуемое в страдательном залоге переводится на русский язык:

- глаголом с возвратными частицами «-сь», «-ся»:

Bread is sold at the baker's. Хлеб *продается* в булочной.

Coffee is produced in Brazil. Кофе *производится* в Бразилии.

- глаголом «быть» + краткое причастие:

The first book was printed in Germany. Первая книга *была напечатана* в Германии.

The new school will have been built Новая школа *будет построена* к by the 1st of September. 1 сентября.

- неопределенно-личным предложением:

Newspapers are delivered in the morning. Газеты *доставляют* утром.

Dinner was served at 6. Обед *подали* в 6 часов.

Перевод пассивных конструкций с предлогами:

The film is much spoken *about*. Об этом фильме много *говорят*. Your house will be taken care *of*. За вашим домом *присмотрят*. This book is often referred *to*. На эту книгу часто *ссылаются*.

28 .Согласование времен

| Времена по смыслу | | |
|-------------------------|--|---|
| <i>Present</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | He teams English. She is playing tennis. They have returned. |
| <i>Past</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | You translated the text. She was watching TV. They had returned by 7. |
| <i>Future</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | We shall call on him. You will be wearing that hat. She will have received your letter by Saturday. |
| Времена по согласованию | | |
| <i>Present</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | He said that he learned English, she was playing tennis. they had returned. |
| <i>Past</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | He <i>said</i> that you had translated the text, she was watching TV. they had returned by 7. |
| <i>Future</i> | <i>Simple</i> <i>Continuous</i> <i>Perfect</i> | He <i>said that</i> they would call on him. you would be wearing that hat. she would have received your letter by Saturday. |

29. Перевод прямой речи в косвенную

| Прямая речь | Косвенная речь |
|---|---|
| 1. Утверждения | |
| She said: "We have moved into a new house." | She said (<i>that</i>) they had moved into a new house. |
| He thought, "It's going to rain." | He thought it was going to rain. |
| The announcement said, "The plane landed a minute <i>ago</i> ." | The announcement said <i>that</i> the plane had landed a minute <i>before</i> . |

| 2. Вопросы | |
|---|--|
| А. Общие | |
| “Is it true?” he wondered. I asked, “Have they got married?” Mother asked, “Did you meet them?” | He wondered //it was true. I asked //they had got married. Mother asked <i>if</i> we had met them. |
| Б. Специальные | |
| “What time is it?” I inquired. “How many languages can you speak?” the interviewer asked her. She wanted to ask him, “How many times have you visited Canada?” | I inquired what time it was. The interviewer asked her how many languages she could speak. She wanted to know how many times he had visited Canada. |
| 3. Просьбы, приказания | |
| “Open your case,” the officer ordered the passenger. “Leave my house immediately!” she shouted to him. “Wash up after dinner,” Mother said to her daughter. “Don’t tell anybody about the accident,” her brother said. “Could you help me?” she asked. “Will you, please, speak louder,” the teacher demanded. | The officer ordered the passenger to open his case. She ordered him to leave her house. Mother told her daughter to wash up after dinner. Her brother asked her not to tell anybody about the accident. She asked me to help her. The teacher asked me to speak louder. |

30. TO BE + прилагательное (причастие прошедшего времени), соответствующее в русском языке глаголу

| | | | |
|----------------|---------------|---------------------|----------------|
| to be absent | отсутствовать | to be ill | болеть |
| to be afraid | бояться | to be interested in | интересоваться |
| to be angry | сердиться | to be late | опаздывать |
| to be anxious | беспокоиться | to be mistaken | ошибаться |
| to be aware | осознавать | to be nervous | нервничать |
| to be busy | заниматься | to be present | присутствовать |
| to be cold | мерзнуть | to be proud of | гордиться |
| to be confused | смущаться | to be sleepy | хотеть спать |

| | | | |
|--------------------|------------------|-----------------|--------------|
| to be content | довольствоваться | to be sorry | сожалеть |
| to be delighted | восхищаться | to be surprised | удивляться |
| to be disappointed | разочароваться | to be tired | устать |
| to be engaged in | заниматься | to be upset | огорчаться |
| to be fond of | увлекаться | to be used to | привыкнуть |
| to be frightened | испугаться | to be worried | беспокоиться |
| to be glad | радоваться | to be worth | стоить |
| to be hungry | хотеть есть | | |

