

**МИНИСТЕРСТВО ОБРАЗОВАНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ**

**УЧРЕЖДЕНИЕ ОБРАЗОВАНИЯ  
<< БРЕСТСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ >>**

**КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ ПО ТЕХНИЧЕСКИМ СПЕЦИАЛЬНОСТЯМ**

**Пособие  
по развитию основных видов речевой деятельности  
на английском языке  
для студентов специальностей ФЭИС  
дневной и вечерней форм обучения**

**ENGLISH 4 IT**

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Данное пособие составлено в соответствии с требованиями учебной программы «Иностранный язык / английский» для студентов указанных специальностей дневной и вечерней форм обучения.

Целью данного пособия является изучение профессиональной лексики, повторение и систематизация грамматического минимума, формирование навыков и умений чтения англоязычной документации по компьютерным программам и другой оригинальной литературы по специальности, совершенствование навыков перевода, а также развитие профессиональной устной речи в пределах проработанной тематики. Текстовый материал заимствован из зарубежных источников, его тематика определена программой подготовки специалистов технического профиля.

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## Unit 1

**Grammar:** The Plural of Nouns  
**Oral Topic:** What Is a Computer?

### Lexical and Grammar Exercises

**1. Read the following words. Translate the sentences into Russian. Learn the words by heart.**

**1) instruction** [ɪn'strʌkʃ(ə)n] - 1) обучение, образование

Our school provides bilingual instruction. Computer-assisted instruction can help with employee training. Webinars are a popular part of computer-assisted instruction.

*Syn. teaching, training*

2) инструкция, правило, команда

To change row height or column width, follow these instructions. A program is a sequence of machine instructions.

*Syn. command*

**2) to carry out** ['kæri:] - осуществлять, выполнять

We all have certain duties and jobs to carry out. What are the methods of carrying out experimental analysis?

*Syn. to perform, to execute*

**3) unit** ['ju:nɪt] - 1) единица, элемент, часть

Large departments are broken down into smaller units. The pound is the monetary unit of Britain. Electricity consumption is measured and paid for by units, where one unit is the equivalent of 1 kilowatt hour.

2) устройство, установка, прибор

Be careful with this sensing unit, it's very fragile.

**4) central processing unit (CPU)** ['sentr(ə)l 'prəʊsəsɪŋ 'ju:nɪt] ([si:pi:'ju:])- *центральный процессор*

A central processing unit (CPU) carries out the instructions of a computer program and controls the computer's operation.

**5) device** [dɪ'vaɪs] - устройство, приспособление; механизм

A mechanical or electrical unit of computer equipment made or adapted for a particular purpose is called a device. In physics and engineering measurement devices are used to obtain and compare physical quantities of real-world objects and events.

**6) data** ['deɪtə] - данные, факты, сведения; информация

This data was prepared for the conference. All recent data on computer crimes are being compared.

**7) calculation** [ˌkælkju'leɪʃ(ə)n] - вычисление; подсчёт, расчёт

If the first calculation is wrong, we make a second better. Finding ways of saving money involves complicated calculations.

*Syn. computation*

**8) slide rule** ['slaɪd ru:l] - логарифмическая линейка

A slide rule is a mechanical calculating device that you use for calculating numbers; it looks like a ruler and has a middle part that slides backwards and forwards.

**9) to occur** [ə'kɜː] - *случаться, происходить*

An unexpected error occurred. What complications can occur with such an operation? The invention of the computer is one of the most remarkable innovations that have occurred over the last ten decades.

**OCCUR**

You can say that an event **occurs**.

*The accident occurred at 8:40 a.m. Mistakes are bound to occur.*

“Occur” is a fairly **formal word**. In conversation and in less formal writing, you usually say that an event **happens**.

*You might have noticed what happened on Tuesday. A curious thing has happened.*

**Be Careful!**

1) Don't use “occur to” to say that **someone is affected by an event**. Don't say, for example, 'I wonder what's occurred to Jane'. Say 'I wonder what's happened to Jane'.

*She no longer cared what happened to her. It couldn't have happened to a nice man.*

2) Use “occur” to talk about events which are **not planned**. Don't say that a planned event 'occurs' or 'happens'. Say that it **takes place**.

*The first meeting of this committee took place on the 9<sup>th</sup> of January. These lessons took place twice a week.*

**10) set** [set] - *набор; комплект; множество*

A set of instructions is called a program. The vocabulary of a programming language consists of a set of reserved words.

**11) to transform** [træn(t)s'fɔ:m] - *изменять, преобразовывать*

It is the modem's job to transform analog signals into digital ones for computer processing.

*Syn. to convert, to change, to turn into*

**12) to store** [stɔː] - *запоминать; сохранять; накапливать*

The information is stored in a file on my computer. Small computers cannot store as much data as the larger ones.

**13) to retrieve** [rɪ'tri:v] - *отыскивать; извлекать; восстанавливать, возвращать в прежнее состояние*

Your attempt to retrieve your password was not successful.

**14) to process** ['prəuses] - *обрабатывать*

Computers process data. Data processing means any operation performed on the data such as collection, use, management.

**15) to interact** [ˌɪntər'ækt] - *взаимодействовать; влиять друг на друга*

The user interacts directly with the library. A computer system and a user interact by means of the user interface.

**16) integrated circuit** ['ɪntɪgreɪtɪd 'sɜːkɪt] - *интегральная схема; микросхема*

Jack Kilby won the 2000 Nobel Prize in Physics for his part in the invention of the integrated circuit which was made of germanium. Robert Noyce developed his own idea of an integrated circuit made of silicon. ICs are the brains of today's computers.

**17) wafer** ['weɪfə] - *подложка; пластина; плата*

A wafer is a very thin slice of a semiconductor crystal used as the substrate for circuitry.

Wafers contain hundreds of millions of microscopic components.

*Syn. substrate*

**18) purpose** ['rɜːrəs] - *цель, назначение*

**general-purpose** - *общего назначения; универсальный*

An appliance is a device that provides a limited function as compared to a general-purpose computer that can perform any function.

**special-purpose** - *специализированный; специального назначения*

*Syn. dedicated*

A special-purpose computer is a computer designed to perform a specific task. A router is a special-purpose computer (or software package) that handles the connection between two or more networks.

**19) versatile** ['vɜːsətəɪl] - *универсальный; широкого назначения; непостоянный*

From the first electronic digital computers of the forties to today's versatile computers very little has changed as far as basic computer operation is concerned. General-purpose computers are more versatile than special-purpose computers.

**20) word processor** ['wɜːd, prəʊsesə] - *текстовый редактор*

Today most popular word processors offer a much greater range of facilities than the first programs of the kind.

**21) character** ['kærəktə] - *символ*

A character is a unit of information that can be represented by a binary pattern. A character is equivalent to a byte; for example, 50,000 characters take up 50,000 bytes. The word "character" itself takes up nine bytes.

**22) digital** ['dɪdʒɪt(ə)l] - *цифровой*

The conversion of analog data to digital was the start of the information revolution. The 0s and 1s of digital data mean more than just on and off; they mean perfect copying. A digital camera works similarly to a film-based model.

## **2. Give English equivalents for the words in brackets.**

1. A (специализированный) \_\_\_\_\_ computer or program for storing, manipulating, and formatting text is called a word processor.

2. (Сохранять) \_\_\_\_\_ means to copy the data in the computer's memory to an internal storage device or an external storage device such as a disk or USB drive.

3. It may be that what I am talking about will not (произойдет) \_\_\_\_\_ this morning.

4. (Логарифмическая линейка) \_\_\_\_\_ is a calculating device invented more than 350 years ago.

5. Her (вычисления) \_\_\_\_\_ of the building costs proved quite accurate.

6. These (данные) \_\_\_\_\_ represent the results of our analyses.

7. Computers can (выполнять) \_\_\_\_\_ a very complicated task in a fraction of a second.

8. The computer can (обрабатывать) \_\_\_\_\_ thousands of bits of information.

## **3. Replace the following by one word.**

1. A mechanical part of the equipment or an entire apparatus that performs a specific

function. \_\_\_\_\_

2. A segment of code that contains steps to be executed by the computer processor.

3. Facts and statistics collected together for reference or analysis. \_\_\_\_\_

4. A set of electronic circuits on a small plate. \_\_\_\_\_

5. A computer program designed to perform text editing. \_\_\_\_\_

6. Any letter, numeral, etc., which is a unit of information and can be represented by a binary pattern of 1s and 0s. \_\_\_\_\_

7. A collection of objects that have some characteristics in common. \_\_\_\_\_

8. Relating to signals or information represented as digits. \_\_\_\_\_

9. The key component of a computer system, which contains the circuitry necessary to interpret and execute program instructions. \_\_\_\_\_

#### **4. Fill in the blanks with the words from the active vocabulary.**

1. A computer keyboard is a typewriter-style \_\_\_\_\_, which uses buttons or keys.

2. An \_\_\_\_\_ is an electronic circuit formed on a small piece of semiconducting material.

3. Input devices send data to a computer, allowing you to \_\_\_\_\_ with and control the computer.

4. "\_\_\_\_\_" and "save" are synonymous.

5. I did some rapid \_\_\_\_\_ in my head.

6. \_\_\_\_\_ are entered by terminal for immediate processing by the computer.

7. Try to \_\_\_\_\_ your drab office into a cheery workspace.

#### **5. Match the words with similar meaning.**

- |                    |                 |
|--------------------|-----------------|
| 1) instruction     | a) to carry out |
| 2) to perform      | b) computation  |
| 3) special-purpose | c) command      |
| 4) calculation     | d) to save      |
| 5) to store        | e) to convert   |
| 6) to transform    | f) dedicated    |

#### **6. Match the words with opposite meaning.**

- |              |                    |
|--------------|--------------------|
| 1) versatile | a) analog          |
| 2) to store  | b) special-purpose |
| 3) digital   | c) to delete       |
| 4) tiny      | d) to accept       |
| 5) to deny   | e) huge            |

**7. a) Guess the meaning of the following words by their explanation. Write the most suitable translation for each of them.**

**numeric** = consisting entirely of numbers (e.g. "a numeric ID") \_\_\_\_\_

**numerical** = involving numbers (e.g. "some numerical process") \_\_\_\_\_

**digital** = technically means *numerical*, but more commonly means "associated with computers" \_\_\_\_\_

A **number** is a count or measurement, that is really an **idea** in our minds. \_\_\_\_\_

A **numeral** is a **symbol or name** that stands for a number. So the number is an idea, the numeral is **how we write it**. \_\_\_\_\_

A **digit** is a **single symbol** used to make numerals. \_\_\_\_\_

**b) Fill in the blanks with the correct words.**

- \_\_\_\_\_ make up \_\_\_\_\_, and \_\_\_\_\_ stand for an idea of a \_\_\_\_\_.
- The \_\_\_\_\_ 153 is made up of 3 \_\_\_\_\_ ("1", "5" and "3").
- The dog is thinking about six bones. So, the \_\_\_\_\_ represented in his head is 6.
- How many \_\_\_\_\_ does the \_\_\_\_\_ 20,592 have? It has five \_\_\_\_\_, which are 2, 0, 5, 9 and 2.
- Can you show 5 fingers? The \_\_\_\_\_ you represent is 5.
- The Roman \_\_\_\_\_ XVI represents  $10 + 5 + 1 = 16$ .

**8. Study the following tables. Formulate the rule about plural noun forms.**

Singular	Plural	Exceptions to the rule
a dot	dots [s]	foot – feet tooth – teeth fruit – fruit (fruits=types) sheep – sheep craft – crafts works – works
a table	tables [z]	man – men woman – women child – children goose – geese means – means series – series
a stage a box science a database a branch	stages [ɪz] boxes [ɪz] sciences [ɪz] databases [ɪz] branches [ɪz]	Chinese – Chinese ox – oxen plaice – plaice mouse – mice epoch – epochs stomach – stomachs fish – fish (fishes= types) monarch – monarchs
a story a boy	stories [z] boys [z]	Kellys, Germanys
a potato a zoo	potatoes [z] zoos [z]	photo – photos auto – autos piano – pianos Eskimo – Eskimos archipelago – archipelagos kilo – kilos memo – memos dynamo – dynamos
a leaf a knife	leaves [z] knives [z]	chief – chiefs cliff – cliffs belief – beliefs gulf – gulfs roof – roofs proof – proofs safe – safes



Special Cases of Plural Noun Forms	
Singular	Plural
datum	data
stimulus	stimuli
matrix	matrices, matrixes
alga	algae
analysis	analyses
phenomenon	phenomena
chateau	chateaux

Plural Forms of Compound Nouns	
Singular	Plural
housewife	housewives
brother-in-law	brothers-in-law
lady-bird	lady-birds
woman-doctor	women-doctors
forget-me-not	forget-me-nots

**9. Group the following nouns according to the rules of reading the endings:**

Cursors, types, processes, instructions, pages, offices, maps, cards, chips, matches, desks, images, numbers, units, inches, keyboards, branches, databases, materials, messages, hosts, flashes, terminals, dots, stages, devices, computers, defaults, degrees.

**[s]**

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**[ɪz]**

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**10. Give the plurals of the following nouns.**

<b>a)</b> ability	_____	library	_____	journey	_____
half	_____	chief	_____	bookshelf	_____
pass	_____	kilo	_____	Anthony	_____
path	_____	life	_____	holiday	_____
key	_____	mosquito	_____	roof	_____
activity	_____	faculty	_____	hippo	_____
display	_____	kangaroo	_____	hero	_____
cliff	_____	leaf	_____	university	_____

<b>b)</b> child	_____	woman	_____	tooth	_____
ox	_____	food	_____	Japanese	_____
goose	_____	man	_____	craft	_____
species	_____	foot	_____	fruit	_____

<b>c)</b> engineer-in-chief	_____	businessman	_____
schoolboy	_____	looker-on	_____

postman	_____	groupmate	_____
hotel-keeper	_____	mother-in-law	_____
housewife	_____	lady-bird	_____
passer-by	_____	Englishman	_____
man-servant	_____	editor-in-chief	_____
woman-doctor	_____	boy-messenger	_____
customs-house	_____	pocket-knife	_____
merry-go-round	_____	fisherman	_____
theater-goer	_____	flowchart	_____
waste-paper	_____	network	_____
phone-card	_____	bride-to-be	_____
news bulletin	_____	income tax	_____
comrade in arms	_____	loudspeaker	_____
office-worker	_____	commander-in-chief	_____

<b>d)</b> crisis	_____	stimulus	_____	basis	_____
curriculum	_____	alga	_____	axis	_____
criterion	_____	matrix	_____	spectrum	_____
plateau	_____	datum	_____	radius	_____
phenomenon	_____	stadium	_____	bureau	_____
automaton	_____	genius	_____	index	_____
formula	_____	appendix	_____	ellipsis	_____
hypothesis	_____	maximum	_____	locus	_____
equilibrium	_____	insignia	_____	nucleus	_____

**11. Give the plurals of the following nouns (mixed bag).**

Difficulty, way, fax, technology, switch, bug, registry, branch, error, device, language, country, directory, box, day, series, motto, sister-in-law, clock, address, foot, family, puppy, scarf, video, child, foot, ox, deer, church, piano, means, theory, bacterium, text-book, statesman, fellow-worker, schoolgirl, criterion, onlooker, man-of-war, passer-by, customs-house, hotel-keeper, gin-tonic, man-servant, mosquito, cargo, lasso, country, lady, party, key, knife, lightning, leaf, sky, gate, prize, judge, woman, safe, toy, sanatorium, postman, woman-doctor, people, photo, basis, phenomenon, mouse, fish, shelf, sheep, factory, virus.

**12. Make singular of the following nouns.**

antennae	_____	centuries	_____	media	_____
stories	_____	means	_____	paper knives	_____
theses	_____	leaves	_____	cliffs	_____
directories	_____	phenomena	_____	data	_____

**13. Distribute the nouns into the appropriate columns.**

Goods, symbols, clothes, palmtops, servers, mathematics, buffers, modems, wages,

contents, cables, informatics, keyboards, output ports, news, billiards, means, electronics, gloves, proceeds, physics, pajamas, series.

*Singular form only*

*Plural form only*

*Both singular and plural forms*

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**14. Underline the right variant.**

1. This (man has / men have) been waiting here since 6 o'clock.
2. (Knowledge is / knowledges are) power.
3. Machinery (has / have) been concentrated in one place to begin production.
4. Do you know anything about our (equipment / equipments)?
5. They made a lot of (research / researches) on this subject.
6. We needed (an advice / a piece of advice) from our instructor.
7. Two-year (experience is / experiences are) required for this job.
8. We are looking for the police. Where (is it / are they)?
9. Bad (news / newses) (travels / travel) fast.
10. When (money is / money are) spent for brain (it is / they are) never spent in vain.
11. There were several models of computer (mouse / mice) on the table.
12. He prepared special course describing computers for (childrens / children).
13. I have received reliable (data / datas).

**15. Make plural forms of the nouns in brackets if it is possible.**

1. Advanced network and systems management \_\_\_\_\_ (facility) are available through a LAN Manager.
2. We believe that he has special \_\_\_\_\_ (knowledge) which can be useful to scientists.
3. The first programming \_\_\_\_\_ (language) predate the modern computer.
4. These \_\_\_\_\_ (company) produced the first generation computers.
5. \_\_\_\_\_ (Virus) are sometimes confused with computer worms and Trojan horses.
6. The head of our new media department is responsible for the e-, m- and t-commerce \_\_\_\_\_ (activity) (electronic commerce, mobile commerce, TV shopping) of the company.
7. There are many types of \_\_\_\_\_ (memory).
8. COBOL is an acronym for Common Business-Oriented Languages and it is used for commercial \_\_\_\_\_ (purpose).
9. Windows and Unix have similar scripting \_\_\_\_\_ (ability), but while Unix blocks normal \_\_\_\_\_ (user) from having access to make \_\_\_\_\_ (change) to the operating system environment, older \_\_\_\_\_ (copy) of Windows do not.

10. Computer \_\_\_\_\_ (datum) storage refers to computer \_\_\_\_\_ (component), \_\_\_\_\_ (device), and recording \_\_\_\_\_ (medium) that retain digital \_\_\_\_\_ (datum) used for computing for some interval of time.

**16. Translate from Russian into English.**

- 1). Новости нашего агентства всегда приводятся в средствах массовой информации.
- 2). Серия книг о известных изобретателях и их изобретениях очень захватывающая.
- 3). Мы надеялись выполнить работу за два дня.
- 4). Штат лаборатории был подобран очень тщательно.
- 5). Статистика, опубликованная в его статье, шокирует.
- 6). Деньги за оборудование на столе. Возьмите их.
- 7). Его знания в области физики обширны.
- 8). Словари по электронике на полках.
- 9). Позвольте дать вам несколько советов.
- 10). Мои часы отстают, и я часто опаздываю.

**17. Write out a phone message that you might leave with your friend / colleague / husband / wife saying what you might need from the supermarket. Use the phrases: "We need some / a / an / a lot of / two, etc". And "We haven't got much / many / any, etc." with countable and uncountable words.**

**18. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. The term "computer" usually refers to an electronic device that can carry out automatically a series of tasks according to a **precise** set of instructions. \_\_\_\_\_

2. These **tiny** silicon wafers contain hundreds of millions of microscopic electronic components. \_\_\_\_\_

3. CPU controls the computer's **overall** operation. \_\_\_\_\_

4. Special-purpose computers are **designed** to perform specific tasks. \_\_\_\_\_

5. Each new program **enables** the same computer to perform a different set of tasks. \_\_\_\_\_

6. General-purpose computers can **accept** new programs. \_\_\_\_\_

- |                  |                  |              |
|------------------|------------------|--------------|
| a) предназначены | b) полностью всю | c) позволяет |
| d) крошечный     | e) точный        | f) принимать |

**19. Read the text and name 5 elements a computer system consists of.**

### What Is a Computer?

The invention of the computer is one of the most remarkable innovations that have occurred over the last ten decades. The fact that computers have considerably changed lives of human beings can hardly be denied.

A computer is any device that can perform numerical calculations — *an adding machine*<sup>1</sup>, *an abacus*<sup>2</sup>, or a slide rule. Currently, the term usually refers to an electronic device that can

carry out automatically a series of tasks according to a precise set of instructions. The set of instructions is called a program, and the tasks may include making arithmetic calculations, storing, retrieving, and processing data, controlling another device, or interacting with a person to perform a business function or to play a video game.

The “brains” of today's computers are integrated circuits (ICs), sometimes called microchips, or chips. These tiny *silicon*<sup>3</sup> wafers can each contain hundreds of millions of microscopic electronic components and are designed for many specific operations. Some chips make up a computer's central processing unit (CPU), which controls the computer's overall operation; some are *math coprocessors*<sup>4</sup> that perform millions of mathematical operations per second; and others are memory chips that store billions of characters of information at one time.

Computers come in many sizes and shapes. Special-purpose computers are designed to perform specific tasks. Their operations are limited to the programs built into their microchips. These computers can be found in electronic calculators, digital watches, cameras, and automobiles.