31. Глаголы-связки

- Глаголы-связки, выражающие наличие качества или состояние:

| | | |
|---------|------------------------------------|---|
| to be | He is 20. Life is interesting. | Ему 20 лет. Жизнь интересна. |
| to feel | She feels well. It feels great. | Она <i>чувствует</i> себя хорошо. Это прекрасно. |
| to look | You look worried. | Вы чем-то озабочены? |
| to seem | It seems easy. He seems OK. | Это <i>кажется</i> легким. <i>Кажется</i> , с ним все в порядке. |

- Глаголы-связки, выражающие приобретение нового качества или переход в другое состояние:

| | | |
|-----------|----------------------------|-------------------------|
| to become | She has become an actress. | Она стала актрисой. |
| to get | I got tired of this work. | Я устал от этой работы. |
| to grow | It's growing dark. | Темнеет. |
| to turn | She turned pale. | Она побледнела. |
| to fall | He fell asleep in class. | Он заснул на занятии. |
| to go | She went mad. | Она сошла с ума. |

32. Основные значения некоторых наиболее часто употребляемых предлогов

| | | |
|----------------|--|---|
| on | места (на поверхности) времени (дни) <i>по</i> (теме, вопросу) | on the table, on the roof on Sunday, on the 2nd of August Let's speak on this problem. |
| in | места (<i>в, внутри</i>) времени (месяц, год) <i>через</i> <i>по</i> (предмету) | in the house, in the pocket in spring, in 1980, in May in an hour, in 5 days, in a week an exam in maths, a class in English |
| at | места (<i>у, около</i>) местопребывание времени а также: | at the table, at the window at school, at home, at work at 3 o'clock, at that time, at what time look at , smile at , shout at , aim at |
| of | соответствует русскому родительному падежу | a textbook of English, the 23rd of August, a time of trouble |
| to | направления (<i>к, в</i>) кому? куда? | to me, to her, to his friend to Kiev, to the theatre |
| by | места (<i>у, около</i>) времени (<i>к</i>), соответствует русскому творительному падежу | by the window, by the fire by 2 o'clock, by the evening The song is written by N, translated by M. |
| with | <i>с</i> (кем-л., чем-л.), соответствует русскому творительному падежу | with us, with me, with milk We eat with a spoon, a fork and a knife and write with a pen. |
| without | <i>без</i> | You can't learn to speak English without speaking. I translated it without a |
| for | времени <i>для</i> | for 2 weeks, for a long time, for ever for you, for them, for whom |
| about | <i>о (об)</i> <i>по</i> (без определенного направления) | We speak about films, actors and about the weather. They are walking about the garden. We were walking about the street. |
| from | <i>от, из</i> | from her, from Moscow, from here She ran from the house. |
| within | <i>в, в пределах</i> | You must do it within a week. |

КРАТКИЙ АНГЛО-РУССКИЙ СЛОВАРЬ

Аа

- abruptly – внезапно, резко
accelerate – ускорять, разгоняться
ассепт – принимать (информацию)
access – выборка (из памяти); обращение (к памяти); доступ
accommodate – предоставлять, вмещать, оказывать услугу
accumulator – накапливающий сумматор
accuracy – точность, правильность, меткость
activate – активизировать, приводить в действие
addition – добавление, прибавление, сложение
address – адрес; адресовать; call ~ адрес вызова; dummy ~ текущий адрес;
jump ~ фиктивный адрес; load ~ адрес загрузки
adjustable – регулируемый
ADSL (Asymmetric Digital Subscriber Loop) – асимметричная цифровая абонентская линия
advancement – прогресс, продвижение
advent – приход, наступление
AI (Artificial Intelligence) – искусственный интеллект
align – выравнивать, присоединять
allege – ссылаться на, утверждать
allocation – размещение; memory- распределение памяти
altitude – высота
ALU (Arithmetic / Logic Unit) – арифметико-логическое устройство
ambiguous – двусмысленный, неясный
amendment – поправка, исправление
amount – величина, количество, объем, размер, степень, сумма
amplifier – усилитель; amplify – усиливать
append to – добавлять, присоединять
applet – (от application) апплет, приложение
area – площадь, область, сфера деятельности
ARPA (Advanced Research Projects Agency) – Агентство по перспективным исследовательским проектам МО США
array – массив
arsenide – арсенид
assembly – собрание, сборка
assign – назначать, присваивать, поручать, предписывать, придавать, предназначать
assignment – присвоение; распределение; address ~ присвоение адреса;
unit ~ распределение устройств; value ~ присвоение значения

assumption – предположение, допущение
attachment – крепление, приспособление, насадка
authorized – санкционированный, уполномоченный
auxiliary – вспомогательный; дополнительный
avenue – проход, дорога, путь

Bb

back-propagation – обратное распространение, обратная передача
bear – носить, поддерживать, выносить, терпеть
behaviour – режим работы (машины), поведение
binary – двоичный; бинарный
BIOS (Basic Input-Output System) – базовая система ввода-вывода,

BCBV

blank – пробел, пропуск
Boolean algebra – булева алгебра, алгебра логики
boot – загружать
bottleneck – узкий; затор
bottom – дно, низ
branch instructions – команды ветвления
browse – рассматривать, разглядывать, пролистывать, просматривать
browser – браузер, программа просмотра Web, навигатор
built-in – встроенный, вмонтированный
bulky – громоздкий
bus – канал (информации), шина
buzz – зависать
byte – байт; слог

Cc

calculation – вычисление; расчет
call-in – вызов
capability – способность
capacitor – конденсатор
capacity – емкость, вместительность, способность, производимая мощность
card – карта; плата
carry out – выполнять, исполнять, проводить, осуществлять
CD-ROM (Compact Disk Read Only Memory) – компакт-диск
censorship – цензура
CERN (European Organization for Nuclear Research) – Европейская

организация по ядерным исследованиям

character – знак, символ, цифра, буква

charge – заряд, оплата, заряжать (аккумулятор)

chart – диаграмма; flow ~ блок-схема

circuit – схема; цепь

circuitry – цепи

click – щелчок

Clock Pulses – тактовая частота

clockwise – по часовой стрелке

coaxial – коаксиальный

collaboration – сотрудничество

commodity – товар, продукт

compare – сравнивать

compatible – совместимый

competitive – конкурентоспособный, основанный на конкуренции

complementary – дополнительный

compound – составной, сложный; смесь, соединение

compress – сжимать, прессовать, сокращать

concentric – концентрический

condition – условие, состояние

congestion – перегруженность, перенаселенность, застой

conserve – сохранять, рационально использовать

consumer – потребитель

continuous – непрерывный, сплошной, длительный

contribute – делать вклад, вносить, участвовать

conventional – общепринятый

convert – превращать, преобразовывать

copyright – авторское право

core – оперативная память на магнитных сердечниках, жила, сердечник,

ядро микропроцессора

corporate – корпоративный, общий

counter – счетчик; пересчетное устройство

counterclockwise – против часовой стрелки

counterpart – копия, двойник; counterparts – лица, вещи, взаимно

дополняющие друг друга

cover – закрывать, покрывать, предусматривать, рассматривать,

охватывать

CPU (Central Processing Unit) – центральный микропроцессор, ЦПУ

crash – давать сбои

CRT (Cathode Ray Tube) – электронно-лучевая трубка, ЭЛТ

customer – клиент, покупатель, заказчик

cycle – цикл; период

Dd

data – данные; информация

decay – разрушение, разложение

decision – решение

declaration – описание

decoder – декодер, декодирующее устройство, дешифратор

dedicate – посвящать; dedicated – выделенный, специальный, назначенный

deem – полагать

delay – откладывать, задерживать, медлить

density – плотность, концентрация

departure – уход; отклонение

deployment – дислоцирование

derive – получать, извлекать; derive from – получать от, извлекать из, происходить от

designate – назначать, обозначать

develop – развивать, разрабатывать, конструировать

device – устройство, прибор, средство

dexterity – ловкость, сообразительность

dial-up – коммутируемый по телефонной линии

digit – цифра; разряд

dimension – измерение, размеры, величина

discriminate – различать

disparity – неравенство

disrupt – нарушать

disseminate – распространять (учение, взгляды)

distinguishable – различимый

distributor – распределитель

diverse – разнообразный

domain – владение, имения, область, сфера

dominance – преобладание, господство

download – загружать (в память)