General-purpose computers, such as personal computers and business computers, are much more versatile because they can accept new programs. Each new program enables the same computer to perform a different set of tasks. For example, one program instructs the computer to be a word processor, another instructs it to manage *inventories*<sup>5</sup>, and yet another transforms it into a video game.

#### NOTES

1. *an adding machine* – арифмометр; счётная машина
2. *an abacus* – счёты
3. *silicon* – кремний
4. *a math coprocessor* – математический сопроцессор; специализированный процессор, выполняющий над данными математические операции
5. *inventories* – наличные товары, запасы

#### **20. Express your agreement or disagreement with the following statements.**

- 1). The invention of the computer has occurred over the last ten centuries.
- 2). Any device that can perform numerical calculations can be called a computer.
- 3). Integrated circuits are called minichips, or chips.
- 4). Special-purpose computers can be found in electronic calculators, digital watches, cameras, and automobiles.
- 5). Integrated circuits are very small silicon wafers containing microscopic electronic components and are designed to perform specific operations.
- 6). Math coprocessors control the computer's overall operation.
- 7). Computers that control elevators, TV, washing machines, iPods, ATM Machines and cash registers belong to general-purpose computers.

#### **21. Complete the following sentences according to the text.**

- 1). Nowadays, the term “computer” denotes ... .
- 2). A program is ... .

- 3). The “brains” of today's computers are ... .
- 4). A computer's central processing unit ... .
- 5). The operations of special-purpose computers are limited ... .
- 6). General-purpose computers are much more versatile because ... .

**22. Ask your groupmates and let them answer:**

- 1) why computers have considerably changed lives of people;
- 2) if the invention of the computer has occurred over the last twenty decades;
- 3) what devices that can perform numerical calculations they know;
- 4) what they know about microchips;
- 5) what devices containing special-purpose computers they have at home;
- 6) about examples of general-purpose computers.

**23. Discuss in pairs and explain the difference between**

- a) an adding machine and a computer;
- b) an integrated circuit and a central processing unit;
- c) special-purpose and general-purpose computers;
- e) a set of instructions and a set of tasks computers perform;
- f) mechanical and electronic devices;
- g) applications of home and business computers.

**24. Divide the text into logical parts and make an outline of the text.**

**Join simple sentences so as to make them clauses of a compound sentence.**

*Remember that:*

- 1). *The idea of addition may be expressed by conjunctions “and, both ... and, not only ... but, as well as, etc.”*
- 2). *The idea of contrast may be expressed by “yet, but, only, however, etc.”*
- 3). *The idea of alteration may be expressed by “or, either ... or, neither ... nor, otherwise, etc.”*

**Write a summary of the text.**

## Unit 2

**Grammar: to be in Present, Past and Future Simple**

**Oral Topic: Introduction to Computers**

### Lexical and Grammar Exercises

**1. Master the active vocabulary.**

**1). network** ['netwɜ:k] - [вычислительная, компьютерная] сеть

A computer network is the interconnection of many individual computers. Local area

networks link the computers in separate departments of businesses or universities. The Internet was originally formed in 1970 as a military network.

**LAN** (Local Area Network) [læn] - локальная сеть

**WAN** (Wide Area Network) [wæn] - глобальная [вычислительная] сеть

**2). workstation** ['wɜ:k,steɪʃ(ə)n] - рабочая станция (сетевой компьютер, использующий ресурсы сервера)

The workstation is a computer that is a part of a computer network. The personal computers or workstations are connected to a Local Area Network (LAN).

**3). entertainment** [ˌentə'teɪnmənt] - развлечение, веселье; увеселительное мероприятие

Computers are often used for personal entertainment. The art and entertainment industries have become important users of computers. The town provides a wide choice of entertainment.

Syn. **amusement**

**4). capability** [ˌkeɪpə'bɪləti] - способность, возможность

These systems had impressive capabilities to produce realistic graphics, sound, and animation. The constantly improving graphics and sound capabilities of PCs have made them popular tools for artists and musicians.

Syn. **ability**

**5). to share** [ʃeə] - делить, распределять; разделять

People may quickly and easily share files; modify databases; send e-mail. The two chemists shared the Nobel prize. We shared the cost of the computer between us.

**6). server** ['sɜ:və] - сервер (центральный компьютер сети, управляющий распределением ресурсов и централизованным доступом к данным)

Servers are fast computers that have greater data processing capabilities. Several PCs and workstations can be connected to a server. Most companies and many organizations have their own Web servers.

**7). mainframe** – мэйнфрейм (главный компьютер вычислительного центра)

Mainframes are large, extremely fast, multiuser computers. Mainframes use proprietary operating systems. Personal computers became faster and more powerful, today they are able to run sophisticated programs previously run only on mainframes.

**8). array** [ə'reɪ] - набор, комплект; множество, массив

Computers contain complex arrays of processors. There is a vast array of books on the subject.

Syn. **bunch, batch, collection**

**9). to handle** ['hændl] - управлять, заведовать; контролировать; обходиться, обращаться; управляться, справляться (с кем-л. / чем-л.)

Mainframes can handle huge databases. Large computer systems handle high volumes of constantly changing data. Computer operators typically handle several types of computers.

Syn. **deal with smb/smeth, control, organize**

**10). database** ['deɪtəbeɪs] - база данных

Today, networks carry e-mail and provide access to public databases. Databases are used within a medical context for many purposes.

**11). circuitry** ['sɜ:kɪtri] - схемы; цепи; компоновка схем; схемотика

Critical circuitry is supercooled to a temperature of nearly absolute zero. The circuitry in this

aircraft has been protected against strong magnetic fields.

**12). circuit** ['sɜ:kɪt] - *схема, микросхема; линия связи, канал двусторонней связи*

A processor consists of many different electronic circuits.

*Related words: circuit board* (печатная (схемная, монтажная) плата)

**13). to require** [rɪ'kwaɪə] – *требовать; нуждаться; являться необходимым*

Regulations require that students attend at least 90% of the lectures. BASIC was developed in 1965 at Dartmouth College in the United States for students who required a simple language to begin programming. Since 1998, each student has been required to own a personal computer.

*Syn. to need, to want*

**14). application** [ˌæplɪ'keɪʃ(ə)] - *1) применение, использование*

Modern computers have a myriad of applications.

*Syn. use, want*

*2) приложение (часто используется наряду с термином program (программа))*

Between the early 1970s and 1980s, computer science rapidly expanded in an effort to develop new applications for personal computers. Video games are one of the most popular PC applications.

**15). to improve** [ɪm'pru:v] - *улучшать(ся); усовершенствовать(ся)*

Supercomputer capabilities are continually being improved. Computer consultants improve the efficiency of computer systems. Computer networks should improve our work environments and technical abilities.

*Syn. to make better*

**16). to perform** [rə'fɔ:m] - *выполнять (операцию); производить (действие)*

Computers can perform a very complicated task in a second. In the future, many tasks will be performed by robots. Mainframes are designed to perform a specific function.

*Syn. to carry out, to accomplish*

## **2. Give English equivalents for the words in brackets.**

1. (Рабочая станция) \_\_\_\_\_ is a type of computer used for engineering (приложения) \_\_\_\_\_.

2. (Суперкомпьютеры) \_\_\_\_\_ are very expensive and are employed for specialized applications that (требовать) \_\_\_\_\_ immense amounts of mathematical calculations.

3. Therefore, computers can (выполнять) \_\_\_\_\_ complex and repetitive procedures quickly, precisely and reliably.

4. The processing (возможности) \_\_\_\_\_ of (мэйнфреймы) \_\_\_\_\_ are measured in MIPS, or millions of instructions per second.

5. A mainframe can (справляться с) \_\_\_\_\_ hundreds or thousands of connected users simultaneously.

6. Television (сети) \_\_\_\_\_ often use supercomputers to generate complicated images.

7. Bits are transferred internally within the (схемы) \_\_\_\_\_ of the computer along electrical channels.

8. Computers allow users to (делиться) \_\_\_\_\_ the information with other



computer users.

**3. Replace the following by one word.**

1. A large powerful computer that can work very fast and that a lot of people can use at the same time. \_\_\_\_\_
2. A systematized collection of data that can be accessed immediately and manipulated by a data processing system for a specific purpose. \_\_\_\_\_
3. The system of circuits used in an electronic device. \_\_\_\_\_
4. A computer program with an interface, enabling people to use the computer as a tool to accomplish a specific task. \_\_\_\_\_
5. A computer that is part of an office computer system. \_\_\_\_\_
6. The main computer on a network, which controls all the others. \_\_\_\_\_
7. A set of computers that are connected to each other so that they can share information. \_\_\_\_\_
8. A very fast, powerful mainframe computer used in advanced military and scientific applications. \_\_\_\_\_

**4. Fill in the blanks with the words from the active vocabulary.**

1. Word processing software can \_\_\_\_\_ the quality of written work.
2. \_\_\_\_\_ software can efficiently handle large data tables.
3. A formula or function \_\_\_\_\_ calculations on the data and displays the result.
4. Many software \_\_\_\_\_ are designed specifically for use at home or for personal or educational use.
5. One of the main reasons people use computers is to communicate and \_\_\_\_\_ information.
6. A bit (short for binary digit) is the smallest unit of data a computer can \_\_\_\_\_.
7. These circuit boards add new devices or \_\_\_\_\_ to the computer.
8. A \_\_\_\_\_ can be used by a single-user for applications requiring more power than a typical PC (rendering complex graphics, or performing intensive scientific calculations).

**5. Match the words with similar meaning.**

- |                |                 |
|----------------|-----------------|
| 1) to improve  | a) to carry out |
| 2) to perform  | b) to better    |
| 3) application | c) to connect   |
| 4) to require  | d) use          |
| 5) array       | e) to deal with |
| 6) to handle   | f) collection   |
| 7) to link     | g) to need      |

**6. Match the words with opposite meaning.**

- |            |            |
|------------|------------|
| 1) complex | a) general |
|------------|------------|

- 2) specific
- 3) to link
- 4) to improve

- b) simple
- c) to become worse
- d) to disconnect

**7. Study the following table. Formulate the rule.**

Simple			
	Affirmative	Negative	Question form
Present	I – <b>am</b> he/she/it – <b>is</b> we/you/they – <b>are</b>	I – <b>am not</b> ('m not) he/she/it – <b>is not (isn't)</b> we/you/they – <b>are not (aren't)</b>	<b>Am I ...?</b> <b>Is</b> he/she/it ...? <b>Are</b> we/you/they
Past	I – <b>was</b> he/she/it – <b>was</b> we/you/they – <b>were</b>	I – <b>was not (wasn't)</b> he/she/it – <b>was not (wasn't)</b> we/you/they – <b>were not (weren't)</b>	<b>Was I ...?</b> <b>Was</b> he/she/it ...? <b>Were</b> we/you/they ...?
Future	<b>will be</b>	<b>will not (won't) be</b>	<b>Will ... be...?</b>
Past Participle	been		
Present Perfect	has/have been		
Past Perfect	had been		
The verb <b>be</b> is used in the following patterns:			
1. with a <b>noun</b> : <i>My mother <b>is</b> a teacher. Bill Clinton <b>was</b> the president of the US.</i>			
2. with an <b>adjective</b> : <i>This soup <b>is</b> very tasty. The children <b>were</b> good.</i>			
2.1 with the <b>-ing</b> form to make <b>the continuous</b> aspect <i>We <b>were walking</b> down the street. Everything was wet. It <b>had been raining</b> for hours.</i>			
2.2 with the <b>-ed</b> form to make <b>the passive</b> voice <i>The house <b>was built</b> in 1890. The street <b>is called</b> Montagu Street. This car <b>was made</b> in Japan.</i>			
3. with a <b>prepositional phrase</b> : <i>John and his wife <b>are from Manchester</b>. The flowers <b>are on the table</b>.</i>			

**8. Complete the sentences with the correct form of the verb to be:**

1. I \_\_\_\_\_ 17 years old. 2. How old \_\_\_\_\_ you? 3. He \_\_\_\_\_ interested in information technology. 4. He \_\_\_\_\_ not at the University yesterday. 5. We \_\_\_\_\_ in the classroom now. 6. They \_\_\_\_\_ in the next room. 7. \_\_\_\_\_ you \_\_\_\_\_ at the seminar tomorrow? 8. Her sister \_\_\_\_\_ a good engineer. 9. Yesterday two students \_\_\_\_\_ absent. Today all \_\_\_\_\_ present. 10. Next Monday the first lesson \_\_\_\_\_ English. 11. I \_\_\_\_\_ very busy tomorrow. 12. G. Byron \_\_\_\_\_ born in 1788. 13.

Digital cameras \_\_\_\_\_ the most common and the most popular cameras. 14. \_\_\_\_\_ mainframes the most powerful computers? — No, they \_\_\_\_\_. 15. The speed and power of a supercomputer \_\_\_\_\_ almost beyond human comprehension. 16. \_\_\_\_\_ the Colossus the first electric programmable computer, developed by Tommy Flowers in 1943? 17. I \_\_\_\_\_ a programmer in 4 years' time. 18. We \_\_\_\_\_ busy with mathematics yesterday. 19. What do you think \_\_\_\_\_ computers \_\_\_\_\_ like in 2040? 11. Many processing units \_\_\_\_\_ linked in such a way that they can all work on a single problem simultaneously. 12. Scientists \_\_\_\_\_ continually improving supercomputer capabilities. 13. An example of a shared resource \_\_\_\_\_ a large collection of information called a database.

**9. Study the following table. Formulate the rule.**

**There + to be**

1. We use a **singular** verb if the **noun phrase is singular**:

*There **is** a meeting this evening. It will start at seven. There **was** a lot of rain last night.*

2. We use a **plural** verb if the **noun phrase is plural**:

*There **are** more than twenty people waiting to see you. There **were** some biscuits in the cupboard.*

3. We use **there** as a dummy subject with part of the verb be followed by a noun phrase:

- 3.1. to **introduce** a **new topic**:

***There is** a meeting this evening. It will start at seven. **There has been** an accident. I hope no one is hurt.*

- 3.2. with **numbers** or **quantities**:

***There was** a lot of rain last night. **There must have been** more than five hundred in the audience.*

- 3.3. to say **where** something is:

***There is** a playground at the end of the street. **There are** fairies at the bottom of the garden. I wonder if **there will be** anyone at home.*

- 3.4. with an **indefinite pronoun** or expressions of **quantity** and the **to**-infinitive:

***There is** nothing to do in the village. **There was** plenty to read in the apartment. **There was** nothing to watch on television. **There is** a lot of work to do.*

- 3.5. If we want to show the subject of the **to**-infinitive we use **for**:

***There is** nothing for the children to do in the village. **There was** plenty for us to read in the apartment.*

***There was** nothing for them to watch on television. **There is** a lot of work for you to do.*

- 3.6. with an **indefinite pronoun** or expressions of **quantity** and an **-ing** verb:

***There is** someone waiting to see you. **There were** a lot of people shouting and waving.*

**10. Complete the sentences with the correct form of the verb to be:**

1. There \_\_\_\_\_ two fundamentally different types of computers—analogue and digital. 2. In 1953 there \_\_\_\_\_ only about 100 computers in use in the entire world. 3. There \_\_\_\_\_ a freshman party at Nick's today. Do you want to go? 4. In the future, there \_\_\_\_\_ innovations that will help extend the capabilities of computers. 5. \_\_\_\_\_ there any spare space on this flash drive? 6. Rechargeable batteries can operate the system if there \_\_\_\_\_ a power failure. 7. There \_\_\_\_\_ (not) enough bandwidth to handle the increasing volume of Web hits to the site, so a new strategy was needed. 8. How many categories of computer software \_\_\_\_\_ there? 9. \_\_\_\_\_ there workstations which did not meet the requirements? 10. When I switched on the computer, there \_\_\_\_\_ a problem communicating with Google servers.

**11. Write sentences by putting the words in the correct order:**

1. was/a/practical component/there/the/course/in

---

2. no/film/there/in/is/digital/a/camera

---

3. to use/there/courses/are/how/some/good/on/the Internet/it

---

4. bite/there/eight/in/are/a/bits

---

5. systems/a lot of/ file/are/there

---

6. cybernetics/a/was/lecture/there/on/yesterday

---

7. eight/there/computer/its/uses/are/steps/in/that/any/work/doing

---

**12. Make up sentences using there + to be:**

a) There is ... /There are ....

(a Physics department, many clubs, three reading-halls, a colour monitor, a microcomputer, a dean's office, an old park, textbooks, a computer centre).

b) There was ..../There were ....

(an interesting lecture, two seminars, many students, a meeting, a discussion, two delegations, an English textbook, dictionaries, some new teachers).

c) There will be ... .

(a museum, a new computer, some operators, a lecture on economics, a laser printer, a conference, 15 terminals, a new input device).

**13. Translate from Russian into English:**

a) 1. Компьютер – это электронное устройство. 2. Компьютер ЭНИАК (ENIAC) был первой электронно-вычислительной цифровой машиной. 3. Первые компьютеры не были похожи на современные. 4. Мейнфреймы представляют собой большие компьютеры, которые выполняют обработку данных больших объемов. 5. Суперкомпьютеры – это очень мощные системы, которые появились в 60-х годах. 6. Первые компьютеры были огромными и весили несколько десятков тонн. 7. Lenovo ThinkStation — семейство надежных рабочих станций. 8. Сервер – это устройство для сетевого использования. 8. Какими будут компьютеры в будущем? 9. Кто был основателем компании “Apple”? 10. Обновление вашего компьютера не будет большой проблемой.

b) 1. Существуют различные виды компьютеров. 2. В следующем году в нашем университете появится новая лаборатория. 3. В мире существует множество вычислительных сетей. 4. В начале 60-х существовало несколько UNIX-систем, которые

были созданы разными компаниями. 5. Появятся ли квантовые (quantum) компьютеры в каждом доме через 10 лет? 6. В то время не существовало программируемых компьютеров. 8. Сколько лазерных принтеров в вашем офисе? 9. Вчера не было лекции по физике. 10. В будущем в наших домах появится больше роботов.

**14. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. Today's PCs can be used for household management and personal entertainment. \_\_\_\_
2. Workstations are generally used for scientific, engineering, or advanced business applications. \_\_\_\_
3. Servers have greater data-processing capabilities than most PCs and workstations. \_\_\_\_
4. Mainframes are large, extremely fast, multiuser computers. \_\_\_\_
5. Mainframes can simultaneously accommodate scores of users. \_\_\_\_
6. Critical circuitry is supercooled to a temperature of nearly absolute zero. \_\_\_\_

a) множество	b) многопользовательский	c) важный
d) продвинутый, прогрессивный	e) домоводство	f) возможности обработки данных

**15. Name the different types of computers you know. What functions do they perform? What are the differences between them? Study the text below to check your answers.**

**Introduction to Computers**

Today's **PCs** can perform several billion operations per second. They are used not only for household management and personal entertainment, but also for most of the automated tasks required by small businesses, including word processing, tracking inventory, and calculating accounting information. The fastest desktop computers are called **workstations**, and they are generally used for scientific, engineering, or advanced business applications.

**Servers** are fast computers that have greater data processing capabilities than most PCs and workstations and can be used simultaneously by many people. Often several PCs and workstations are connected to a server via a local area network (LAN). The server controls resources that are shared by the people working at the PCs and workstations. An example of a shared resource is a large collection of information called a database.

**Mainframes** are large, extremely fast, multiuser computers that often contain complex arrays of processors, each designed to perform a specific function. Because they can handle huge databases, simultaneously accommodate scores of users, and perform complex mathematical operations, they have been the mainstay of industry, research, and university computing centers.

The speed and power of **supercomputers** are almost beyond human comprehension, and their capabilities are continually being improved. The fastest of these machines can perform many trillions of operations per second. Supercomputers attain these speeds through the use of several advanced engineering techniques. For example, critical circuitry is supercooled to a

temperature of nearly absolute zero so that electrons can move at the speed of light, and many processing units are linked in such a way that they can all work on a single problem simultaneously. As these computers can cost billions of dollars and they can be large enough to cover the size of two basketball courts, they are used primarily by government agencies and large research centers.

**16. Express your agreement or disagreement with the following statements.**

1. Today's PCs can perform most of the automated tasks required by small businesses.
2. The fastest desktop computers are called workstations.
3. Workstations are generally used to control resources shared by the people.
4. Servers have greater data-processing capabilities than most PCs and workstations.
5. Mainframes can handle huge databases, simultaneously accommodate scores of users, and perform complex mathematical operations.
6. The fastest supercomputers can perform many millions of operations per second.
7. Supercomputers are used primarily by government agencies and large research centers.

**17. Complete the following sentences according to the text.**

1. Today's PCs are used for ... .
2. The term "workstation" refers to ... .
3. A server is... .
4. Servers can perform the following functions: ... .
5. Mainframes contain ... .
6. Mainframes can handle ... .
7. The speed and power of supercomputers are ... .

**18. Ask your groupmates and let them answer:**

1. what operations computers can perform;
2. what application areas of workstations they know;
3. what they know about data-processing capabilities of servers;
4. if mainframes can handle huge databases;
5. what engineering techniques allow supercomputers to attain amazing speeds;
6. what application areas of supercomputers they can name.

**19. Work in pairs. Compare different computer types, mentioned in the text, on the following points:**

- 1) data-processing capabilities;
- 2) data-processing speed;
- 3) application area.

**20. Divide the text into logical parts. Make a summary of the text. Use the following introductory phrases:**

*-the title of the text is...;*

- as you can see from the title the text dwells upon...;
- according to the text...;
- as far as I can understand...;
- the text is on the subject I am greatly interested in...;
- I find the text rather interesting (important, dull, difficult, disputable, informative) because...;
- the text will be noted by those who take interest in... .

**21. Write a paragraph describing the computer you have and the one you would like to have.**

### Unit 3

**Grammar: Word Order and Sentence Structure**

**Oral Topic: Computer Applications**

#### Lexical and Grammar Exercises

##### **1. Master the active vocabulary.**

**1) image** ['ɪmɪdʒ] – образ; изображение

A display, or a monitor, displays video signal of still images and moving pictures produced by a computer or a similar device. Images may be two-dimensional such as a photograph, a screen display, and three-dimensional such as a statue or a hologram.

**2) to enhance** [ɪn'hɑ:n(t)s] – увеличивать, усиливать, улучшать

They want to enhance their reputation abroad. Computer techniques enhance images.

Syn. **to improve**, **to increase**

**3) launch** [lɔ:ntʃ] – 1) запуск; 2) запускать

They are going to launch an artificial satellite tomorrow. He is planning to launch his business. I am trying to launch a program prior to debugging.

**4) link** [lɪŋk] – 1) соединять, связывать

The Internet links computers all over the world. The Channel Tunnel links Great Britain and France.

Syn. **to connect**

2) ссылка

I'll send you the link to my website. Just follow the link down below! Links can point to another part of the same document, in this case clicking the link will cause the browser to move to a new part of the currently displayed document. Please do not answer this fraudulent e-mail and certainly do not click on the links in the e-mail.

**5) computer-aided design (CAD)** [kæd] – автоматизированное проектирование, САПР

She was the second-place winner in the computer-aided design competition.

**6) dimension** [daɪ'men(t)ʃ(ə)n] – размер, величина, измерение

The drawing must be precise in dimension. The final dimensions of the plot were 14 feet by 8 feet. A straight line has one dimension, a parallelogram has two dimensions, and a

parallelepiped has three dimensions. A model is a three-dimensional representation of a person or a thing, typically on a smaller scale than the original.

*Syn. measurement, proportion, size*

**7) computer-aided manufacturing (CAM)** [kæm] – *автоматизированное производство*

They use computer-aided design and manufacturing (CAD/ CAM) software to draw and scale a part. Computer-aided manufacturing (CAM) is the use of computer software to control machine tools and related machinery in the manufacturing of workpieces.

**8) computer-assisted instruction (CAI)** [kaɪ] – *программированное обучение, компьютеризированное обучение, обучение с использованием компьютера*

The main problems in computer-assisted instruction are the elaboration (разработка) of the theory of CAI on the basis of modern scientific concepts and the creation of the CAI technology.

**9) automated** [ˌɔ:tə'meɪtɪd] – *автоматизированный, автоматический*

If they do not email you back you'll get an automated reply. Automated testing requires no operator input, analysis, or evaluation.

*Syn. automatic*

**10) to generate** ['dʒen(ə)reɪt] – *создавать, порождать, производить, генерировать*

I once read an interesting anthology of poetry generated by a computer program in 1984. Let a computer program generate your passwords for you. Tourism generated many new jobs. Nuclear power is used to generate electricity.

*Syn. to produce*

**11) to compile** [kəm'paɪl] – *составлять, компилировать, собирать*

Computers speed up the process of compiling dictionaries. Google Maps is a web mapping service that compiles information from many sources.

**12) to maintain** [meɪn'teɪn] – *поддерживать, обслуживать, содержать в исправности*

Laser printers are generally less expensive to maintain than ink jet printers. A computer can stay fast and reliable if it is properly maintained. Maintaining high quality control standards can help improve company reputation.

**13) to simulate** ['sɪmjəleɪt] – *имитировать, моделировать, воспроизводить условия при испытании*

During the drill we will simulate emergency conditions. From the start, you can simulate real-world environments and actual product conditions to optimize performance while you design. Computer software can be used to simulate conditions on the sea bed. Role-play is a way of simulating real-life situations.

*Syn. to replicate*

**14) available** [ə'veɪləbl] – *доступный, имеющийся в наличии, действительный*

This offer is available for five days. Before using this product, carefully read this manual and the additional information available at our site. He based his report on the available statistics. Encyclopedias and other reference works, are available to PC users—either on discs or through the Internet.

**15) tool** [tu:l] – *инструментальное средство, инструмент; сервисная программа*

Education is a tool for success. This tool will come in handy during the experiment. As a computer technician you need to have the right tools with you at all times in order to perform your job effectively. Electronic design automation (EDA) is the category of tools for designing



and producing electronic systems ranging from printed circuit boards (PCBs) to integrated circuits.

**16) complex** ['kɒmpleks] – *сложный, составной*

The universe is interesting and complex. We regularly solve complex problems with amazing creativity. The element has sizes down to about 20 nanometers, and it's a complex 3D structure. Here are some examples of how to handle more complex situations.

## **2. Give English equivalents for the words in brackets.**

1. Insert (изображения) \_\_\_\_\_ into a spreadsheet.
2. How passwords are (создаются) \_\_\_\_\_?
3. (Автоматизированное проектирование) \_\_\_\_\_ is software used in art, architecture, engineering and manufacturing.
4. Find the (размерность) \_\_\_\_\_ of this subspace.
5. Performing regular (обслуживание) \_\_\_\_\_ on your printer will prolong its life.
6. In carrying out an experiment you reproduce the conditions of a situation that is you (моделируете) \_\_\_\_\_ the situation.
7. Please inform me what options are (доступны) \_\_\_\_\_ to me.
8. Nowadays computers are an essential (инструмент) \_\_\_\_\_ everywhere.

## **3. Replace the following by one word.**

1. A measurable extent of some kind, such as length, breadth, depth, or height. \_\_\_\_\_
2. The use of computer techniques in designing products, involving the use of computer graphics. \_\_\_\_\_
3. To produce (something, esp. a list, report, or book) by assembling information collected from other sources. \_\_\_\_\_
4. A visible impression obtained by a camera or other device, or displayed on a video screen. \_\_\_\_\_
5. To produce a computer model of. \_\_\_\_\_
6. Able to be used or obtained; at someone's disposal. \_\_\_\_\_
7. To keep something in good condition or in working order by checking or repairing it regularly. \_\_\_\_\_
8. Consisting of many different and connected parts. \_\_\_\_\_

## **4. Fill in the blanks with the words from the active vocabulary.**

1. Please do not answer this fraudulent e-mail and certainly do not click on the \_\_\_\_\_ in the e-mail.
2. Can we \_\_\_\_\_ the image?
3. \_\_\_\_\_ a computer is to deal with the equipment itself, to replace parts as well as to keep software up to date and to fix bugs and errors.
4. Space-time has three \_\_\_\_\_ of space and one of time.
5. \_\_\_\_\_ a program means to convert it into a machine-code or lower-level form in which the program can be executed.

6. \_\_\_\_\_ may refer to the use of a computer to assist in all operations of a manufacturing plant, including planning, management, transportation and storage.
7. The subscriber is not \_\_\_\_\_ now. Please, call back later.
8. What type of \_\_\_\_\_ do you require for the job?

**5. Match the words with similar meaning.**

- |                 |                    |
|-----------------|--------------------|
| 1) to design    | a) to allow        |
| 2) prediction   | b) to convert      |
| 3) dedicated    | c) monitor         |
| 4) to enable    | d) important       |
| 5) to transform | e) forecast        |
| 6) display      | f) special-purpose |
| 7) essential    | g) to create       |

**6. Match the words with opposite meaning.**

- |               |                   |
|---------------|-------------------|
| 1) natural    | a) manual         |
| 2) complex    | b) to deteriorate |
| 3) to improve | c) artificial     |
| 4) automated  | d) simple         |

**7. a) Study the table.**

<p><b>What is the difference between “complicated” and “complex”?</b></p> <p><b>Complex</b> is used to say that something consists of several components. If a problem is complex, it means that it has many components. Complexity does not evoke difficulty.</p> <p><b>Complex</b> is generally used in technical situations (esp. mathematics and chemistry), where a problem has a lot of components and aspects.</p> <p><b>Complicated</b> refers to a high level of difficulty. If a problem is complicated, it will certainly take a lot of hard work to solve.</p> <p><b>Complicated</b> is used to speak about something that is intricate, difficult to analyze or understand or involves many different and confusing aspects.</p> <p><b>Complicated</b> is used in social situations and in medicine involving complications.</p>
---

**b) Fill in the blanks with the correct words.**

- 1) A \_\_\_\_\_ network of water channels.
- 2) A long and \_\_\_\_\_ saga.
- 3) A \_\_\_\_\_ appendicitis.
- 4) The chemical processes involved are extremely \_\_\_\_\_ .
- 5) This project's architecture is \_\_\_\_\_.
- 6) I didn't realize programming the VCR would be so \_\_\_\_\_ .
- 7) The brain is like a very powerful, very \_\_\_\_\_ computer.
- 8) A system can be very \_\_\_\_\_ but not \_\_\_\_\_ at all. \_\_\_\_\_ systems can be solved with enough computing power. \_\_\_\_\_ systems cannot be solved.

9) It is OK if something is \_\_\_\_\_ so long as it is not \_\_\_\_\_ .

8. a) **Study the following tables.**

### Word Order

#### Affirmative sentences (Утвердительные предложения)

Обстоятельство	Подлежащее	Сказуемое	Дополнения			Обстоятельства		
			Беспредложное косвенное	Прямое	Предложное косвенное	Образ действия	Места	Времени
времени								
	<i>I</i>	<i>met</i>		<i>him</i>		<i>by chance</i>	<i>at the office</i>	<i>yesterday.</i>
<i>Last summer</i>	<i>my friend</i>	<i>wrote</i>	<i>his parents</i>	<i>letters</i>		<i>very often.</i>		
	<i>They</i>	<i>have told</i>		<i>the news</i>	<i>to him.</i>			
	<i>The sellers</i>	<i>will send</i>	<i>the buyers</i>	<i>the documents</i>				<i>at the end of the week.</i>

#### The place of indefinite adverbs

Случаи употребления	Примеры
1. перед глаголом-сказуемым	<i>He <b>usually</b> comes to work early.</i>
2. после глагола <b>to be</b>	<i>They are <b>never</b> late.</i>
3. после первого вспомогательного глагола	<i>He has <b>just</b> been asked. He can be <b>still</b> sleeping.</i>
4. <b>yet, before, lately, recently</b> в конце предложения	<i>Have you finished your homework <b>yet</b>?</i>

b) **Restore the original affirmative sentences.**

1) or, link, departments, in, LANs, separate, of, business, the computers, universities.

---

2) the Internet, and, other, are, available, reference, PC users, on, works, discs, or, encyclopedias, through, to.

---

3) 3-D, to, enable, design, on, screen, programs, computer, engineers, models, a.

---

4) today, is, very, computers, important, the knowledge, of.

---

5) write, page, top, name, of, the, at, your, the.

---

6) human, have, computers, considerably, lives, of, changed, beings.

---

7) have, through, generations, computers, gone, four.

---

8) in, IBM, their, the, USA, microcomputer, introduced, own, 1981, in.

### 9. a) Study the tables.

К вспомогательным глаголам относятся:

<i>Видовременные формы глагола</i>	<i>Вспомогательный глагол</i>
V Vs (es) Ved / V <sub>2</sub>	do does did
am Ving is Ving are Ving was Ving were Ving	am is are was were
have Ved / V <sub>3</sub> has Ved / V <sub>3</sub> had Ved / V <sub>3</sub>	have has had
will V will be Ving will have Ved / V <sub>3</sub>	will

### Interrogative sentences (Вопросительные предложения)

Специальный вопрос	Общий вопрос				
Вопросительное слово	Вспомогательный глагол	Подлежащее	Сказуемое (смысловый глагол)	Дополнение	Обстоятельство
	<i>Is</i>	<i>your colleague</i>	<i>testing</i>	<i>the program</i>	<i>now?</i>
<i>Why</i>	<i>is</i>	<i>your colleague</i>	<i>testing</i>	<i>the program</i>	<i>now?</i>
	<i>Do</i>	<i>you</i>	<i>remember</i>	<i>our business trip</i>	<i>to Brussels?</i>
<i>What</i>	<i>do</i>	<i>you</i>	<i>remember</i>	<i>about our business trip</i>	<i>to Brussels?</i>
	<i>Have</i>	<i>you</i>	<i>completed</i>	<i>the experiment</i>	<i>today?</i>
<i>How</i>	<i>have</i>	<i>you</i>	<i>completed</i>	<i>the experiment</i>	<i>today?</i>

### Вопрос к подлежащему или его определению

Вопросительное слово	Сказуемое	Дополнение	Обстоятельство
<i>Who</i>	<i>is (was, will be) reading</i>	<i>a book</i>	<i>at the window?</i>
<i>Who</i>	<i>lives (lived, will live)</i>		<i>in that old brick house?</i>
<i>What</i>	<i>has (had, will have) been done</i>		<i>by the end of the week?</i>
<i>How many people</i>	<i>work</i>	<i>with you</i>	<i>in the laboratory?</i>

**b) Restore the original general and special questions.**

1) movies, you, free, download, action, for, do.

---

2) copy, give, anyone, to, the disk, a, of, did, you.

---

3) the, affect, lives, does, Internet, our, how?

---

4) situated, Valley, where, is, Silicon?

---

5) video, and, devices, multimedia, when, appear, using, sound, applications, did?

---

6) link, area, what, networks, do, local

---

7) experience, in, systems, programming, and, had, you, maintaining, computer, have, any?

---

8) still, new, homes, for, computer, finding, are, people, applications, their?

---

**10. Identify the auxiliary verb and put general and special questions to the sentences.**

1. Different devices have been used to aid computation for thousands of years.

---

2. Charles Babbage, an English mechanical engineer, originated the concept of a programmable computer.

---

3. Scientists and researchers use computers to collect, store, manipulate, and analyze data.

---

4. The computer performs numerical calculations.

---

5. Researchers are currently developing microchips called digital signal processors.

---

6. Computer development is rapidly progressing.

---

7. Computers have taken a major position in the world because they can execute many tasks more effectively than humans.

---

8. Tomorrow's individual computer applications will change dramatically and will perform any personal tasks for us.

---

**11. Study the table. Put disjunctive questions to the sentences.**

**Disjunctive Questions (Tag questions)**

Повествовательное предложение	Вспомогательный глагол в противоположной форме	Подлежащее в виде местоимения
The computer <b>performs</b> numerical calculations,	doesn't	it?
<b>Special cases</b>		
I <b>am</b> older than you, I <b>am not</b> busy,	aren't am	I? I?
<b>There</b> are some seats left,	aren't	there?
<b>This (That)</b> pen is Mary's,	isn't	it?
<b>These (Those)</b> are your things,	aren't	they?
<b>Open</b> the door,	will (won't) can (could)	you?
<b>Don't do</b> that again,	will	you?
<b>Let's</b> go for a walk,	shall	we?
<b>Let</b> him buy it,	will (won't)	you?
She <b>has</b> your book,	hasn't	she?
She <b>had an operation</b> yesterday,	didn't	she?
We <b>have to</b> work harder,	don't	we?
It <b>may</b> rain,	mightn't	it?
We <b>needn't</b> come,	need	we?
She <b>needs to</b> be there,	doesn't	she?
<b>Nothing</b> happened,	did	it?
<b>Something</b> happened,	didn't	it?
<b>Everything</b> has been arranged,	hasn't	it?
<b>Little</b> has been done,	has	it?
<b>A lot</b> has been done,	hasn't	it?
<b>Everybody (somebody, someone, everyone)</b> is sleeping,	aren't	they?
<b>No one</b> seems to care about the environment,	do	they?

1. Alan Turing described the principle of the modern computer in his 1936 paper "On Computable Numbers", \_\_\_\_\_ ?
2. Programming languages provide various ways of specifying programs for computers to run, \_\_\_\_\_ ?
3. The data may later be sent directly to computer-controlled typesetters, \_\_\_\_\_ ?
4. The constantly improving graphics and sound capabilities of PCs have made them popular tools for artists and musicians, \_\_\_\_\_ ?
5. Click OK to confirm that you want to delete a file, \_\_\_\_\_ ?
6. Someone has added comments to the document, \_\_\_\_\_ ?

7. Hackers may be motivated by a multitude of reasons, such as profit, protest, challenge, enjoyment, \_\_\_\_\_?

8. I have to redo the calculations because of new measurements, \_\_\_\_\_?

9. To use the service, you need to install a new application, \_\_\_\_\_?

10. It's a very useful program. You will be using it to record the sentences, \_\_\_\_\_?

11. Please make three copies of each page, \_\_\_\_\_?

12. Nobody explained the situation to the manager, \_\_\_\_\_?

**12. Study the table. Put indirect questions to the sentences.**

**Indirect questions**

Главное предложение		Придаточное предложение				
		союз	Подлежащее	Сказуемое	Дополнение	Обстоятельство
<i>I</i>	<b>asked</b> <b>wanted to know</b> <b>was interested to know</b>	<i>if</i> <i>(whether)</i>	<i>he</i>	<i>had installed</i>	<i>the latest version of Windows</i>	<i>on his computer.</i>
<i>He</i>	<b>wonders</b> <b>would like to know</b> <b>would be interested to hear</b>	<i>when</i>	<i>the meeting</i>	<i>is to take place.</i>		
<i>Do you</i> <i>Can you</i> <i>Could you</i> <i>Would you</i> <i>Have you any</i>	<b>know</b> <b>tell me</b> <b>tell me</b> <b>mind telling me</b> <b>idea</b>	<i>how long</i>	<i>the installation of our new equipment</i>	<i>will take.</i>		

1. The great advance in computing power came with the advent of the integrated circuit.

---

2. Errors in computer programs are called "bugs".

---

3. Supercomputers attain high speeds through the use of several advanced engineering techniques.

---

4. The mouse was first conceived of by Doug Engelbar in the early 1960's.

---

5. Governments use supercomputers for weather research, interpreting satellite data, weapons development.

---

6. Herman Hollerith developed the first keypunch devices in the 1930s.

---

**13. Put questions of different types to the following sentences.**

- 1). Speech processors allow a computer to simulate talking and singing.
- 2). The settings on this account do not allow you to add comments.
- 3). Alan Shugart invented the floppy disk and the Winchester hard disk for PCs.
- 4). In education, PCs have given teachers new ways to individualize the educational process.
- 5). We'll use smart word processors, database management programs, spreadsheets that will learn our working styles and adapt to us.
- 6). Computer engineers solve theoretical problems, develop programs and computer equipment.
- 7). There are a lot of software companies that specialize in writing software that makes computers hacker-proof.
- 8). Nearly two-thirds of American high-school students believe that the Internet or computer related professions are the most promising careers for them.
- 9). All this technology is changing the way we work and is offering many alternative ways of working.
- 10). One of the earliest known calculating devices was the abacus used in Egypt in 500 BC.

**14. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. They operate telephone **switching systems**, coordinate satellite launches. \_\_\_\_\_
2. They control the equipment in television and radio **broadcasts**. \_\_\_\_\_
3. Painting and drawing programs enable artists to create realistic images and **animated displays**. \_\_\_\_\_
4. Computer-assisted instruction uses computerized lessons that range from simple **drills** \_\_\_\_\_ to complex interactive **tutorials**. \_\_\_\_\_
5. **Educational aids** are available to PC users either on compact or digital video discs or through the Internet. \_\_\_\_\_

- a) упражнения
- b) трансляции, передачи
- c) учебные пособия
- d) коммутационные системы
- e) динамическое изображение, "мультипликация"
- f) обучающая программа (учебный курс)

**15. Look at the title and say what information the text gives. Read the text attentively for the details. Make sure you read the following words correctly:**

processor, *n* ['prəusesə]  
satellite, *n* ['sæt(ə)laɪt]  
coordinate, *v* [kəu'ɔ:dɪneɪt]  
robot, *n* ['rəʊbɒt]

control, *n, v* [kən'trəʊl]  
compact, *adj, v* [ˌkəm'pækt]  
model, *n, v* ['mɒd(ə)l]  
manipulate, *v* [mə'nɪpjəleɪt]



robotics, *n* [rəu'bɒtɪks]

chemist, *n* ['kɛmɪst]

### Computer Applications

Modern computers have a myriad of applications in fields ranging from the arts to the sciences and from personal finance to enhanced communications.

Computers make all modern communications possible. They operate telephone switching systems, coordinate satellite launches, and control the equipment in television and radio broadcasts. Local area networks link the computers in separate departments of businesses or universities, and the Internet links computers all over the world. Journalists and writers use word processors to write articles and books, which they then submit electronically to publishers.