drain – осушать, истощать

driver – управляющая программа; драйвер

drop – ронять, опускать, понижать, исключать, стихать

DSL (Digital Subscriber Line) – абонентская цифровая линия

DWDM (Dense Wave Division Multiplexing) – мультиплексирование по

длине волны, технология спектрального уплотнения
dye – краситель, краска

Ee

eliminate – устранять, исключать, ликвидировать
emergency – непредвиденный случай; авария
enable – способствовать, давать возможность
encompass – охватывать
encounter – встретиться с; сталкиваться с
encrypt – шифровать, зашифровать
enhance – увеличивать, усиливать, улучшать, расширять
ensure – обеспечивать
enterprise – предприятие; *v* предпринимать
equal – равный, одинаковый
equipment – оборудование; computer ~ аппаратура компьютера; control
~ аппаратура управления; peripheral ~ внешнее оборудование
erase – стирать
etch – гравировать, запечатлеть
evaluate – оценивать
evenly – равномерно, ровно
evolve – развивать, эволюционировать, развиваться
exceed – превышать; превосходство
execution – выполнение
exhausted – изнуренный, изнеможенный, изношенный; exhaustively –
исчерпывающе
exhibit – экспонировать, выставить, проявлять
expand – расширять, увеличивать
expose – раскрывать, обнажать; expose to – подвергать
extensive – обширный, значительный
extract – удалять, добывать, вытягивать

Ff

facilitate – способствовать
fade – выцветать, угасать
failure – повреждение; сбой
feature – черта, особенность, передача; художественный
feedback – обратная связь
fiber – волоконный
file – файл; массив

firing rate – КПД (доля работающих нейронов)
firmware – программное обеспечение ЭВМ, встроенное в память
fixed-point numbers – числа с фиксированной запятой (точкой)
flags – флаги, признаки, индикаторы
flexible – гибкий
flip-flop – мультивибратор, триггер
floating – плавающий; отключенный
floating-point numbers – числа с плавающей запятой (точкой)
floppy disc – дискета, гибкий (магнитный) диск
focus – сосредоточивать, собирать
forward – пересылать, продвигать
FTP (File Transfer Protocol) – протокол передачи файлов
funds – средства, запасы, фонды
fusion – плавка, расплавленная маска, сплав, слияние, объединение

Gg

gain – усиление, коэффициент усиления, прирост; увеличить, приобретать, набирать, обеспечивать, побуждать
gallium – галлий
gap – брешь, расхождение, прорыв, пробел
generalize – обобщать
generate – производить, вызывать, создавать
generation – производство; создание; поколение (ЭВМ)
goal – цель
guide – водить, вести, направлять

Hh

handheld – ручной
handle – ручка; v оперировать
handling – обращение (с чем-либо), обработка, перемещение, транспортировка
hard disk – жесткий диск, дисковод, винчестер
hardware – оборудование, «железо»
head – заголовок; read/write ~ универсальная головка (для считывания записи)
heading – заголовок
heat up – согреваться, подогревать, разогревать, обогреть
heuristic – эвристический
highway – шоссе

HTML (Hypertext Markup Language) – язык гипертекстовой разметки

hub – концентратор, хаб

И

IC (integrated circuit) – интегральная микросхема, ИС

identification – идентификация

immense – необъятный, огромный; immensely – бесконечно, необычайно

impede – затруднять

imperfect – несовершенный, дефектный

imply – означать; подразумевать

impose – облагать, навязывать

in full strength – в полном составе

in turn – по очереди

inadvertently – неумышленно

inception – открытие, основание, начало

incompatibility – несовместимость; incompatible – совершенно разный, несовместимый

incorporate – содержать, включать

increment – увеличение, приращение, инкремент

index – показатель

indicate – указывать на; давать знать о; показывать, что

inference – заключение, вывод

infringement – нарушение, ущемление, посягательство

inherent – прирожденный, свойственный, присущий

input – ввод; входное устройство

inquiry – запрос

insight – проницательность, понимание

install – устанавливать, инсталлировать

instruction – команда

integer – целое число

integral – неотъемлемый

integrated – интегрированный, объединенный

interact – взаимодействовать; interaction – взаимосвязь

interface – интерфейс (область взаимодействия между человеком и компьютером)

interfere – вмешиваться, мешать, трогать

intersection – пересечение, точка пересечения

introduction – введение, знакомство

involve – включать в себя, содержать

ISDN (Integrated Services Digital Network) – цифровая сеть с комплексными услугами

issue – издавать, выдавать

item – элемент; единица информации

Jj

jump – переход; команда перехода; *v* – переходить; conditional ~ условный переход; unconditional ~ безусловный переход

jump instructions – команды перехода

Kk

key – ключ; кнопка; клавиша; код

keyboard – клавиатура; коммутационная панель

keypunching – перфорирование

kit – набор, комплект, конструктор

know-how – умение; знание дела

Ll

label – метка; идентификатор; *v* маркировать

lack – отсутствие

laptop – портативный

large-scale – крупномасштабный

launch – спускать, начинать, предпринимать, бросать, запускать, выпускать, бросаться