Scientists and researchers use computers to collect, store, manipulate, and analyze data. Running simulations is one of the most important applications. Data representing a real-life system is entered into the computer, and the computer manipulates the data in order to show how the natural system is likely to behave under a variety of conditions. In this way scientists can test new theories and designs. Computer-aided design (CAD) programs enable engineers and architects to design three-dimensional models on a computer screen. Chemists use computer simulations to design and test molecular models of a new medicine. Some simulation programs generate models of weather conditions to help meteorologists make predictions. Flight simulators are training tools for pilots.

In factories, computer-assisted manufacturing (CAM) programs help people plan complex production schedules, keep track of inventories and accounts, run automated *assembly lines*<sup>1</sup>, and control robots. Dedicated computers are used in many products ranging from calculators to airplanes.

Government agencies are the largest users of mainframes and supercomputers. Computers are essential for compiling *census*<sup>2</sup> data, handling *tax*<sup>3</sup> records, maintaining criminal records, weapons development, and *cryptography*<sup>4</sup>.

Computers have proved to be valuable in education. Computer-assisted instruction (CAI) uses computerized lessons that range from simple drills and practice sessions to complex interactive tutorials. Educational aids, such as encyclopedias and other reference works, are available to PC users—either on compact or digital video discs or through the Internet.

Video games are one of the most popular PC applications. The constantly improving graphics and sound capabilities of PCs have made them popular tools for artists and musicians. Painting and drawing programs enable artists to create realistic images and animated displays. "*Morphing*"<sup>5</sup> programs allow photographers and filmmakers to transform photographic images into any size and shape. Musicians can use computers to create multiple-voice compositions and to play back music with hundreds of variations, to simulate talking and singing.

### NOTES

1. *assembly line* – сборочный конвейер

2. *census* – перепись населения; сбор сведений

3. *tax* – налог

4. *cryptography* – криптография (технология обеспечения секретности важной информации и ее защиты при передаче по каналам связи или хранении)

5. *morphing* – трансформация; морфинг (преобразование одного изображения в другое с помощью геометрических операций и цветовой интерполяции)

**16. Give English equivalents for the following Russian words and word combinations.**

Варьироваться от ... до, вносить в компьютер, при определённых условиях, на экране компьютера, вести учёт, доступен пользователям в интернете, воспроизводить музыку.

**17. Express your agreement or disagreement with the following statements.**

- 1). Modern computers are used only in business.
- 2). Modern communications are possible due to computer technologies.
- 3). LANs link computers all over the world.
- 4). The most popular program with writers and journalists is a word processor.
- 5). Engineers use CAD programs to test molecular models of a new medicine.
- 6). Some flight simulation programs help meteorologists make weather predictions.

**18. Complete the following sentences according to the text.**

- 1). Computers operate ... .
- 2). Local area networks link ... .
- 3). Chemists use computer simulations ... .
- 4). Computers have proved to be ... in education.
- 5). ... are available on compact or digital video discs.
- 6). Musicians can use computers ... .

**19. Ask your groupmates and let them answer:**

- 1) what they know about simulations;
- 2) to explain the difference between CAD and CAM;
- 3) to give examples of computer-assisted instruction;
- 4) if they have ever used morphing programs;
- 5) how often they use a word processor and what for.

**20. Speak about the use of computers in**

- a) communication;
- b) science and research;
- c) industry;
- e) government;
- f) education;
- g) arts and entertainment.

**21. Do you agree or disagree with the following statement? With the help of technology, students nowadays can learn more information and learn it more quickly. Use specific reasons and examples to support your answer. Express sensible ideas in a**

**logical manner and attempt to write 120-150 words for the topic.**

**The box below can help you write a short essay.**

How to write a simple essay	
Introduction	<i>I completely agree that ... In this essay I will set out my reasons. Some people believe that ... However, I would like to argue that ...</i>
Organising your points	<i>In the first place, ... / Firstly, ... Secondly, ... Next, ... Thirdly, ... Finally, ...</i>
Conclusion	<i>To conclude, ... In conclusion, ...</i>

## Unit 4

**Grammar: to have in Present, Past and Future Simple**

**Oral Topic: Types of Computers**

### Lexical and Grammar Exercises

#### 1. Learn the active vocabulary.

**1). analog/analogue** ['ænələʒ] - *аналоговый, моделирующий*

Analog and digital signals are used to transmit information. Analog computers translate data from constantly changing physical conditions into corresponding mechanical or electrical quantities. An automobile speedometer is a mechanical analog computer. Electronic analog computers in chemical plants monitor temperatures.

**2). to combine** [kəm'baɪn] - *объединять, сочетать*

Hybrid computers combine elements of analog and digital computers. American engineer Marcian E. Hoff combined the basic elements of a computer on one tiny silicon chip. All-in-one computers combine the monitor and system unit into a single device.

*Syn. to join, to unite, to merge*

**3). voltage** ['vɒltɪdʒ] - *электрическое напряжение*

A computer can recognize high voltage or low voltage. When voltage is applied, the gas releases ultraviolet light that causes pixels on the screen to glow and form an image. A microchip translates the undulating voltages into a series of numbers.

**4). corresponding** [ˌkɒrɪ'spɒndɪŋ] - *надлежащий, соответственный, соответствующий*

Electronic analog computers send corresponding voltages to various control devices. Every character you type on a keyboard is converted into a corresponding byte, a series of on/off electrical states the computer can process. The concept was a pointing device, something a computer user could move by hand, causing a corresponding movement on the screen.

**5). to measure** ['meɪzə] - *измерять, мерить; отмерять, отсчитывать*

Anything in the universe can be measured in analog or digital terms. We measure frequencies in hertz. Light can be a wave and it can be a particle; it just depends how you measure it.

**6). rotation** [rə'teɪʃ(ə)n] – *вращение*

An automobile speedometer measures the rotations per minute of the drive shaft (карданный вал). Typical hard disks have a rotation speed from 4,500 to 10,000 rpm.

**7). rate** [reɪt] – *темп, скорость, частота*

It provides different data rates. Serial ports (последовательные порты) usually connect devices that do not require fast data transmission rates.

**8). to monitor** ['mɒnɪtə] - *отслеживать, контролировать*

Electronic analog computers in chemical plants monitor temperatures, pressures, and flow rates. Police officers have been closely monitoring the organisation's activities.

*Syn. to observe, to supervise*

**9). pressure** ['preʃə] - *давление; сжатие*

Sensors in the walls, in your bed, or in your cereal will be able to monitor your blood pressure. When buttons are in analog mode, they register both how long a button is pressed and the amount of pressure put on them.

**10). to adjust** [ə'dʒʌst] – *регулировать, настраивать, подгонять*

Control devices adjust the chemical processing conditions to their proper levels. These controls adjust the brightness, contrast, positioning, and height and width of images.

*Syn. to fit, to adapt, to arrange*

**11). to navigate** ['nævɪgeɪt] - *передвигаться, двигаться*

Virtual reality programs create a world through which one can navigate as “realistically” as in the real world. The first explorers navigated by the stars.

**12). vehicle** ['vɪəkl ], ['vi:ɪkl] - *транспортное средство*

Analog computers are still common for flight control systems in aviation and space vehicles. Road vehicles include cars, buses, and trucks.

**13). switch** [swɪtʃ] - *выключатель, переключатель*

Every operation computers perform is based on one key operation: determining whether certain electronic switches are open or closed.

**14). gate** [geɪt] - *логический вентиль, затвор*

A gate is a microcircuit in which transistors are arranged so the value of a bit of data can be changed. Combinations of transistors in various configurations are called logic gates.

**15). state** [steɪt] - *состояние, положение, режим*

A computer can recognize only two states in each of its millions of circuit switches—on or off. Toggle keys (клавиши-переключатели) can be switched between two different states.

*Syn. mode*

**16). to assign** [ə'saɪn] - *назначать, определять, устанавливать*

The USB host controller (хост-контроллер) assigns the device an identification number. To assign the value 3 to a variable X, BASIC uses the command X=3. Every pixel in a bitmap (побитовое отображение) is assigned a specific color and position.

*Syn. to appoint*

## 2. Give English equivalents for the words in brackets.

- 1). ICTs (Information and Communication Technologies) describe all media and tools involved in the dynamic transfer and storage of (аналоговый) \_\_\_\_\_ and (цифровой) \_\_\_\_\_ data.
- 2). The operations of computer hardware are based on the 'on' and 'off' (состояния) \_\_\_\_\_ of transistors.
- 3). The transformer weakens the (напряжение) \_\_\_\_\_ to suit the requirement.
- 4). A microprocessor has many electronic (переключатели) \_\_\_\_\_ inside it.
- 5). Although we do not have a unit that (измерять) \_\_\_\_\_ the memory of our brain, we do have a unit for the memory of a computer. It is known as a byte.
- 6). Computers can (объединять) \_\_\_\_\_ simulations with the reality of actual events.
- 7). The software was installed to (контролировать) \_\_\_\_\_ my Internet activity.

## 3. Replace the following by one word.

- 1). A computer that processes information in digital form. \_\_\_\_\_
- 2). A computer that represents data by measurable quantities, as voltages or, formerly, the rotation of gears (зубчатое колесо), in order to solve a problem, rather than by expressing the data as numbers. \_\_\_\_\_
- 3). A device for turning on or off or directing an electric current or for making or breaking a circuit. \_\_\_\_\_
- 4). Electrical force measured in volts. \_\_\_\_\_
- 5). The force or weight with which something presses against something else. \_\_\_\_\_
- 6). A thing that is used for transporting people or goods from one place to another, such as a car or lorry/truck. \_\_\_\_\_
- 7). To find the size, quantity, etc. of something in standard units. \_\_\_\_\_

## 4. Fill in the blanks with the words from the active vocabulary.

- 1). The digital system is less sensitive to errors than the \_\_\_\_\_ system.
- 2). A \_\_\_\_\_ is a piece of a physical circuitry component that governs the signal flow.
- 3). What are two possible \_\_\_\_\_ of switches?
- 4). Here are a few ways to make it easy for visitors to \_\_\_\_\_ your website.
- 5). The administrator can \_\_\_\_\_ users varying levels of access to programs and files.
- 6). These systems can \_\_\_\_\_ the driver's condition or behavior.
- 7). Aircraft, ships, and land \_\_\_\_\_ used by the military have been fitted with a variety of computerized systems.
- 8). The size of tiny transistors is \_\_\_\_\_ in atoms.

## 5. Match the words with similar meaning.

1. to combine	a) essential
2. to adjust	b) mode
3. to monitor	c) efficient

4. rate	d) speed
5. to navigate	e) to guide along route
6. state	f) vulnerable
7. key	g) to join
8. effective	h) to observe
9. susceptible	i) to adapt

**6. Match the words with opposite meaning.**

1. combine	a) simplicity
2. complexity	b) inefficient
3. common	c) inaccuracy
4. effective	d) separate
5. precision	e) rare

**7. Study the following table. Formulate the rule.**

Simple							
Present		Affirmative		Negative		Question form	
	I	have	have got	don't have	haven't got	Do ... have...?	Have ... got ...?
	he she it	has	has got	doesn't have	hasn't got	Does ... have...?	Has ... got ...?
	we you they	have	have got	don't have	haven't got	Do ... have ...?	Have ... got ...?
Past	had / had got		didn't have / hadn't got		Did ... have...? / Had ... got...?		
Future	will have		will not (won't) have / won't have got		Will ... have...? / Will ... have got...?		
	Past Participle		had				
	Present perfect		has / have had				
	Past perfect		had had				

**8. Complete the sentences with the correct form of the verb "to have":**

- 1). Servers ... greater data-processing capabilities.
- 2). A modern computer ... a myriad of applications.
- 3). The Apple Computer company's Macintosh computer ... the first commercially successful software.
- 4). A computer virus ... two parts, an infector and a detonator. They ... two different jobs.
- 5). In 1977 the Apple II computer ... a floppy-disk drive.

- 6). Linux ... its roots in a student project.
- 7). Many people say we ... never ... an intelligent computer.
- 8). Neither of them ... experience in Java Script.
- 9). They ... an English class tomorrow.
- 10). ... you ... any problems last year? - Not so many.
- 11). Computer chess players ... no concept of strategy.
- 12). We ... (not) any lectures on Saturday.
- 13). I think we should buy a new monitor. We ... this one for ages.
- 14). ... you ever ... a problem with a virus?
- 15). I ... three computers by the time I was 20.

### **9. Complete the sentences with the correct form of the verbs “to be” or “to have”:**

1. The most common input device ... a keyboard.
2. Analog computers ... a disadvantage relative to digital computers: to solve new problems they had to be broken down and reconfigured.
3. The more desk surface you ... in front of you, the more you can place on it.
4. A workstation ... like a personal computer, but it ... a more powerful microprocessor.
5. The more main memory you ... in your computer, the more you can accomplish.
6. IBM believes computers ... all five human senses, and will communicate with us in radically different ways.
7. Digital computers replaced general purpose analog computers by the early 1970s because analog computers ... limited precision.
8. The personal computer (PC) ... a computer designed for general use by a single person.
9. The earliest electronic digital computers ... no operating systems.
10. The entrepreneur and futurologist has predicted that in 15 years' time computers ... more intelligent than we are.
11. Servers usually ... powerful processors, lots of memory and large hard drives.
12. PCs were first known as microcomputers because they ... complete computers but built on a smaller scale than the huge systems in use by most businesses.
13. Laptops ... portable computers.
14. In the early days of computing, mainframes ... huge computers that could fill an entire room or even a whole floor!
15. Some supercomputers ... single computer systems.
16. The latest trend in computing ... wearable computers.
17. Some day, digital computers ... almost certainly ... intelligent.
18. Personal Digital Assistants (PDAs) ... not keyboards.

### **10. Translate from Russian into English**

#### **a) using the correct form of the verb “to have”:**

- 1). У него все еще нет компьютера.
- 2). Этот код не содержит логических ошибок.
- 3). У каждого, кто использует компьютер сегодня, есть текстовый редактор.
- 4). Будет ли у новых компьютеров более мощный процессор?

- 5). ABC обладал памятью на 50 слов длиной 50 бит.
- 6). В универсальном аналоговом компьютере имеются резисторы, конденсаторы и катушки индуктивности (inductor).
- 7). Стационарные компьютеры обладали более мощным аппаратным обеспечением.
- 8). Были ли у компьютеров в то время собственные операционные системы?
- 9). Вскоре микропроцессоры будут содержать 50 и даже 100 миллионов элементов.
- 10). Компьютеры пятого поколения будут обладать возможностью общаться с человеком на его естественном языке.

**b) using the correct form of the verbs "to be" or "to have":**

- 1). Основным элементом механических устройств было зубчатое колесо (gear wheel).
- 2). В 1941 году Цузе (Zuse) создал Z3, которой содержал 2600 электромеханических реле.
- 3). Компьютер – это программируемое электронное устройство, которое производит обработку данных и вычисления.
- 4). Есть два принципиально разных типа компьютеров: аналоговые и цифровые.
- 5). Являются ли почти все цифровые компьютеры электронными?
- 6). Цифровые компьютеры имеют относительно небольшое число базовых функций для выполнения своих задач.
- 7). У электронных компонентов было одно преимущество: их переключатели могли работать примерно в 1000 раз быстрее, чем их электромеханические аналоги.
- 8). У аналоговых вычислительных машин есть одно преимущество: это их высокое быстродействие (performance).
- 9). Существует несколько причин, почему жесткие диски работают намного лучше, чем дискеты.
- 10). В будущем компьютеры проникнут во все сферы нашей жизни, однако, большинство их "способностей" станут незаметными, "невидимыми" для людей.
- 11). Скоро у персональных компьютеров не будет процессора, а все вычисления будут производиться на удаленном сервере.

**11. Read the text.**

**Types of Computers**

There are two fundamentally different types of computers—*analog* and *digital*. (Hybrid computers combine elements of both types.)

Analog computers work by translating data from constantly changing physical conditions (such as temperature, pressure, or voltage) into corresponding mechanical or electrical quantities. They offer continuous solutions to the problems on which they are operating. For example, an automobile speedometer is a mechanical analog computer that measures the rotations per minute of the drive shaft and translates that measurement into a display of miles or kilometers per hour. Electronic analog computers in chemical plants monitor temperatures, pressures, and flow rates. They send corresponding voltages to various control devices, which, in turn, adjust the chemical processing conditions to their proper levels. Analog computers are still common for flight control systems in aviation and space vehicles.

For all their apparent complexity, digital computers are basically simple machines. Every operation they perform, from navigating a spacecraft to playing a game of chess, is based on



one key operation: determining whether certain electronic switches, called gates, are open or closed. The real power of a computer lies in the speed with which it checks these switches.

A computer can recognize only two states in each of its millions of circuit switches—on or off, or high voltage or low voltage. By assigning binary numbers to these states—1 for on and 0 for off, for example—and linking many switches together, a computer can represent any type of data, from numbers and letters to musical notes. This process is called digitization.

Digital computers are generally more effective than analog computers for three principal reasons: they are not as susceptible to signal interference; they can convey data with more precision; and their coded binary data are easier to store and transfer than are analog signals.

**12. Express your agreement or disagreement with the following statements.**

1. There are three fundamentally different types of computers—analogue, digital and hybrid.
2. Analogue computers work by translating data from physical conditions into corresponding mechanical or electrical quantities.
3. An automobile speedometer is an example of a mechanical analogue computer.
4. Electronic analogue computers in chemical plants monitor temperatures, pressures, and flow rates.
5. Analogue computers are still common in automobile industry.
6. Every operation, digital computers perform, is based on one key operation: determining the temperature of electronic switches.
7. A computer can recognize only two states in each switch—on or off.
8. A digital computer can represent any type of data by assigning binary numbers to the states, it can recognize, and linking many switches together.
9. Digital computers are generally more effective than analogue computers.

**13. Complete the following sentences according to the text.**

1. An analogue computer is ... .
2. Analogue computers can ....
3. Analogue computers are still commonly used in ....
4. The term “digital computer” refers to ... .
5. A key operation of a digital computer is ....
6. A digital computer can represent any data by .... .
7. There are three principal reasons why digital computers are more efficient than analogue ones. They are ... .

**14. Ask your groupmates and let them answer:**

1. what fundamentally different types of computers they know;
2. what differences there are between digital and analogue computers;
3. what application areas of digital/analogue computers they can name;
4. whether they know what the term “digitization” refers to;
5. whether digital computers are more effective than analogue;
6. what advantages of digital computers, mentioned in the text, they can name.

**15. Discuss in pairs and speak on the differences between analogue and digital signals.**

## Unit 5

**Grammar:** Some, Any, No and Their Compounds

**Oral Topic:** Parts of a Digital Computer System

### Lexical and Grammar Exercises

**1. Read the following words. Translate the sentences into Russian. Learn the words by heart.**

**1) hardware** ['hɑ:dweɪ] - *аппаратное обеспечение, аппаратура, оборудование*

A list of required hardware is available here. When using computer hardware, an upgrade means adding new hardware to a computer that improves its performance, adds capacity or new features. There are many different kinds of hardware that can be installed inside, and connected to the outside of a computer.

**2) software** ['sɔftweɪ] - *программное обеспечение*

He has a lot of pirated software on his computer. What's your favourite free software application? Update any software packages to the latest version.

**3) input** ['ɪnput] - *вводить (в компьютер); входной*

Before making a decision we need your input data. The keyboard is my computer's main input device. Please input your PIN number. You simply input the customer's name and address here.

*Ant. output*

**4) output** ['aʊtput] - *вывод [данных]; результаты, выходные данные*

An output device is any peripheral that receives data from a computer, usually for display, projection, or physical reproduction. What do you know about such output devices as monitors? The distinction between output devices and input devices becomes even more blurred in the real world. Computers output data very quickly.

*Ant. input*

**5) memory** ['mem(ə)rɪ] - *память, запоминающее устройство*

How much memory does your computer have? Computer memory may be divided into internal memory and external memory. The memory capacity is the maximum or minimum amount of memory a computer or hardware device is capable of having or the required amount of memory required for a program to run.

**6) storage** ['stɔ:ɪdʒ] - *хранение (информации); внешнее устройство для хранения данных*

To free up storage, you can delete files or individual versions of a file by moving them to the Trash. The CD has a storage capacity of 800 megabytes.

**7) bus** [bʌs] - *шина*

A bus is a set of conductors carrying data and control signals within a computer system. USB interfaces, named for the Universal Serial Bus, can run at fast speeds.

**8) motherboard** ['mʌðəbɔ:d] - *системная плата, материнская плата*

The motherboard is also known as mainboard, mobo, MB, system board, logic board, a main circuit board. The motherboard serves to connect all of the parts of a computer together.

**9) to plug into** [plʌg] - *подключать, вставлять в разъем*

Plug the computer into that outlet over there. It plugs into any electric socket. Your phone can be plugged into the cigarette lighter socket in your car.

**10) to time** [taɪm] - *регулировать, рассчитывать (по времени), синхронизировать, согласовывать во времени*

The clockwork apparatus is timed to run for forty-eight hours. The central processing unit times and controls the rest of the system.

*Syn. to synchronize*

**11) arithmetic logic unit (ALU)** - *арифметико-логическое устройство*

The ALU is a fundamental building block of the central processing unit of a computer, and even the simplest microprocessors contain one for purposes such as maintaining timers. In some computer processors, the ALU is divided into an AU and LU. After the information has been processed by the ALU, it is sent to the computer's memory.

**12) addition** [ə'dɪʃ(ə)n] - *сложение, суммирование, прибавление*

Addition is the mathematical operation of combining or adding two numbers to obtain a total amount. Addition (often signified by the plus symbol "+") is one of the four basic operations of arithmetic, with the others being subtraction, multiplication and division.

*Ant. subtraction*

**13) subtraction** [səb'trækʃ(ə)n] - *вычитание*

The addition is correct, but there is an error in your subtraction. Subtraction is denoted by a minus sign in infix notation, in contrast to the use of the plus sign for addition.

**14) temporary** ['temp(ə)r(ə)rɪ] – *временный*

It's a temporary condition. Select temporary Internet files and cookies, then click 'delete'. Many of those changes could just be a temporary fix.

*Ant. permanent*

**15) intermediate** [ˌɪntə'mi:diət] – *промежуточный, переходный, средний*

I'm taking intermediate French this year. Your responsibility will be to evaluate intermediate and final results. This programme should be phased, with intermediate objectives being more clearly stated. My English is at intermediate level.

**16) pattern** ['pæt(ə)n] – *образец, модель, шаблон, структура, тенденция, схема, комбинация*

This pattern had remained stable during the previous 10 years. That seems to have become a pattern. It's the same pattern at many different scales. The idea was to use a computer to learn these patterns, and so we gave the computer the existing texts.

*Syn. template, model*

**17) to hold** [həʊld] – *содержать в себе, вмещать; сохранять, удерживать*

This room holds a hundred people. Registers hold data, instructions, or the intermediate results of calculations. In computer science, a buffer is a region of a physical memory storage used to temporarily hold data while it is being moved from one place to another. We take reasonable steps to protect all personal information we hold from misuse, interference.

**18) value** ['vælju:] – *ценность, важность; числовое значение, величина*

Find the value of x in the equation  $x + 2 = 6$ . The request that's sent includes a number of parameters or values.

## **2. Give English equivalents for the words in brackets.**

1. A computer system isn't complete unless there's also (программное обеспечение)

\_\_\_\_\_, which is different than (аппаратное обеспечение).

2. The (системная плата) \_\_\_\_\_ manufacturer should provide clear guidance on component compatibilities.

3. "How much more" means that it would be a (вычитание) \_\_\_\_\_ .

4. The plan contains long term goals, (промежуточные) \_\_\_\_\_ results, definite actions and dates.

5. She was employed on a (временный) \_\_\_\_\_ basis.

6. A basic (арифметико-логическое устройство) \_\_\_\_\_ has three parallel data buses consisting of two input operands (A and B) and a result output (Y).

7. Bloggers follow the same (образец) \_\_\_\_\_ , no matter what they write about.

8. A gigabyte can (вместить) \_\_\_\_\_ the information equivalent of about 1,000 thick books.

### **3. Replace the following by one word.**

1. The machines, wiring, and other physical components of a computer or other electronic system. \_\_\_\_\_

2. To arrange the interval between two events in such a certain sequence. \_\_\_\_\_

3. A unit in a computer that carries out arithmetic and logical operations. \_\_\_\_\_

4. The information fed into a computer or computer program. \_\_\_\_\_

5. The programs and other operating information used by a computer. \_\_\_\_\_

6. The process of uniting two or more numbers into one sum, represented by the symbol +.

7. Any information made available by computer, as on a printout, display screen, or disk.

8. The numerical amount denoted by an algebraic term. \_\_\_\_\_

### **4. Fill in the blanks with the words from the active vocabulary.**

1. Computer \_\_\_\_\_ may sometimes be seen abbreviated as computer hw.

2. The I/O \_\_\_\_\_ from the CPU to the peripherals is a parallel \_\_\_\_\_ .

3. In laptops and tablets, and even in desktops, the \_\_\_\_\_ often incorporates the functions of the video card and sound card. This helps keep these types of computers small in size.

4. What is the most efficient way to temporarily \_\_\_\_\_ information?

5. The data is ready for \_\_\_\_\_ into a computer.

6. Games consoles \_\_\_\_\_ the back of the TV.

7. Since most information from a computer is \_\_\_\_\_ in either a visual or auditory format, the most common \_\_\_\_\_ devices are the monitor and speakers.

### **5. Match the words with similar meaning.**

1. to require

2. to input

3. to hold

a) to enter

b) part

c) to need

4. section
5. cycle
6. element

- d) to contain
- e) component
- f) period

**6. Match the words with opposite meaning.**

1. temporary
2. complex
3. fast
4. input
5. to add
6. next
7. to divide

- a) to subtract
- b) output
- c) slow
- d) simple
- e) permanent
- f) to multiply
- g) previous

**7. Study the following table and choose the right word from the brackets.**

	Some	Any	No
Утвердительное предложение	+ <i>Some people are workaholics.</i>	+ <i>Choose any scarf you like.</i>	-
Вопросительное предложение	+ просьба: <i>May I have some (немного) time to think?</i>  предложение: <i>Would you like something else (ещё что-нибудь) to drink?</i>	+ <i>Is there anybody here?</i>	-
Отрицательное предложение	-	+ <i>There isn't any money left.</i>	+ <i>I have no wish for conversation. Nobody knew about the meeting.</i>
	somebody someone something somewhere	anybody anyone anything anywhere	nobody no one none of nothing nowhere

1. We still have (any/some) time. 2. The article wasn't printed (nowhere/anywhere). 3. (some/any) student can be present at the conference. 4. There was (anything/nothing) interesting in his report on the project. 5. (Any/some) section of the processor is important. 6. Is there (some/any) printer in the computer room? 7. I have this book (somewhere/nowhere) at home. 8. I can't consult just (some/any) person, I need (no one/someone) who is an expert on the problem and who has enough experience. 9. (No/any) moving object will continue to move unless it is stopped by (no/some) other force. 10. (None/nobody) of the young men seemed to enjoy the work. 11. (No one/ anyone) was absent from the lecture. 12. Have you

(something/anything) to ask? 13. (Some/any) terminal has its own processor.

### **8. Give English equivalents for the words in brackets.**

1. (Кто-то) \_\_\_\_\_ knows this problem very well. 2. Have you got (что-нибудь) \_\_\_\_\_ important to say? 3. This computer has (несколько) \_\_\_\_\_ disk drives. 4. Was there (какая-нибудь) \_\_\_\_\_ article about the central processor? 5. There was (никого) \_\_\_\_\_ in the English study. 6. Is (кто-нибудь) \_\_\_\_\_ ready to answer? 7. There was (что-то) \_\_\_\_\_ on the screen. 8. Will you purchase products if there are (нет) \_\_\_\_\_ testers or samples available? 9. (Никто) \_\_\_\_\_ could detect the problem with the motherboard.

### **9. Fill in the gaps with some, any, no and their derivatives.**

1. Although a computer doesn't need \_\_\_\_\_ input or output, it would be useless without them.
2. But when I run the setup, I get this error message " \_\_\_\_\_ hardware device found".
3. I've had \_\_\_\_\_ important phone-calls this morning.
4. The file is empty. There is \_\_\_\_\_ information in the file.
5. I want to go \_\_\_\_\_ this evening.
6. Do you have \_\_\_\_\_ else to ask me while I'm here?
7. A USB cable will plug into \_\_\_\_\_ USB port on your computer.
8. I have \_\_\_\_\_ time to chitchat with you, I have to test my PC for failing hardware.
9. Do you have a plan how to get there without \_\_\_\_\_ trouble?
10. There is \_\_\_\_\_ wrong with the computer, we should call \_\_\_\_\_ .
11. \_\_\_\_\_ has ever had any trouble with this equipment.
12. Where can I find a good job with plenty of money and no work? — \_\_\_\_\_ .
13. I am enclosing \_\_\_\_\_ information about new products available.
14. I think there is \_\_\_\_\_ point in wasting \_\_\_\_\_ more time on this issue.
15. \_\_\_\_\_ has \_\_\_\_\_ against your suggestion.
16. You can put this device \_\_\_\_\_ in the study.
17. There is \_\_\_\_\_ in the street. It is too late.
18. I don't know \_\_\_\_\_ of them.

### **10. Translate from Russian into English.**

1. Он даже не пытался ничего сделать.
2. Мы внесли несколько изменений в рабочий план на основе полученных промежуточных вычислений.
3. Кто-нибудь знаком с этой системой?
4. Это временные трудности. Никому ничего не рассказывай о них.
5. Старший разработчик ПО принял какое-нибудь решение?
6. Сегодня некоторые устройства хранения информации используются редко.
7. Что-то не так. Кто-то внес неправильную информацию.

**11. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. The arithmetic-logic unit performs arithmetic and logic operations such as testing a value to see if it is true or false. \_\_\_\_\_

2. Registers hold data, instructions, or the intermediate results of calculations. \_\_\_\_\_

3. Every tick, or cycle, of the clock causes each part of the CPU to begin its next operation and to stay synchronized with the other parts. \_\_\_\_\_

4. A CPU can perform a very simple operation, such as copying a value from one register to another, in only one or two clock cycles.

a) цикл тактового сигнала

b) контроль значений величины

c) тактовый генератор

d) устройства сверхбыстродействующей памяти для временного хранения команд

**12. Look through the text and name the parts of a digital computer system. Read the text for the detailed information about four functionally different hardware elements.**

**Make sure you know the correct pronunciation of the following words:**

process, *n, v* ['prəuses]

record, *n* ['rekɔ:d]

component, *n* [kəm'pəunənt]

record, *v* [rɪ'kɔ:d]

control, *n, v* [kən'trəul]

gigahertz ['gɪgə- ] / ['gaɪgə- ] / ['dʒɪgə-] [hɜ:ts]

synchronize, *v* ['sɪŋkrənaɪz]

MHz ['megəhɜ:ts]

### **Parts of a Digital Computer System**

A working computer requires both hardware and software. Hardware is the computer's physical electronic and mechanical parts. Software consists of the programs that instruct the hardware to perform tasks.

#### **a) Hardware**

A digital computer's hardware is a complex system of four functionally different elements—a central processing unit, input devices, memory-storage devices, and output devices—linked by a communication network, or a bus. The bus is usually incorporated into the main circuit board, called the motherboard, which is plugged into all the other components.

#### **The central processing unit**

The heart of a computer is the central processing unit (CPU). In addition to performing arithmetic and logic operations on data, it times and controls the rest of the system. Mainframe and supercomputer CPUs sometimes consist of several linked microchips, called microprocessors, each of which performs a separate task, but most other computers require only a single microprocessor as a CPU.

Most CPUs have three functional sections:

(1) the arithmetic/logic unit (ALU), which performs arithmetic operations (as addition and subtraction) and logic operations (such as testing a value to see if it is true or false);

(2) temporary storage locations, called registers, which hold data, instructions, or the intermediate results of calculations; and

(3) the control section, which times and regulates all elements of the computer system and

also translates patterns in the registers into computer activities (such as instructions to add, move, or compare data).

A very fast clock times and regulates a CPU. Every tick, or cycle, of the clock causes each part of the CPU to begin its next operation and to stay synchronized with the other parts. The faster the CPU's clock, the faster the computer can perform its tasks. The clock speed is measured in cycles per second, or hertz (Hz). Today's desktop computers have CPUs with 1 to 4 GHz (gigahertz) clocks. The fastest desktop computers therefore have CPU clocks that tick 4 billion times per second. The early PCs had CPU clocks that operated at less than 5 MHz. A CPU can perform a very simple operation, such as copying a value from one register to another, in only one or two clock cycles. The most complicated operations, such as dividing one value by another, can require dozens of clock cycles.

**13. Find in the text English equivalents for the following Russian words and word combinations.**

Состоять из нескольких соединенных микросхем, измеряться в герцах, синхронизироваться с другими частями, 4 млрд раз в секунду, за два цикла, разделить одно значение на другое, в добавок к чему-то.

**14. Express your agreement or disagreement with the following statements. Give your grounds.**

1. A working computer requires only hardware.
2. Software consists of instructions that tell the hardware what tasks to perform.
3. A digital computer's hardware is a system of 3 different devices.
4. The motherboard is usually incorporated into the bus.
5. The CPU consists of microchips.
6. The ALU performs arithmetic and logic operations.
7. Registers time and regulate all elements of the computer system.
8. The clock speed is measured in kilometres per hour.
9. The early PCs had CPU clocks that operated at 5 GHz.

**15. Complete the sentences according to the text.**

1. Hardware is the computer's ....
2. A digital computer's hardware consists of the following elements: ....
3. The main functional sections of most CPUs are ....
4. Arithmetic operations the ALU performs include ..., and logic operations mean ....
5. Registers are ....
6. The control section translates ....
7. Every cycle of the clock ....
8. Today the fastest computers have CPU clocks that tick ....

**16. Ask your groupmates and let them answer:**

- a) about the function of the motherboard;
- b) why hardware is a complex system;



- c) what types of computers have several microchips;
- d) how the clock speed influences the computer operation;
- e) how many clock cycles complicated operations require.

**17. Discuss in pairs and speak on**

- a) the difference between hardware and software;
- b) the clock speed of the early computers and modern ones;
- c) the speed required to perform a simple operation and the most complicated ones;
- d) the three sections of the CPU and their functions.

**18. Advances are made almost every day in microprocessor chip technology. What are some of the most recent advances? In what computers are these chips being used? How might these advances affect the way we currently use microcomputers? Research the latest advances by reviewing the most current computer magazines and periodicals and write 120-150 words for the topic. (See Unit 3, ex. 21).**

## Unit 6

**Grammar: Numerals**  
**Oral Topic: Input devices**

### Lexical and Grammar Exercises

**1. Read the following words. Translate the sentences into Russian. Learn the words by heart.**

**1). input device** ['ɪnpʊt dɪ'vaɪs] - устройство ввода

An input device is a piece of computer equipment, which enables you to put information into a computer. To interact with your computer, you need input devices. A scanner is a common input device.

**2). button** ['bʌtn] - кнопка, клавиша

The mouse is a mechanical or optical device with buttons on the top. Positioning the cursor on to a particular icon and clicking the button on the mouse is a sufficient command to open the file. Tapping either of the buttons atop the mouse sends a signal to the PC.

*Syn. key*

**3). keyboard** ['ki:bɔ:d] - клавиатура

In 1977 Tandy Corporation added a keyboard and monitor to their computer. A keyboard contains keys for letters and numbers. Computer keyboards, which are much like typewriter keyboards, are the most common input devices.

**4). sensor** ['sen(t)sə] - датчик; чувствительный или воспринимающий элемент

A sensor is a device for measuring light, pressure, or temperature, and sending information back to a computer.

**5). to point** [pɔɪnt] - показывать, указывать

The hands of the clock pointed to a quarter past one. Light pens can be used to draw or to point to items or areas on the display screen. Touch-sensitive display screens allow users to point to items or areas on the screen.

**6). screen** [skri:n] - экран, изображение на экране

We have a face to express ourselves, a computer has a screen that acts like its face. The first computer cost \$397 without a keyboard or screen. Touchscreen technology allows users to interact physically with what is shown on the screen.

**7). cursor** ['kɜ:sə] - курсор, указатель

To move the cursor on the display screen, the user moves the mouse. On a computer screen, the cursor is a small shape that indicates where anything that is typed by the user will appear.

*Syn. pointer*

**8). to activate** ['æktɪveɪt] - активизировать; активировать, приводить в действие, включать

She activated the account (учетная запись). The alarm can be activated by a laser beam. You can activate the system by buttons or voice recognition.

**9). to create** [kri'eɪt] - порождать, производить; создавать, творить

How do I create a new file? The project will create more than 500 jobs. The software makes it easy to create colourful graphs.

*Syn. to make, to develop, to produce, to generate*

**10). to select** [sɪ'lekt] - выбирать; отбирать; отметить (о пункте)

The user selects operations, activates commands, or creates or changes images on the screen by pressing buttons on the mouse. Simon's been selected to go to the conference. We're going to select two students to represent the school.

*Syn. to choose, to pick*

**11). to transfer** [trænzfə:] - передавать, переносить, пересылать

I want you to transfer the files onto a disk. I'll transfer some money into my other account. The BIOS transfers control of the PC to the operating system on the hard disk.

*Syn: to move, to transmit*

**12). to convert (into)** ['kɒnvɜ:t] - преобразовывать, конвертировать, переводить

In the process, the light energy converts to heat energy. All homes had converted to digital TV by 2012, when the analogue signal was switched off. A bright light moves across the image, and the reflection is captured by a sensor, which converts the document to a digital image.

*Syn. to change, to transform*

**13). to edit** ['edit] - редактировать, готовить к печати

The program enables you to copy and edit files in the usual way. You can go and edit the pages by clicking on the 'edit' tab (вкладка) which will appear on the top of (almost) each page. All machine translations need to be edited by a human translator.

**14). to embed** [ɪm'bed] - внедрять; встраивать; вкладывать

Some spyware embeds itself in the Windows.

**15). value** ['vælju:] - величина, значение; стоимость, цена

Let *y* have the value 33. We now know the value of two out of the three variables (переменная (величина)), which means we know enough to solve our problem. The winner will receive a prize to the value of £ 10,000.

**16. to feed (fed, fed) [fi:d]** - *снабжать, подавать, поставлять (например, информацию); вставляя (что-л. куда-л.)*

They fed erroneous information to us. The information was fed into the data store. He took the compact disc from her, then fed it into the player.

**17. voice recognition [vɔɪs ,rekəg'nɪʃ(ə)n]**- *распознавание голоса или речи*

Voice recognition is the ability of a machine or program to identify words and phrases in spoken language. Voice-recognition circuitry digitizes spoken words and enters them into the computer.

## **2. Give English equivalents for the words in brackets.**

1. On most computers, a keyboard is the primary text (устройство ввода) \_\_\_\_\_ .
2. Click the left mouse (клавиша) \_\_\_\_\_ twice.
3. Options can be selected by using the mouse or the (клавиатура) \_\_\_\_\_.
4. (Датчики) \_\_\_\_\_ detect movement in the room.
5. Change the (экран) \_\_\_\_\_ resolution.
6. The (курсор) \_\_\_\_\_ on your screen can indicate two things: 1) where your mouse pointer is, or 2) where the next character typed will be entered in a line of text.
7. You can (активировать) \_\_\_\_\_ the system by buttons or voice recognition.
8. (Создавать) \_\_\_\_\_ a new directory and put all your files into it.

## **3. Replace the following by one word.**

- 1). A hardware or peripheral device used to send data to a computer. \_\_\_\_\_
- 2). A computer input device that enables a user to hand-draw images, animations and graphics, with a special pen-like stylus, similar to the way a person draws images with a pencil and paper. \_\_\_\_\_
- 3). A small device that a computer user pushes across a desk surface in order to point to a place on a display screen. \_\_\_\_\_
- 4). A device which inputs sound and can be used with voice recognition software. \_\_\_\_\_
- 5). An external input device used to type data into some sort of computer system whether it be a mobile device, a personal computer, or another electronic machine. \_\_\_\_\_
- 6). A computer peripheral or a stand-alone device that converts a document, film, graphic, or photograph to a digital image, manipulable through an appropriate software. \_\_\_\_\_
- 7). A hand-held or stationary input device used to capture and read information contained in a barcode. \_\_\_\_\_
- 8). A cursor control device used in computer games and assistive technology. \_\_\_\_\_
- 9). A computer cursor control device used in many notebook and laptop computers. \_\_\_\_\_
- 10). An input device that utilizes a light-sensitive detector to select objects on a display screen. \_\_\_\_\_
- 11). A real-time camera which transfers live images into the computer and can be used for video conferencing. \_\_\_\_\_

**4. Fill in the blanks with the verbs from the active vocabulary.**

1. I want you to \_\_\_\_\_ the files onto a disk.
2. Newspapers \_\_\_\_\_ letters before printing them.
3. You have to \_\_\_\_\_ the temperature readings from Fahrenheit to Celsius.
4. You should \_\_\_\_\_ a keyboard that is comfortable for you to use.
5. You must \_\_\_\_\_ Windows within 30 days of installation.
6. He can \_\_\_\_\_ figures into the computer, which then predicts the likely profit (прибыль).
7. Painting and drawing programs enable artists to \_\_\_\_\_ realistic images.