leak out – вытекать, просачиваться

lift – поднимать, снимать, тащить, рассеиваться

line – линия; провод

loader – программа загрузки

login – регистрация

loop – петля, спираль

loss – утрата, убыток, потеря, проигрыш

Mm

mainframe – центральный блок обработки данных, вычислительная машина

maintenance – поддержание, содержание, обслуживание, утверждение

major – главный, большой, более важный

malfunction – неисправность

manual – руководство; *adj* ручной; computer ~ инструкция к ЭВМ

manufacture – изготавливать, производить; manufacturer – производитель

matrix – матрица; сетка из сопротивлений

memorize – запоминать; хранить

memory – память; addressable ~ оперативная память; external ~ внешняя память; internal ~ внутренняя память; magnetic bubble ~ магнитная пузырьковая память

merchant – торговец

microcircuit – микросхема

MIME (Multipurpose Internet Mail Extension) – многоцелевые расширения почтовой службы в Интернете

mimic – имитировать, подражать

minor – незначительный, мелкий, несовершеннолетний

monitor – контролировать

multitasking – многозадачный режим

mutual – взаимный, обоюдный, общий, совместный

Nn

NAT (Network Address Translation) – трансляция сетевых адресов

navigate – управлять, определять маршрут

network – сеть; схема; сетевой график; контур; neural network – нейронная сеть

node – узел

notation – представление, нотация; numerical ~ числовое представление

Oo

on-line – неавтономный; независимый

operation – действие; операция; режим

operator – оператор

option – вариант, выбор

originate from – происходить от/из; originate in – зарождаться в

outcome – исход, результат

output – выход; вывод; результат

overflow – переполнение; избыток

overhead – наверху, верхний, надземный

overlap – совпадение

overwhelming – полный, подавляющий, невыносимый

overwrite – переписывать

Pp

package – модуль; блок

particular – особый

payload – полезная нагрузка

permanent – постоянный, стойкий

permit – позволять, разрешать, давать возможность

pit – яма, ямка, шахта

place – разряд

playback – воспроизведение; считывание

plug *v* – подключать; plug-in – съемный; сменный

portion – часть, доля, удел, участь

possess – обладать; ~ the value- принимать значение

power – сила, мощность, власть, степень

precision – точность

predict – предсказывать; predictable – предсказуемый

print – шрифт, эстамп, гравюра, отпечаток, след

printer – печатающее устройство

private – личный, персональный

probability – вероятность

processing – обработка данных

program(me) – программа; *v* - программировать

program counter – счетчик команд, программный счетчик

propagate – распространять, разводиться

property – свойство; особенность

province – область

proximity – близость

punch – пробивка; перфорация; *v* - перфорировать

pursue – преследовать, осуществлять, заниматься, следовать

Qq

quadruple – увеличивать(ся) в четыре раза

quality – качество; достоинство

quantify – измерять

quantity – количество; мат. величина

quantum – квантовый

query – запрос на очередь; вопрос

queue – очередь; очередность (запросов)

quotient – частное; коэффициенте

Rr

RAM (Random Access Memory) – оперативная память, оперативное запоминающее устройство, ОЗУ

random – случайный, произвольный

range – помещать, ставить в ряд, колебаться

rate – коэффициент, степень, скорость, темп, уровень

ratio – отношение, коэффициент, соотношение

read-in – ввод (запись) программы в память ЭВМ

readout – считывание

recipient – получатель

record – запись; записывать

reel – катушка, бобина

refer to – ссылаться на, относиться к

region – область; диапазон

reinforce – укреплять, подкреплять

relay – передавать, транслировать; реле, переключатель

release – выпускать (новую версию программного изделия); освобождать, выпускать, отпускать, передавать

reliable – надежный, достоверный

relieve – облегчать, уменьшать, освобождать, оказывать помощь, сменять

remote – отдаленный, замкнутый, незначительный

remove – удалять

replace – замещать

require – нуждаться, требовать; requirement – требование; необходимое условие

research – научно-исследовательская работа

resemblance – сходство

reside – проживать

resident – резидент; резидентная часть программы

respond – отвечать, реагировать, поддаваться

restrict – ограничивать

result in – заканчиваться

retailer – розничный торговец

retain – сохранять, удерживать

retrieval – поиск (информации); retrieve – извлекать информацию

revenue – доходы

robust – крепкий, надежный, устойчивый к ошибкам
ROM (Read-Only Memory) – постоянное запоминающее устройство,
ПЗУ
root – корень
router – маршрутизатор (в сети)
routine – (стандартная) программа
run – выполнять, прогонять (программу)

Ss

sacrifice – приносить в жертву, жертвовать
safe – безопасный, благополучный, надежный
sample – проба, образец
scale – шкала; масштаб
scan – сканирование; просмотр
scholar – стипендиат, ученый
script – сценарий, шрифт, конспект
semiconductor – полупроводник
sequence – последовательность; sequential – последовательный
setting-up – сборка; настройка
share – делить, разделять, владеть совместно
shift – сдвиг
sign – знак
silicon – кремний
similarity – подобие; similarly – подобным образом, таким же образом
simplification – упрощение
simulate – симулировать, изображать
simulation – моделирование; имитация
simultaneously – одновременно
site – страница, сайт
smooth – гладкий, спокойный, мягкий
software – компьютерные программы, программное обеспечение
solution – решение, раствор
specification – спецификация, требование
speculate – размышлять
speculative – предполагаемый
spin – крутить, вращать
spot – пятно; ячейка
spreadsheet – электронная таблица
square – площадь, квадрат, квадратный (по форме)
stack – кipa, стопка

start – пуск; v – запускать
 storage – запоминающее устройство
 store – запоминать, хранить
 straightforward – честный, прямой, открытый
 stream – течение, поток
 strength – сила, прочность, крепость
 string – строка, ряд, веревка, шнурок, струна, нитка
 subscription – подписка, (членский) взнос
 subsequent – последующий; subsequent to – вслед за
 substitute – заменять, замещать, использовать вместо чего-либо
 sufficiently – достаточно, в достаточной мере
 suite – апартаменты
 superscalar – суперскалярный
 supplementary – дополнительный
 surpass – превосходить
 survey – производить осмотр; осматривать;
 топографическая/геодезическая съемка, инспекция, исследование, оценка
 synchronize – сверять, синхронизировать
 synchronize with – совпадать (по времени) с
 system – система; совокупность

Tt

tabulate – сводить в таблицы; табулировать
 TCP/IP (Transmission Control Protocol/Internet Protocol) – протокол
 управления передачей / межсетевой протокол
 terabyte – терабайт
 term – термин, срок; семестр; in ~s of - на языке; с точки зрения
 terminal – терминал; оконечное устройство
 time-table – временная диаграмма; расписание
 tiny – крошечный
 tolerance – допуск; допустимое отклонение
 toll-free – бесплатный
 top – верхняя часть, вершина
 trace – чертить, прослеживать
 traffic – поток информации, движение, нелегальная торговля
 train – ход, цепь
 train on – направлять на
 transfer – передача; пересылка; переход; v - переносить; выполнять
 команду перехода

transmission – передача
transputer – траспьютер, сверхбольшая интегральная схема для
многопроцессорных ЭВМ новых поколений
treatment – обработка; исследование
tremendously – чрезвычайно
tube – труба, камера

Uu

undergo – подвергаться, испытывать, переносить
unforeseen – непредвиденный
unify – объединять
universe – область; совокупность
update – вносить изменения и дополнения
updating – корректировка; модернизация
up-to-date – современный; новейший
URL (Uniform Resource Locator) – унифицированный указатель
(идентификатор) ресурса
usage – использование; применение
Usenet – система телеконференций Интернета
utility – сервисная программа

Vv

valid – действительный; достоверный
variable – переменная (величина)
variety – разнообразие; ряд; множество
vast – громадный, обширный, необъятный
vehicle – летательный аппарат; средство передвижения
verify – проверять, подтверждать
vertebrate – позвоночное
via – через
viable – конкурентоспособный, осуществимый
vice versa – наоборот
view – вид; изображение; проекция
violate – нарушать, осквернять
vision – зрение, видение

Ww

wafer – (кремниевая) пластина, «вафля»

wave – волна; колебание

wear – износ; изнашиваться, носиться, надевать, носить

window – окно; часть экрана дисплея

wipe-out – стирание (с магнитной ленты)

wire – провод, проволока, телеграмма; телеграфировать

writing – запись; документ

Yy

yield – сдаваться, приносить, отступать, возвращать, выдавать

Zz

zero – нуль; нулевая точка

zero-address – безадресный

zone – зона; область; зона перфокарты; storage ~ зона запоминающего устройства

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