**5. Match the words with similar meaning.**

- |                      |                  |
|----------------------|------------------|
| 1. button            | a) to develop    |
| 2. to create         | b) to pick       |
| 3. to select         | c) to transform  |
| 4. to transfer       | d) key           |
| 5. to convert (into) | e) mouse pointer |
| 6. cursor            | f) to transmit   |

**6. Study the table.**

Cardinal						Ordinal			
1	One	11	Eleven	20	Twenty	1st	First	21st	Twenty-first
2	Two	12	Twelve	21	Twenty-one	2nd	Second	30th	Thirtieth
3	Three	13	Thirteen	22	Twenty-two	3rd	Third	31st	Thirty-first
4	Four	14	Fourteen	30	Thirty	4th	Fourth	40th	Fortieth
5	Five	15	Fifteen	40	Forty	5th	Fifth	50th	Fiftieth
6	Six	16	Sixteen	50	Fifty	6th	Sixth	60th	Sixtieth
7	Seven	17	Seventeen	60	Sixty	7th	Seventh	70th	Seventieth
8	Eight	18	Eighteen	70	Seventy	8th	Eighth	80th	Eightieth
9	Nine	19	Nineteen	80	Eighty	9th	Ninth	90th	Ninetieth
10	Ten	20	Twenty	90	Ninety	10th	Tenth	100th	Hundredth
				100	One hundred	12th	Twelfth	1000th	Thousandth
				1000	One thousand				
			1000000		One million				
			1000000000		One milliard/ one billion				
1002	A (one) thousand and two								
3789	Three thousand seven hundred and eighty-nine								

FRACTIONS	
1/2	a/one half
1/4	a/one quarter
1/12	a/one twelfth
1/7	a/one seventh

3/4	three quarters
3/5	three fifths
5 1/3	five and one third (five and a third)
0.6	nought (брит.) /zero (амер.) point/decimal six
8.207	eight point/decimal two nought seven
<p>Существительные, связанные с дробным числом, используются в единственном числе и с предлогом of:  <b>1/4 mile – one quarter of a mile</b></p> <p>Существительные, связанные со смешанной дробью, используются во множественном числе и без предлога of:  <b>5 1/7 kilograms – five and one seventh kilograms</b></p>	

<b>Dates</b>	<b>3 July /3<sup>rd</sup> of July</b>	the third of July / July the third
	<b>1500 AD/BC</b>	fifteen hundred AD (Anno Domini)/BC (Before Christ)
<b>years</b>	<b>1976</b>	nineteen seventy-six;
	<b>1900</b>	nineteen hundred;
	<b>1906</b>	nineteen oh six;
	<b>2000</b>	year two thousand;
	<b>2001... 2009</b>	two thousand and one ... two thousand and nine;
	<b>2010</b>	twenty ten (two thousand and ten)
<b>telephone numbers</b>	<b>794-33-01</b>	seven-nine-four-double three-oh-one
<b>addresses</b>	<b>62 Oxford Street</b>	sixty-two Oxford Street
<b>arithmetic</b>	<b>4<sup>2</sup></b>	four squared
	<b>7<sup>3</sup></b>	seven cubed
	<b>8<sup>4</sup></b>	eight to the power of four
	<b>5+6=11</b>	five plus/and six equals/is eleven
	<b>10-2=8</b>	ten minus four equals/is eight
	<b>5×4=20</b>	five times/multiplied by four equals/is twenty
	<b>30÷6=5</b>	thirty divided by six equals/is five
	<b>7x+6y-z=3z÷4x</b>	seven x plus six y minus z equals three z divided by four
<b>percentage</b>	<b>3%</b>	tree per cent
	<b>4/5%</b>	four fifths per cent/four fifths of one per cent
<b>temperature</b>	<b>-10 degrees</b> <b>+10 °C</b>	ten degrees below zero / minus ten degrees ten degrees above zero / plus ten degrees / ten degrees Celsius
<b>page numbers,</b> <b>exercise numbers,</b> <b>paragraph numbers,</b> <b>etc.</b>	<b>page 20</b> <b>lesson 5</b> <b>paragraph 7</b>	page twenty lesson five paragraph seven

### 7. Read the following:

a) **cardinal numbers:** 379 ; 854 ; 1001 ; 2,143 ; 5,467 ; 544,963 ; 179,041 ; 1,623,457 ;

b) **ordinal numers:** 11<sup>th</sup>; 34<sup>th</sup>, 48<sup>th</sup>, 79<sup>th</sup>, 95<sup>th</sup>, 125<sup>th</sup>, 389<sup>th</sup>, 828<sup>th</sup>, 922<sup>th</sup>, 1234<sup>th</sup>, 1565<sup>th</sup>, 2325<sup>th</sup>, 21323<sup>th</sup>, 45781<sup>th</sup>, 99345<sup>th</sup>.

c) **fractions:** 1/3 ; 1/5 ; 2/3 ; 3/4 ; 4/5 ; 1 1/2 ; 2 1/4 ; 3 1/3 ; 0.5 ; 0.75 ; 2.123 ; 7.5 ; 8.45 ; 3.1256;

- d) **per cents:** 9%; 3/9%; 86%; 100%; 51%; 0.6%; 1.5%;  
 e) **years:** 1856; 1465; 1327; 1990; 2000; 1948; 1317; 1050; 2002; 1995; 1797; 1217;  
 f) **dates:** May, 11; January, 1; March, 8; December, 31; February, 28; June, 22; September, 15; August, 25; April, 3; November, 6; October, 12; July, 15;  
 g) **telephone numbers:** 34-49-32; 55-49-84; 27-64-72; 20-44-37.  
 h) **addresses:** 62 Oxford Street; 114 Willits Street; 19 Jamboree Road; 340 Main Street; 3B Mayakovskogo Street; 75 Ninth Avenue.

### 8. Do the sums. Follow the models.

MODEL 1:  $1 + 3 = 4$  *One plus (and) three is/equals four.*

$6 + 4 = 10$	$20 + 10 = 30$	$10 + 1 = 11$	$22 + 3 = 25$	$8 + 1 = 9$
$12 + 4 = 16$	$50 + 1 = 51$	$99 + 1 = 100$	$32 + 5 = 37$	$44 + 2 = 46;$

MODEL 2:  $5 - 2 = 3$  *Five minus two is/equals three.*

$10 - 2 = 8$	$22 - 2 = 20$	$95 - 3 = 92$	$105 - 5 = 100$
$42 - 2 = 40$	$66 - 2 = 64$	$75 - 5 = 70$	$6 - 1 = 5;$

MODEL 3:  $2 \times 2 = 4$  *Two (times) multiplied by two is/equals four.*

$5 \times 5 = 25$	$3 \times 8 = 24$	$3 \times 12 = 36$	$15 \times 4 = 60$
$25 \times 4 = 100$	$12 \times 12 = 144$	$30 \times 3 = 90$	$80 \times 3 = 240;$

MODEL 4:  $4 : 2 = 2$  *Four divided by two is/equals two.*

$18 : 3 = 6$	$30 : 3 = 10$	$100 : 4 = 25$	$75 : 5 = 15$
$15 : 3 = 5$	$9 : 3 = 3$	$10 : 2 = 5$	$20 : 2 = 10.$

### 9. Answer the following questions:

1. When were you born? / When was your father born? 2. What is your date of birth? / What is your mother's date of birth? 3. What date is it today? 4. What is your telephone number? / What is your best friend's telephone number? 5. What is your height? / How much do you weigh? 6. What is the population of your hometown/country? 7. When was your hometown founded? / How old is your hometown? 8. How far is you hometown from the capital of your country? 9. What is the total area of your country?

### 10. Translate from Russian into English:

1. В 1953 во всем мире использовали только 100 компьютеров. 2. Компания IBM создала первый в Америке программируемый компьютер – «Марк I». 3. В 1946 году IBM представила первый в истории коммерческий калькулятор – IBM 603. 4. В 1959 году IBM продала более 10 тысяч экземпляров вычислительной системы 1401 Data Processing System. 5. 1 апреля 1976 года была основана компания Apple. 6. В 2015 году число сотрудников Google составляло 57 148 человек. 7. Доход (income) компании Google от рекламы составляет 38,6 миллиардов долларов. 8. Google обрабатывает 114,7 миллиардов запросов в месяц от 1,168 миллиардов пользователей. 9. Google Chrome занимает

43% на рынке браузеров. 10. Операционная система Android занимает 79% на рынке мобильных ОС.

**11. Look through the text and say what input devices are mentioned in the text. Read the text for the detailed information about the devices.**

### Input Devices

Components known as input devices let users enter commands, data, or programs for processing by the CPU. Computer keyboards, which are much like typewriter keyboards, are the most common input devices. Information typed at the keyboard is translated into a series of binary numbers that the CPU can manipulate.

Another common input device, the mouse, is a mechanical or optical device with buttons on the top and either a rolling ball or an optical sensor in its base. To move the cursor on the display screen, the user moves the mouse around on a flat surface. The user selects operations, activates commands, or creates or changes images on the screen by pressing buttons on the mouse.

A scanner is an input device which works like a photocopy machine. It is used when some information is available on a paper and it is to be transferred to the hard disc of a computer for further manipulation. The scanner captures images from the source which are then converted into the digital form that can be stored on the disc. These images can be edited before they are printed.

A barcode reader is a device used for reading barcoded data. Barcoded data is generally used in labelling goods, numbering the books etc. It may be a hand held scanner or may be embedded in a stationary scanner. The barcode reader scans a bar code image, converts it into an alphanumeric value which is then fed to the computer to which bar code reader is connected.

Other input devices include joysticks and trackballs. Light pens can be used to draw or to point to items or areas on the display screen. A sensitized digitizer (also graphics tablet) translates images drawn on it with an electronic stylus or pen into a corresponding image on the display screen. Touch-sensitive display screens allow users to point to items or areas on the screen and to activate commands. Voice-recognition circuitry digitizes spoken words and enters them into the computer.

**12. In each sentence the verb has been omitted. Fill in the blanks from the words given. (Some sentences are active, and some are passive.)**

to digitize	to use	to let	to read
to control	to convert	to enter	to translate

1. Input devices ... users enter commands, data, or programs for processing by the CPU.
2. Information typed at the keyboard ... into a series of binary numbers (2 variants are possible).
3. A mouse ... to move the cursor on the display screen.
4. A scanner is used when you have some paper documents to .... .

5. A barcode reader is an electronic device that can ... and output printed barcodes to a computer.
6. The barcode reader ... a bar code image into an alphanumeric value (2 variants are possible).
7. A joystick ... the velocity of the cursor movement in various games.
8. Voice-recognition circuitry digitizes spoken words and ... them into the computer.

**13. Express your agreement or disagreement with the following statements.**

1. Input devices allow users to enter commands, data, or programs for processing by the CPU.
2. Information typed at the keyboard is converted into a series of binary numbers.
3. By moving the mouse around on a flat surface, the user can move the cursor on the display screen.
4. The user can create or change images on the screen by using an optical sensor in its base.
5. A scanner is an input device which works like a photocopy machine.
6. Scanners are used to convert some information available on a paper into the digital form that can be stored on the disc.
7. Light pens translate drawn images into corresponding images on the display screen.
8. Touch-sensitive display screens enable users to point to objects on the screen.
9. Voice-recognition circuitry digitizes spoken words.

**14. Complete the following sentences according to the text.**

1. Input devices enable users... .
2. The most common input device is ....
3. Computer keyboards allow uses to ... .
4. The mouse is used to ... .
5. The scanner is used when ...
6. The barcode reader can perform the following functions: ... .
7. A sensitized digitizer translates ... .
8. Examples of input devices include: ... .

**15. Ask your groupmates and let them answer:**

1. what input devices they know;
2. what functions the keyboard performs;
3. what sort of a device a mouse is;
4. whether they know what the term "light pen" refers to;
5. what applications of the digitizer they can name;
6. whether Bar Code Reader can convert a bar code image into an alphanumeric value;
7. what device digitizes spoken words and enters them into the computer.



**16. Use the information provided in the text and the help box below to describe:**

- a) a scanner; b) a mouse; c) a keyboard; d) joysticks.

<b>Describing functions:</b>
<b>for + Ving:</b> <i>This is a device <b>for controlling</b> the cursor and selecting items on the screen.</i>
<b>used + to + infinitive</b> <i>It's used to control</i>
<b>relative pronoun + verb</b> <i>This is a device <b>which controls</b> ...</i>
<b>relative pronoun + used + to + infinitive</b> <i>This is a device <b>which/that is used</b> to control</i>
<b>work by + Ving</b> <i>It <b>works by detecting</b> light from the computer screen.</i>
<b>Describing features:</b>
<i>An optical mouse has an optical sensor instead of a ball underneath.</i>
<i>It usually features two buttons and a wheel.</i>
<i>You can connect it to a USB port.</i>
<i>A wireless mouse works/operates without cables.</i>
<i>It allows the user to answer multiple-choice questions and...</i>

**17. Do you agree or disagree with the following statement?**

**Good input devices not only provide the basic functionality that allows you to work with your computer, but also make your work much more pleasant.**

**Come up with sensible ideas, use specific reasons and examples to support your answer. Write 120-150 words for the topic.**

## Unit 7

**Grammar: Much, Many, (a) Few, (a) Little**

**Oral Topic: Memory-Storage Devices**

### Lexical and Grammar Exercises

**1. Master the active vocabulary.**

**1) RAM** (random access memory) [ræm] – *оперативная память, оперативное запоминающее устройство*

The random access memory used for temporary data storage is volatile. If the hard disk drive fails to save contents of the random access memory in time due to the power supply termination, the part of the written data is lost.

**2) ROM** (read-only memory) [rɒm] – *постоянное запоминающее устройство*

As the name indicates, data stored in ROM may only be read. A ROM chip is non-volatile storage and does not require a constant source of power to retain information stored on it. A ROM chip is used primarily in the start up process of a computer, whereas a RAM chip is used in the normal operations of a computer after starting up and loading the operating system.

**3) auxiliary** [ɔ:g'zɪl(ə)rɪ] – *вспомогательный, дополнительный*

The most used auxiliary verbs are the verbs *to be*, *to do* and *to have*. Auxiliary memory is a non-volatile memory that is not directly accessible by the CPU, because it is not accessed via the input/output channels (it is an external device).

**4) floppy disk** ['flɒpi disk] – *дискета, гибкий (магнитный) диск*

A floppy diskette (a floppy or floppy disk) was first created in 1967 by IBM as an alternative to buying hard drives that were extremely expensive at the time. Floppy disks were a ubiquitous form of data storage and exchange from the mid-1970s well into the first decade of the 21st century.

**5) hard disk** [ˌhɑ:d disk] – *жёсткий диск*

A hard disk drive (HDD), hard disk, hard drive or fixed disk is a data storage device used for storing and retrieving digital information using one or more rigid ("hard") rapidly rotating disks (platters) coated with magnetic material. A hard drive can be used to store any type of data, including pictures, music, videos, and text documents.

**6) to back up** ['bæk ʌp] – 1) *выполнять резервное копирование (файла, системы, диска), создавать резервную копию (данных); 2) возвращать базу данных в состояние, предшествовавшее сбою*

The verb form is *to back up* in two words, whereas the noun is *backup*. Backups have two distinct purposes: to recover data after its loss, be it by data deletion or corruption, and to recover data from an earlier time,

**7) malfunction** [ˌmælfʌŋk(j)ən] – *сбой, неправильная работа, неправильное функционирование, нарушение работоспособности; ошибка (в программе)*

The red warning lights shall only go out when the malfunction has been corrected. In the event of a malfunction or breakdown, engineers are alerted immediately and can arrive at the scene day or night.

**8) optical disc** ['ɒptɪk(ə)l disk] – *оптический диск*

The old optical disc system was developed in 1991 and its production operations began in 1992. Alternatively referred to as optical media, optical storage, optical disc drive (ODD), and optical disk, an optical disc is any media read using a laser assembly. The most common types of optical media are Blu-ray, CDs, and DVDs.

**9) flash drive** ['flæʃ draɪv] – *флеш-накопитель; флешка*

I put our staff files onto a flash drive. There's no one looking for the flash drive. A USB flash drive (a data stick, a pen drive, a memory unit, a key chain drive, a thumb drive, a jump drive) is a portable storage device; it is often the size of a human thumb (hence the name), and it connects to a computer via a USB port.

**10) recordable** [rɪ'kɔ:dəbl] – *одноразовой записи*

The first DVD recordable format, DVD-R (DVD "dash"), was developed and released in the market by Pioneer in 1997. The "plus" format, DVD+R (DVD "plus"), was developed by Philips and Sony in mid-2002 and used a more reliable technique to provide 'sector' address information.

**11) rewritable** [ri:'raɪtəbl] – *перезаписываемый*

A DVD-RW disc is a rewritable optical disc developed by Pioneer in November 1999. DVD+RW is a physical format for rewritable DVDs created by Philips and finalized in 1997 by the DVD+RW Alliance.

**12) single-sided** ['sɪŋgl'saɪdɪd] – *односторонний, с односторонней записью (о диске)*

When you print single-sided only one page is printed on each side of a sheet of paper. The

term single-sided disk was not common until the introduction of the double-sided disk, which offered double capacity in the same physical size.

**13) double-sided / dual-sided** ['dʌbl'saɪdɪd] / ['dju(:)əl'saɪdɪd] – с двусторонней записью, двусторонний

From the Print dialog box, find and select the setting for double-sided printing. We've included double-sided copies for the archive. In computer science, a double-sided disk is a disk both sides of which are used to store data.

## **2. Give English equivalents for the words in brackets.**

1. Data stored in (ПЗУ) \_\_\_\_\_ cannot be modified, or can be modified only slowly or with difficulty.

2. Although most (жесткие диски) \_\_\_\_\_ are internal, there are also stand-alone devices called external (жесткие диски) \_\_\_\_\_, which can backup data on computers and expand the available disk space.

3. Simplify your (процесс резервного копирования) \_\_\_\_\_ by organizing your files in a central folder.

4. Maybe it was some sort of a (неисправность) \_\_\_\_\_ .

5. (Флеш-накопители) \_\_\_\_\_ are an easy way to transfer and store information and are available in sizes ranging from such as 64 GB all the way up to 1 TB.

6. Philips offers one of the most complete ranges of CD & DVD (записывающих) \_\_\_\_\_ media.

7. (Перезаписываемые) \_\_\_\_\_ DVD+RW must be formatted before recording by a DVD recorder.

## **3. Replace the following by one word.**

1. A flexible removable magnetic disk, typically encased in hard plastic, used for storing data. Also called a diskette. \_\_\_\_\_

2. The copying and archiving of computer data so it may be used to restore the original after a data loss event. \_\_\_\_\_

3. Semiconductor memory in which all storage locations can be rapidly accessed in the same amount of time. It forms the main memory of a computer, used by applications to perform tasks while the device is operating. \_\_\_\_\_

4. A plastic disk (also called a laser disc) on which digital data, as music or pictures, are stored as tiny pits in the surface and read by using a laser. \_\_\_\_\_

5. A data storage device containing flash memory that has no moving parts and does not need batteries or a power supply. \_\_\_\_\_

6. A rigid nonremovable magnetic disk with a large data storage capacity. \_\_\_\_\_

## **4. Fill in the blanks with the words from the active vocabulary.**

1. At the beginning, all the information, which needs to be recorded, gets to the fast \_\_\_\_\_ (buffer) with maximum speed of the interface, and then it is being fixed on a magnetic disk.

2. Select the files or drive you'd like \_\_\_\_\_.
3. The \_\_\_\_\_ may have been due to operator error.
4. \_\_\_\_\_ is a type of non-volatile memory used in computers and other electronic devices.
5. In the new system, \_\_\_\_\_ are no longer used as storage media.
6. DVD \_\_\_\_\_ and DVD \_\_\_\_\_ refer to part of optical disc recording technologies.
7. The latest addition to the \_\_\_\_\_ memory family is flash memory which is much faster as compared to predecessors, since it does not involve any moving parts.
8. Manufacturers sold both \_\_\_\_\_ and \_\_\_\_\_ disks with the \_\_\_\_\_ disks being typically 50% more expensive than \_\_\_\_\_ disks.

**5. Match the words with similar meaning.**

- |                   |                 |
|-------------------|-----------------|
| 1. to boot up     | a) failure      |
| 2. malfunction    | b) to duplicate |
| 3. cellular       | c) concurrently |
| 4. to back up     | d) to start     |
| 5. simultaneously | e) reliable     |
| 6. secure         | f) mobile       |

**6. Match the words with opposite meaning.**

- |                 |                   |
|-----------------|-------------------|
| 1. internal     | a) simultaneously |
| 2. auxiliary    | b) temporary      |
| 3. sequentially | c) external       |
| 4. permanent    | d) dangerous      |
| 5. secure       | e) main           |

**7. Study the table and translate the words in brackets using much, many, (a) few, (a) little.**

	Много		Немного		Мало	
	Many	Much	A few	A little	Few	Little
Исчисляемые существительные	<i>You've made many mistakes in your test paper.</i>		<i>Could you spare me a few minutes?</i>		<i>Very few tourists visit our country in winter.</i>	
Неисчисляемые существительные		<i>We haven't made much progress.</i>		<i>I've got a little cash on me.</i>		<i>There is so little space for kids to play.</i>

1. I know (мало) \_\_\_\_\_ about the history of computer development.
2. Have you got (много) \_\_\_\_\_ lessons today?
3. I have (много) \_\_\_\_\_ work to do.

4. There are (мало) \_\_\_\_\_ terminals in this computer room.
5. He speaks Italian (немного) \_\_\_\_\_ .
6. There are (несколько) \_\_\_\_\_ teams at our IT department.
7. I am sorry but only (мало) \_\_\_\_\_ people understand your ideas.
8. It takes me (много) \_\_\_\_\_ time to get to the university.
9. He knows (мало) \_\_\_\_\_ about memory storage devices. He still has (много) to learn.
10. There are very (мало) \_\_\_\_\_ illustrations in the book.

**8. Complete the sentences with much, many, (a) few, (a) little.**

1. He showed \_\_\_\_\_ interest to the project.
2. There isn't \_\_\_\_\_ useful information in his article.
3. I don't know \_\_\_\_\_ people at this seminar. Do you?
4. How \_\_\_\_\_ money do you spend a month?
5. He waited \_\_\_\_\_ minutes and then left.
6. This is a very good car. It needs \_\_\_\_\_ repairs.
7. We've put \_\_\_\_\_ energy into the plan, I hope it works.
8. He has \_\_\_\_\_ friends. He is so lonely.
9. Hurry up. We have got very \_\_\_\_\_ time.
10. There is \_\_\_\_\_ hope that everything will be OK.
11. Did you take \_\_\_\_\_ photographs at the conference? - No, I did ....

**9. Translate from Russian into English.**

1. Осталось несколько дней до нашего отъезда.
2. Постарайся меньше тратить времени понапрасну.
3. Он проявляет мало интереса к учебе.
4. Многие его идеи интересны.
5. Он зарабатывает не очень много денег, но ему нравится его работа.
6. Я смог понять совсем немного из того, что он сказал.
7. Я встречал его много раз, но так и не запомнил его имени.
8. Прошлой осенью выпало много осадков в виде дождя.
9. Давай еще подождем немного.
10. Ему следует мало говорить, а много работать.

**10. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. Memory chips are soldered onto the printed circuit boards. \_\_\_\_\_
2. Each chip consists of millions of transistors and capacitors. \_\_\_\_\_
3. Flash memory combines the recordability of RAM with the persistence of ROM. \_\_\_\_\_
4. Data is encoded on a disc as a series of pits and flat spaces, called lands. \_\_\_\_\_

- a) конденсаторы
- b) сохранение, постоянство
- c) припаиваются

- d) возможности записи
- e) ряд углублений
- f) печатные платы
- g) площадки

**11. Look through the text and say how many types of memory-storage devices are mentioned in the text. Read the text for the detailed information about the devices.**

### **Memory-Storage Devices**

Most digital computers store data both internally, in main memory, and externally, on auxiliary storage units. As a computer processes data and instructions, it temporarily stores information in main memory, which consists of random-access memory (RAM). Random access means that each byte can be stored and retrieved directly, as opposed to sequentially as on magnetic tape.

Memory chips are soldered onto the printed circuit boards, or RAM modules, that plug into special sockets on a computer's motherboard. In dynamic RAM commonly used for general system memory, each chip consists of millions of transistors and capacitors. Each capacitor holds one bit of data, either a 1 or a 0. A set of 16 chips on a RAM module can store up to 1 GB of data. This kind of internal memory is also called read/write memory.

Another type of internal memory consists of a series of read-only memory (ROM) chips. The data stored in ROM persists when power is removed. ROM chips are stored with special manufacturer instructions that normally cannot be accessed or changed. The programs stored in these chips correspond to commands and programs that the computer needs in order to boot up to carry out basic operations. Because ROM is a combination of hardware (microchips) and software (programs), it is often referred to as firmware.

Auxiliary storage units supplement the main memory by holding programs and data that are too large to fit into main memory at one time. They also offer a more permanent and secure method for storing programs and data.

Floppy disks, hard disks, and magnetic tape store data by magnetically rearranging metal particles on their surfaces. Particles oriented in one direction represent 1s, and those oriented in another direction represent 0s. Floppy-disk drives can store from 1.4 to 2.8 MB of data on one disk and have been used primarily in PCs. Hard-disk drives, or hard drives, contain nonremovable magnetic media and are used with all types of computers. They access data very quickly and can store hundreds of GB of data.

Magnetic-tape storage devices are used together with hard drives on large computer systems that handle high volumes of constantly changing data. The tape drives, which access data sequentially and slowly, regularly back up the data in the hard drives to protect the system against loss of data during power failures or computer malfunctions.

Flash memory is a solid-state electronic storage medium that combines the recordability of RAM with the persistence of ROM. Since its invention in the late 1980s (by Intel and Toshiba), it has become standard for portable devices such as digital cameras, cellular telephones, PDAs, MP3 players, and video-game machines. In the early 21st century, flash memory devices that had storage capacities of up to 1 GB (and later more) began to serve as portable hard drives.

Optical discs are nonmagnetic auxiliary storage devices that developed from audio compact

disc (CD) technology. Data is encoded on a disc as a series of pits and flat spaces, called lands, the lengths of which correspond to different patterns of 0s and 1s. One removable 4 1/4-inch (12-centimeter) CD contains a spiral track more than 3 miles (4.8 kilometers) long, on which nearly 1 GB of information can be stored. Read-only CDs, whose data can be read but not changed, are called CD-ROMs (compact disc–read-only memory). Recordable CDs—called CD-R for write once/read many (WORM) discs and CD-RW for rewritable discs—have been used to periodically back up changing databases or to create (“burn”) one’s own music CDs.

Digital video disc (DVD) is an optical format that uses a laser to read smaller data-storage regions. Although DVDs are the same size as CDs. Single-sided discs hold up to 4.7 GB. There exist several types of recordable, as well as rewritable, DVDs.

**12. Find in the text English equivalents for the following Russian words and word combinations.**

Быть такого же размера, как и; защищать от; в отличие от чего-л.; иметь доступ к чему-л.; вплоть до, максимально; вмещаться на; потеря данных; в конце 1980-х; в начале 21 века.

**13. Express your agreement or disagreement with the following statements. Give your grounds.**

1. Most digital computers store data in main memory and on auxiliary storage units.
2. A computer temporarily stores information in ROM.
3. A set of 16 chips on a RAM module can store up to 1 MB of data.
4. The data stored in ROM persists when power is off.
5. The programs stored in ROM chips can be changed.
6. Hard-disk drives are used with all types of computers and can store hundreds of GB of data.
7. Flash memory devices serve as portable hard drives.
8. CDs appeared later than DVD.

**14. Complete the sentences according to the text.**

1. Internal computer storage implies storing data ....
2. External storage means ....
3. RAM provides ... unlike ROM, that provides ....
4. Firmware is another name for ....
5. Auxiliary storage devices include ....
6. ... are magnetic storage media.
7. ... is a solid-state electronic storage medium.
8. ... are optical storage formats.

**15. Ask your groupmates and let them answer:**

- a) what type of auxiliary storage they consider to be the most reliable;

- b) what the difference between CDs and DVDs is;
- c) to explain the difference between RAM and ROM;
- d) if hard drives always contain magnetic media;
- e) what devices are used to back up data;
- f) when and who invented flash memory-storage;
- g) if they know the length of a CD track;
- h) which portable devices use flash memory.

### 16. Discuss in pairs and explain

- a) the difference between external and internal storage;
- b) the difference between magnetic, optic and electronic storage media;
- c) the difference between main, auxiliary memory storage devices;
- d) how storage devices differ according to their storage capacity.

**17. Storing Your Life in the Clouds. Cloud storage is a new way to save your files that has made many hard-storage technologies obsolete. Is cloud computing an amazing tool? Share your ideas and express your opinion in an essay of 120-150 words. (See Unit 3, ex. 21).**

## Unit 8

**Grammar: Comparison**  
**Oral Topic: Output devices**

### Lexical and Grammar Exercises

**1. Read the following words. Translate the sentences into Russian. Learn the words by heart.**

**1). cathode-ray tube** ['kæθəʊd reɪ tjuːb] - *электронно-лучевая трубка, ЭЛТ*

German Karl Ferdinand Braun invented the cathode-ray tube oscilloscope in 1897. The cathode-ray tube (CRT) is a vacuum tube containing one or more electron guns, and a screen used to view images. Essentially, our cathode-ray tube is just two electrodes in a vacuum chamber with a high voltage applied between them.

**2). liquid-crystal display** (LCD) ['lɪkwɪd 'krɪst(ə)l dɪs'pleɪ] / [ˌelsi:'di:] - *жидкокристаллический экран*

A liquid crystal display (LCD) technology was developed by George Heilmeyer and patented by James Ferguson in the early 70s. A liquid-crystal display (LCD) is a flat-panel display or other electronic visual display that uses the light-modulating properties of liquid crystals.

**3). light emitting diode** (LED) [laɪt ɪ'mɪtɪŋ 'daɪəʊd] / [led]- *светоизлучающий диод, светодиод*

Nick Holonyak, Jr. is an American engineer and educator, noted particularly for his invention of a light-emitting diode (LED) in 1962. A light-emitting diode (LED) is a two-lead semiconductor (двухпроводной полупроводник) light source.



**4). to accept** [ək'sept] - *принимать; допускать; считать приемлемым или допустимым*

A printer is a device that accepts text and graphic output from a computer and transfers the information to paper. This machine only accepts coins. The college he applied to has accepted him.

**5). inkjet printer** ['ɪŋkɔʒet 'prɪntə] - *струйный принтер*

An inkjet printer is a printer that uses very small jets (распылители, форсунки) to blow ink onto paper in order to form letters, numbers. The best known printers are inkjet printers. This inkjet printer can make 15 black or colored copies per minute in A4 size paper.

**6). resolution** [ˌrez(ə)'luːʃ(ə)n] - *разрешение, разрешающая способность*

The four printer qualities of most interest to most users are: colour, resolution (measured in dots per inch (dpi)), speed, memory. If you think the screen resolution is wrong, you will need to check some sections in your configuration. Click on the suitable resolution for the preview.

**7). medium** ['miːdiəm] (pl. mediums, media) - *[передающая] среда, среда передачи; носитель (информации)*

An inkjet printer is one that propels droplets of ink directly onto the medium. The Internet is a borderless, global communications medium used by individuals and companies around the world. The Internet as a medium revealed new difficulties related to trade, work and other matters.

**8). to figure out** ['fɪɡər aʊt] - *вычислять; понимать, постигать*

An electronic circuit in the printer figures out what data needs to look like on the page. Tom couldn't figure out how to export JPEG files. It's the best time to figure out which buttons to push.

**9). pattern** ['pætn] - *образец, шаблон; закономерность; характер; образ, изображение*

An electronic circuit in the printer makes a laser beam scan back and forth across a drum inside the printer, building up a pattern of static electricity. Standard documents are documents having common pattern, but filled with individual data for every person. If you want, you can save the pattern under a different name.

**10). to attract** [ə'trækt] - *притягивать, привлекать*

The static electricity attracts onto the page a kind of powdered ink called toner. Opposites attract. Simple sound output, such as the buzzer (зуммер, звуковой сигнализатор), is often used to attract the attention of the user.

**11). to bond** [bɒnd] - *связывать, соединять, скреплять*

A fuser unit bonds the toner to the paper. Linux allows us to bond multiple network interfaces into single interface. It takes less than 10 minutes for the two surfaces to bond.

**12). drawing** ['drɔːɪŋ] - *чертёж; рисунок; изображение; рисование, черчение*

The drawing has two dimensions. A plotter is an instrument (usually driven by a computer) for drawing graphs or pictures. Before production begins, a detailed drawing is made for each of the details.

**13). to accommodate** [ə'kɒmədeɪt] - *подгонять; приспособливать, размещать; вмещать*

The plotter was the first computer output device that could accommodate full-size engineering and architectural drawings. The second version of XT motherboard (1986–1987) could accommodate 640 KB. A LAN (локальная сеть) can be connected to another LAN

to accommodate more computers.

**14). speaker** ['spi:kə] - акустическая колонка, динамик

Audio speakers allow the user to hear sounds, such as music or spoken words. He bought a CD player and radio with two ultra-slim speakers. You can improve the sound of music and video games by installing computer speakers.

**15). headphones** ['hedfəʊnz] - наушники

Head-mounted speakers are called headphones. The first headphones (or at least their early ancestors) were used by telephone operators. The student uses headphones to minimize distraction and filter external noise during testing.

**16). headset** ['hedset] - гарнитура

A headset is a pair of headphones with a microphone attached. Headsets are commonly used in technical support and customer service centers and allows the employee to talk to a customer while typing information into a computer.

## **2. Work in pairs and match the underlined terms (1-9) with their definitions (a-i):**

1). An input device converts incoming data and instructions into a pattern of electrical signals in binary code.

2). Print resolution is measured in terms of number of dots per inch (dpi).

3). Plotters interpret computer commands and makes line drawings on paper using multicolored automated pens.

4). Two components are needed for the audio output: a sound card and speakers.

5). Flash memory is data-storage medium used with computers and other electronic devices.

6). Most inkjet printers are relatively small and can fit in tight spaces.

7). A laser printer can produce excellent print quality, both black and white, as well as color.

8). Computer headsets typically feature one of two types of connectors for connecting to a computer: mini plug or USB.

9). Headphones can be used by many different people and may need to be frequently cleaned to help prevent the spreading of germs.

a). the power of a computer screen, printer, etc. to give a clear image, depending on the size of the dots that make up the image;

b). a hardware device connected to a telephone or computer that allows the user to talk and listen while keeping their hands free;

c). the part of a radio, computer or piece of musical equipment that the sound comes out of;

d). the regular way in which something happens, develops, or is done;

e). a device that prints by spraying streams of quick-drying ink on paper;

f). a picture, a plan or a sketch made by means of lines, esp. one made with a pencil or pen without the use of colour;

g). hardware device that either plugs into your computer or your speakers to privately listen to audio without disturbing anyone else;

h). a device that utilizes laser technology to print images on the paper;

i). a term used to describe any type of computer storage.

### 3. Complete the sentences below with the correct form of the terms from exercise 2:

1. Large .... are essentially just two loudspeakers mounted on a strap that clamps firmly over your head.
2. A ... is efficient on toner use, compared to inkjet printer usage of ink.
3. A ... has a higher cost per page when it comes to printing, due to their rather inefficient usage of ink.
4. With monitors, the ... is measured by the number of pixels horizontal by pixels vertically; for example 640x480.
5. Leonardo da Vinci (1452-1519) made ... of gear-driven calculating machines.
6. When computers were originally released, they had on-board (встроенный) ... that generated a series of different tones and beeps.
7. A headphone may be equipped with a microphone, in which case it is called a ... .
8. A general ... began to emerge in the data.
9. Architectural ... serve the purpose of conveying intent (замысел), scope and quantity.

### 4. Study the following tables:

	Positive	Comparative	Superlative
1-syllable adjective	<i>close</i>	<i>closer</i>	<i>closest</i>
	<i>big</i>	<i>bigger</i>	<i>biggest</i>
	<i>fat</i>	<i>fatter</i>	<i>fattest</i>
	<i>dry</i>	<i>drier</i>	<i>driest</i>
2-syllable adjectives and ending in -y, -er, -ow, -le	<i>bumpy</i>	<i>bumpier</i>	<i>bumpiest</i>
	<i>able</i>	<i>abler</i>	<i>ablest</i>
	<i>gentle</i>	<i>gentler</i>	<i>gentlest</i>
	<i>hollow</i>	<i>hollower</i>	<i>hollowest</i>
	<i>clever</i>	<i>cleverer</i>	<i>cleverest</i>
2 or more syllable adjectives other cases	<i>beautiful</i>	<i>more beautiful</i>	<i>most beautiful</i>
	<i>colorful</i>	<i>more colorful</i>	<i>most colorful</i>
	<i>complete</i>	<i>more complete</i>	<i>most complete</i>
irregular adjectives	<i>good</i>	<i>better</i>	<i>best</i>
	<i>bad</i>	<i>worse</i>	<i>worst</i>
	<i>little</i>	<i>less</i>	<i>least</i>
	<i>far (place)</i>	<i>farther</i>	<i>farthest</i>
	<i>far (place or time)</i>	<i>further</i>	<i>furthest</i>
	<i>late (time)</i>	<i>later</i>	<i>latest</i>
	<i>late (order)</i>	<i>latter</i>	<i>last</i>
	<i>old (people and things)</i>	<i>older</i>	<i>oldest</i>
	<i>old (people)</i>	<i>elder</i>	<i>eldest</i>

<b>as + positive adj. + as</b>	<i>Inexpensive Bluetooth speakers can play <b>as loud as</b> a normal speaking voice. If the colours on printed documents are too light or not <b>as bright as</b> expected, there are many different things you can try to resolve the issue. Love isn't always <b>as clear as</b> black and white.</i>
<b>not as/so + positive adj. + as</b>	<i>Her laptop isn't <b>as reliable as</b> mine. In the early 1960s transistors were <b>not as reliable as</b> they are now.</i>
<b>twice as + positive adj. + as</b> <b>three times as + positive adj. + as</b>	<i>The DDR2-based creation is <b>twice as capacious as</b> 8GB sticks. Asci White is nearly <b>three times as powerful as</b> the next most powerful supercomputer.</i>
comparative adj. + <b>than...</b>	<i>Your brain is still 30 times <b>more powerful than</b> the best supercomputers. This projector offers a resolution of 1920 x 1080 pixels, giving a <b>higher</b> resolution <b>than</b> most comparable printers do. Printers, that use at least 8 ink colourants, provide a much <b>greater</b> range of colours <b>than</b> printers using just 4 inks.</i>
<b>much/ a lot/ far + comparative adj.</b>	<i>They also claim a <b>much faster</b> printing speed than most of their laser-based competitors. A laser printer is <b>far cheaper</b> in the long run than an inkjet one. Inkjets are <b>a lot better</b> than they were 20 years ago.</i>
<b>a little/ a bit + comparative adj.</b>	<i>Downsizing the file will give you <b>a little sharper</b> picture. WXGA projectors are usually <b>a bit more expensive</b> than XGA.</i>
comparative adj. <b>and</b> comparative adj.	<i>Computers are becoming <b>more and more powerful</b>. Desktop machines are capable of <b>better and better</b> resolution. Computers will keep getting <b>faster and faster</b>.</i>
<b>The + comp.adj..., the + comp.adj ...</b>	<i><b>The more</b> memory your computer has, <b>the more</b> data it can store. <b>The bigger</b> your computer system, <b>the less</b> time you spend waiting. <b>The more</b> training you give to your employees, <b>the better</b> they will perform.</i>
<b>one of + superlative adj.</b>	<i>Quebec is <b>one of the most attractive</b> cities in Canada. This laser printer is <b>one of the best</b> colour laser printers offered by Hewlett Packard. When it comes to loudspeakers manufacturing for automobiles, Rockford Fosgate is <b>one of the most reliable</b> names on the market.</i>

**5. Complete these sentences with the positive, comparative or superlative forms of the adjectives in brackets.**

1. Always buy the (fast) \_\_\_\_\_ scanner with the (high) \_\_\_\_\_ resolution you can afford.
2. They have created the (revolutionary) \_\_\_\_\_ camera to date.
3. Even the (sophisticated) \_\_\_\_\_ computers must be told what to do.




4. The (much) \_\_\_\_\_ training you give to your employees, the (effective) \_\_\_\_\_ they will perform.
5. Some companies have as (many) \_\_\_\_\_ computers as employees.
6. Multifunction peripherals have become much (reliable) \_\_\_\_\_ and easy to set up.
7. The (high) \_\_\_\_\_ the resolution, the (much) \_\_\_\_\_ information can be displayed on the screen.
8. This drive is nearly twice as (capacious) \_\_\_\_\_ as the Seagate 8TB external hard drive we have recently tested and has nearly four times (much) \_\_\_\_\_ storage than the Samsung 4TB portable drive we reviewed last week.
9. Modern computers can solve certain classes of arithmetical problems millions of times (fast) \_\_\_\_\_ than a skilled mathematician.
10. The beginning of a new CRT technology will allow us to give (good) \_\_\_\_\_ and (good) \_\_\_\_\_ resolution and make a (clear) \_\_\_\_\_ picture.
11. This is the (popular) \_\_\_\_\_ package on the market today.
12. The (much) \_\_\_\_\_ memory your computer has, the (much) \_\_\_\_\_ data it can store.
13. The (good) \_\_\_\_\_ programs are those adapted specifically to your own needs.
14. When you tap the screen the camera doesn't just focus on the object, it also applies exposure to that area of the photo so your photos should look far (good) \_\_\_\_\_ .
15. One of (important) \_\_\_\_\_ reasons why computers are used so widely today is that almost every big problem can be solved by solving a number of little problems.
16. A mainframe is (large) \_\_\_\_\_ and (expensive) \_\_\_\_\_ than a microcomputer.
17. For the (late) \_\_\_\_\_ generation, Silicon Valley and Tokyo have been working to design computers that are ever (easy) \_\_\_\_\_ to use.
18. The (big) \_\_\_\_\_ your computer system, the (little) \_\_\_\_\_ time you spend waiting.
19. New parallel systems are three times as (powerful) \_\_\_\_\_ as the one used before.
20. Laptops are as (powerful) \_\_\_\_\_ as microcomputers.

## **6. Translate into English:**

1. Это самое плохое программное обеспечение, которое я когда-либо использовала.
2. Я думаю, ты должен купить этот принтер. Он самый надежный.
3. Майнфрейм больше и дороже микрокомпьютера.
4. Научиться пользоваться компьютером не так сложно, как научиться программировать.
5. В этом семестре студенты более заняты, чем в прошлом семестре.
6. Ваш ответ сегодня намного лучше, чем вчера.
7. BASIC - самый несложный язык программирования.
8. Чем быстрее вы начнете упорно заниматься английским языком, тем большего успеха вы добьетесь.
9. Чем раньше мы начнем эту работу, тем быстрее мы ее окончим.
10. Это последняя модель высокоскоростного компьютера.
11. Лазерные принтеры стоят немного дороже, чем обычные струйные, но эксплуатация этих принтеров значительно дешевле.
12. Лазерные проекторы намного надежнее своих ламповых аналогов и гораздо дешевле в эксплуатации.
13. При выборе проектора обратите внимание на две спецификации: яркость белого и цветовую яркость. Чтобы выбрать проектор с яркими и естественными цветами, необходимо, чтобы цветовая яркость проектора была такой же высокой, как и яркость белого.
14. Чем больше величина данного параметра, тем лучше звук смогут воспроизвести колонки.
15. Тестирование по-

казало, что при печати одного и того же количества страниц, струйные принтеры Epson расходовали в два раза больше чернил, чем принтеры Canon.

**7. Work in pairs. Read these product descriptions and compare the three printers.**

	Canon PIXMA iP100	HP Officejet Pro 8600	Epson WorkForce 845
			
price	\$225	\$377	\$440
Print speed (black and white)	9 pages per minute	18 pages per minute	15 pages per minute
Print speed (colour)	5,9 pages per minute	13 pages per minute	9,3 pages per minute
Vertical Print Resolution (black and white)	600 dpi	1,200 dpi	5,760 dpi
Horizontal Print Resolution (black and white)	600 dpi	600 dpi	1,440 dpi
Vertical Print Resolution (colour)	9,600 dpi	4,800 dpi	5,760 dpi
Horizontal Print Resolution (colour)	2,400 dpi	1,200 dpi	1,440 dpi
Memory	-	128 MB	-
Max. input capacity	50 sheets	250 sheets	500 eets

**8. Work in pairs. Write ten sentences comparing three software products you use or know.**

**9. Read the text.**

**Output Devices**

Components that let the user see or hear the results of the computer's data processing are known as output devices. The most common one is the video display terminal (VDT), or monitor, which uses a cathode-ray tube (CRT), liquid-crystal display (LCD), light emitting diode (LED), plasma or 3D technologies to show characters and graphics on a television-like screen.

A printer is a device that accepts text and graphic output from a computer and transfers the information to paper. The best known printers are the inkjet printer and the laser printer. The four printer qualities of most interest to most users are: colour, resolution (measured in dots per inch (dpi)), speed, memory.

An inkjet printer is one that propels droplets of ink directly onto the medium. Today, almost all inkjet printers produce colour. A laser printer uses a laser to print a full page at a time. When you print something, your computer sends electronic data to your printer. An electronic circuit in the printer figures out what all this data means and what it needs to look like on the page. It makes a laser beam scan back and forth across a drum inside the printer, building up a pattern of static electricity. The static electricity attracts onto the page a kind of powdered ink called toner. Finally, a fuser unit bonds the toner to the paper.

A data projector is a device that projects computer output. It is widely used in classrooms. A data projector shows a copy of what is viewed on a monitor.

A plotter is a graphics printer that draws images with ink pens. It actually draws point-to-point lines directly from vector graphics files. The plotter was the first computer output device that could print graphics as well as accommodate full-size engineering and architectural drawings.

Most PCs also have audio speakers. These allow the user to hear sounds, such as music or spoken words, that the computer generates. Head-mounted speakers are called headphones. Some variations of headphones include headsets (headphones and microphone) and earphones.

### **10. Express your agreement or disagreement with the following statements.**

1. Output devices are components allowing users to see or hear the results of the computer's data processing.
2. A monitor shows characters and graphics on a television-like screen.
3. A printer is a device that accepts text and graphic output from paper and transfers the information to the computer.
4. The four printer qualities of most interest to users are: colour, resolution, print speed and cartridge capacity.
5. A laser printer propels droplets of ink directly onto paper.
6. An electronic circuit in a laser printer makes a laser beam build up a pattern of static electricity on paper.
7. A pattern of static electricity, built up by a laser beam, attracts toner.
8. A data projector shows a copy of data displayed on a monitor.
9. The plotter was the first computer output device that could print graphics as well as accommodate full-size engineering and architectural drawings.
10. Audio speakers let users hear sounds, generated by computers.

### **11. Complete the following sentences according to the text.**

- 1). Output devices allow users to... .
- 2). The most common output device is ....
- 3). Printers let users ... .
- 4). A data projector is used to ... .
- 5). A plotter is used when users need ... .
- 6). Audio speakers convert ... into ... .

**12. Ask your groupmates and let them answer:**

- 1). what output devices they can name;
- 2). what types of monitors they know;
- 3). about the difference in operation of laser and ink-jet printers;
- 4). about the applications of a plotter;
- 5). what a data projector is used for;
- 6). what devices can convert electrical audio signal into corresponding sounds.

**13. Imagine that you have received an email from your friend, who is planning to buy a printer. Your friend wants you to give him some recommendations. Write him an email in 120-150 words.**

**Useful phrases**

• **for the opening:**

Thank you / Many thanks for your email.

It was good / nice / great to hear from you again.

I'm sorry I haven't written / haven't been in touch for such a long time.

It's ages since I've heard from you.

I hope you're well.

How are things? / How are you? / How's it going?

• **for giving recommendations:**

Why don't you ...?

Maybe you could ...?

How about (...doing sth)...?

Whatever you do, don't .....

Make sure you.....

Be sure to ....

You really must ....

You'd be best off (...doing sth).

I'm sure you will enjoy (...doing sth).

• **for the closing:**

Anyway, I must go and get on with my work!

I guess it's time I got on with that studying I've been avoiding.

Anyway, don't forget to let me know .....

We must try and meet up soon.

I can't wait to hear from you.

See you soon.

All the best.

Take care.

Write your first name on the last line.



## Unit 9

**Grammar:** Modal Verbs  
**Oral Topic:** Software

### Lexical and Grammar Exercises

#### 1. Master the active vocabulary.

**1) systems software** ['sɪstəmz 'sɔftwɛə] - *системное программное обеспечение*

Examples of system software (systems software) include operating systems, computational science software, game engines, industrial automation, and software as a service applications. Since system software runs at the most basic level of your computer, it is called "low-level" software.

**2) applications software** [ˌæplɪ'keɪʃ(ə)nz 'sɔftwɛə] – *прикладное программное обеспечение*

Software that allows users to create documents (e.g. Microsoft Word), edit pictures (e.g. Adobe Photoshop), browse the Internet (e.g. Microsoft Internet Explorer), or check their e-mail (e.g. Microsoft Outlook) are considered to be application software.

**3) load** [ləʊd] – *загрузка, загрузить*

Load refers to beginning or executing a program by moving (loading) the necessary information from a diskette drive, such as a hard drive, into a computer's memory. I hate infinite scrolling, because I believe that users should have the right to choose if they want to load the next page or not.

**4) operating system** ['ɒpəreɪtɪŋ 'sɪstəm] – *операционная система*

The system software is installed on your computer when you install your operating system. The operating system (OS) is the most important program that runs on a computer.

**5) set** [set] – 1) *множество; совокупность; семейство; ряд; последовательность* 2) *набор; комплект*

There's a new set of values, a new set of things people value. The following set of instructions for using a PC includes a basic introduction to the keyboard, mouse, desktop, and Windows.

**6) directory** [dɪ'rekt(ə)rɪ ], [daɪ-] – *каталог*

The directory listing showed the total amount of disk space the files occupied as well as their names, modification dates, and other details. You can always save the file into another directory. Look up their number in the telephone directory.

**7) folder** ['fəʊldə] – *папка*

If the message is starred, it will be downloaded in the 'Starred' folder. This folder has 17,000 photos -- over 20 gigabytes of information -- and it's growing constantly.

**8) advanced** [əd'vɑ:n(t)st] – *современный, передовой; продвинутый; повышенный*

His ideas were too far advanced to be accepted by ordinary people. You can learn about advanced search features here.

**9) support** [sə'pɔ:t] – 1) *поддержка; помощь; сопровождение;* 2) *поддерживать; обеспечивать*

The terminal supports the Advanced Security technology and features a multilingual

interface. There are companies that provide free support and help to all users with computer related issues. We offer IT support for business organizations of different sizes and spheres of activities.

**10) graphical user interface (GUI)** ['græfɪkəl 'ju:zər 'ɪntəˌfeɪs] / ['gui:] / [dʒi:ju:'aɪ] – *графический интерфейс пользователя*

A GUI (pronounced as either G-U-I or gooeey) allows using icons or other visual indicators to interact with electronic devices, rather than using only text via the command line. The GUI was first developed at Xerox PARC by Alan Kay, Douglas Engelbart, and a group of other researchers in 1981. GUI operating systems are easy to learn and use because commands do not need to be memorized.

**11) database** ['deɪtəbeɪs] - *база данных*

A database (a databank or a datastore, sometimes abbreviated as a DB) is a large quantity of indexed digital information. A database can be searched, referenced, compared, changed or otherwise manipulated with optimal speed and minimal processing expense.

**12) spreadsheet** ['spredʃi:t] – *электронная таблица*

Applications software comprises programs designed for an end user, such as word processors, database systems, and spreadsheet programs. A worksheet, or a spreadsheet is a file made of rows and columns that help sort data, arrange data easily, and calculate numerical data. A good example of how a spreadsheet may be used is creating an overview of a bank's balance.

**13) command line** [kə'mɑ:nd] – *командная строка*

Sometimes referred to as the command screen or a text interface, the command line is a user interface that is navigated by typing commands at prompts, instead of using the mouse. Some command-line tools require the user to have administrator-level privileges.

**14) multiprocessing** [ˌmʌltɪ'prəʊsesɪŋ] – *многопроцессорная обработка*

Multiprocessing is the use of two or more central processing units (CPUs) within a single computer system. Multiprocessing also refers to the ability of a system to support more than one processor and/or the ability to allocate tasks between them.

## **2. Give English equivalents for the words in brackets.**

1. (Системное ПО) \_\_\_\_\_ refers to the files and programs that make up your computer's (операционную систему) \_\_\_\_\_ .

2. When writing (набор) \_\_\_\_\_ of instructions you must place the instructions you want to be carried out in the correct order.

3. If you can't find the confirmation email, check your email's spam (папку) \_\_\_\_\_ .

4. (Каталог) \_\_\_\_\_ is a division in a hierarchical structure that organizes the storage of computer files on a disk.

5. (Графический пользовательский интерфейс) \_\_\_\_\_ uses windows, icons, and menus to carry out commands, such as opening, deleting, and moving files.

6. For a (база данных) \_\_\_\_\_ to be truly functional, it must not only store large amounts of records well, but be accessed easily.

7. (Многопроцессорная обработка) \_\_\_\_\_ is an ability of a computer to utilize two or more processors for computer operations.

### **3. Replace the following by one word.**

1. Software on a computer that is designed to control and work with computer hardware.

\_\_\_\_\_

2. An icon on a computer screen that can be used to access a directory containing related files or documents. \_\_\_\_\_

3. A collection of objects having specific common properties. \_\_\_\_\_

4. The software that supports a computer's basic functions, such as scheduling tasks, executing applications, and controlling peripherals. \_\_\_\_\_

5. A file that consists solely of a set of other files. \_\_\_\_\_

6. A term used to describe a group of individuals or help documents used to assist users with a product or group of products. \_\_\_\_\_

7. The line on the display screen where a command is expected. \_\_\_\_\_

8. A structured set of data held in a computer, esp. one that is accessible in various ways.

### **4. Fill in the blanks with the words from the active vocabulary.**

1. Restart the browser and try \_\_\_\_\_ the applet.

2. Develop \_\_\_\_\_ of instructions advising users how to perform a specific task.

3. You can also create a new \_\_\_\_\_: Touch the folder box.

4. I'll show you the \_\_\_\_\_ technologies we use to test this gear.

5. \_\_\_\_\_ is required when a user experiences a problem or would like additional information on a product.

6. There are several common types of \_\_\_\_\_. Each type of \_\_\_\_\_ has its own data model (how the data is structured).

7. Today, Microsoft Excel is the most popular and widely used \_\_\_\_\_ program, but there are also many alternatives.

8. \_\_\_\_\_ is the ability to carry out more than one process simultaneously.

### **5. Match the words with similar meaning.**

1. to allow

2. fundamental

3. to manipulate

4. to perform

5. concurrently

6. advanced

a) progressive

b) to handle

c) to accomplish

d) to enable

e) basic

f) simultaneously

### **6. Match the words with opposite meaning.**

1. similar

2. main

3. secure

4. multiple

5. specific

a) auxiliary

b) single

c) different

d) general

e) unprotected

**7. a) Study the table.**

Modal verbs and their equivalents	Meaning	Present	Past	Future
<b>can be able to</b>	умственная и физическая возможность, способность совершить действие	<i>I can read. I am able to learn any foreign language.</i>	<i>My grandfather could speak four foreign languages. (general ability) They didn't want to go with us but we managed to persuade them. (a particular situation)</i>	<i>I'll be able to come tomorrow.</i>
<b>may be allowed to</b>	разрешение, предположение	<i>I may use his dictionary. I am allowed to invite my friends to the party. It may be true.</i>	<i>I was allowed to invite my friends to the party.</i>	<i>I'll be allowed to go to the party if I pass my exam successfully.</i>
<b>must</b>	обязанность, необходимость	<i>This work must be done at once. You mustn't be late. I must get up early tomorrow because there are a lot of things I want to do. (personal feelings)</i>	<i>This work had to be done at once. I had to get up early.</i>	<i>I'll have to do it. I'll have to get up early.</i>
<b>have to</b>	необходимость совершения действия в зависимости от обстоятельств	<i>You can't turn right here; you have to turn left. (because of a rule) I have to get up early tomorrow as I'm going away and my train leaves at 7.30. (because of the situation)</i>	<i>I had to turn left because of the traffic system.  I had to get up early yesterday as I was going away and my train left at 7.30.</i>	<i>I'll have to wear a uniform at my new school.</i>
<b>be to</b>	необходимость совершения действия, заранее запланированного	<i>I am to meet him at 5.</i>	<i>I was to meet him at 5 o'clock at the station.</i>	-
<b>should</b>	совет, субъективное мнение о необходимости совершения действия	<i>You should consult a doctor. You should thank him for his advice.</i>	-	-
<b>ought to</b>	необходимость совершения действия, обусловленная логикой вещей, моральным долгом	<i>Parents ought to take care of their children.</i>	-	-

Modal verbs and their equivalents	Meaning	Present	Past	Future
<b>need</b>	необходимость совершения действия или отсутствие таковой (в вопросительных и отрицательных предложениях)	<i>Need I stay after classes?</i> <i>You needn't hurry. / You don't need to hurry.</i>	-	-

**b) Find the equivalents of the modal verbs:**

- a) may          b) can          c) must

- This program has failed. You will have to change the program.
- Any firm is able to buy computers.
- The students will be allowed to use dictionaries while writing tests.
- Is the program able to find worms?
- You are not allowed to mix symbols.
- They will have to read a lot on this problem otherwise it is impossible to find a mistake in that program.
- She had to restart the system.
- He will be allowed to take any manual.
- Under these conditions you will not be able to control Windows and will have to reboot the system.

**8. Choose the correct variant.**

- He said that no one but he \_\_\_\_\_ write that program.  
a) can          b) was able to          c) could
- \_\_\_\_\_ I borrow your program disc? – Certainly, you \_\_\_\_\_ .  
a) may          b) might          c) shall be allowed to
- I don't need help. I \_\_\_\_\_ write the program myself.  
a) must          b) had to          c) need
- Mr. Johnson \_\_\_\_\_ analyze stimulus-response robots which have no memory and no logical decision-making in 2 days.  
a) may          b) were allowed to          c) will be allowed to
- Next week we \_\_\_\_\_ install a new operating system.  
a) can          b) will be able to          c) could
- As the program is interrupted by the command, the computer system \_\_\_\_\_ be checked up.  
a) must          b) has to          c) shall have to
- The scientists \_\_\_\_\_ test a new version of a digital computer next week.  
a) may          b) will have to          c) were allowed to
- \_\_\_\_\_ you show the results of testing? – Sure, it is not a problem.  
a) can          b) will be able to          c) have to

9. A year ago we \_\_\_\_\_ start producing computers of a new generation.  
 a) ought to      b) had to      c) shall have to
10. \_\_\_\_\_ I delete this file?  
 a) may      b) might      c) shall be allowed to
11. The conference \_\_\_\_\_ at 9.30.  
 a) can      b) is to      c) has to
12. If you damage someone's property you \_\_\_\_\_ pay compensation. It is the right thing to do.  
 a) ought to      b) are to      c) can

**9. Insert the most suitable modal verbs.**

- a) can      b) must      c) may      d) should

1. The chip \_\_\_\_\_ be used as main memory or as a central processing unit.
2. \_\_\_\_\_ I take your book on programming languages?
3. What \_\_\_\_\_ a robot sense?
4. \_\_\_\_\_ you install Windows operating system?
5. If you want to be a professional programmer you \_\_\_\_\_ read a lot on programming languages.
6. What can I recommend you? Well, you \_\_\_\_\_ change two circuits.
7. The assistant \_\_\_\_\_ finish the experiment because we need the results as soon as possible.
8. \_\_\_\_\_ we use your data on the results of the system analysis?
9. If you \_\_\_\_\_ not open some files, you \_\_\_\_\_ immediately check up the operating system for viruses.

**10. Define active or passive forms.**

1. The system must (*check / be checked*) the file errors.
2. The Windows NT can (*prove / be proved*) to meet the requirements of modern business.
3. This device has to (*support / be supported*) by the operating system.
4. The program should (*define / be defined*) the efficiency of devices.
5. I can (*reach / be reached*) on only on the phone or by e-mail.
6. This programming language must (*define / be defined*) as a low-level language.
7. The model of this generation of computers can (*represent / be represented*) at the World Computers Exhibition next year.
8. You can (*configure / be configured*) Windows NT Explorer to display compressed files in an alternate colour.
9. Although the cost of a byte of storage has declined rapidly, the use of data compression techniques can (*reduce / be reduced*) the effective cost still further by squeezing more data into the same space.

**11. Complete the sentences.**

1. They (могли) \_\_\_\_\_ use a computer to do calculations.

2. (Было позволено) \_\_\_\_\_ you \_\_\_\_\_ operate their new computer?
3. Students (не должны) \_\_\_\_\_ use their notes during the exam.
4. She (пришлось) \_\_\_\_\_ select computer programs.
5. You (следует) \_\_\_\_\_ help your teammate to solve the problem.
6. We (нужно) \_\_\_\_\_ return books to the library on time.
7. You (не нужно) \_\_\_\_\_ do this exercise in writing.
8. University students (должны) \_\_\_\_\_ take exams in January and June.
9. IBM is replacing aluminum with copper in computer chips – up to 200 million transistors (могут) \_\_\_\_\_ be packed onto such a chip.
10. We (можем) \_\_\_\_\_ compress the files using compression algorithms.
11. When determining the set of output codes, we (следует) \_\_\_\_\_ be careful that the coding scheme is unambiguous.
12. Using 8-bit code we (сможем) \_\_\_\_\_ pack only four characters.
13. (Можу) \_\_\_\_\_ I check the presence of the recovery records in the archive using the show archive information command?
14. For more information you (можешь) \_\_\_\_\_ visit WinRAR home page at <http://www.rarsoft.com>.
15. The number of bits per character in the output file (должно было) \_\_\_\_\_ be more than in the input one.
16. You (следует) \_\_\_\_\_ receive a grant from the government for buying new equipment for our research laboratory if you want to finish your investigation in time.
17. An up-to-date model of a robot (может) \_\_\_\_\_ perform various tasks, such as walking, talking, moving different objects from one place to another.
18. Even though hard drive space is becoming increasingly economical, you (следует) \_\_\_\_\_ still use compression wisely.
19. The manager (должен) \_\_\_\_\_ arrive at 11.00.
20. You are wrong. You (следует) \_\_\_\_\_ admit that you made a mistake.

**12. Determine the meaning of the underlined words. Give the index of the corresponding translation.**

1. A version of UNIX called Linux **gained popularity** in the late 1990s for PCs. \_\_\_\_\_
2. Applications software consists of programs that instruct the computer to accomplish specific tasks for the user, such as word processing, operating a spreadsheet, **managing accounts in inventories, record keeping**, or playing a video game. \_\_\_\_\_
3. It may also include **networking services** that allow programs running on one computer to communicate with programs running on another.
4. Database systems often manage huge amounts (many gigabytes) of data in **a secure manner**.

- a) делопроизводство
- b) сетевые услуги
- c) приобрел популярность
- d) безопасный режим
- e) управление учетными записями товарно-материальных запасов

**13. Look through the text and say what types of software are mentioned in it. Read the text for the detailed information about software.**

### **Software**

Two types of software instruct a computer to perform its tasks—systems software and applications software. Systems software is a permanent component of the computer that controls its fundamental functions. Different kinds of applications software are loaded into the computer as needed to perform specific tasks for the user. Applications software requires the functions provided by the systems software.

A computer's operating system (OS) is the *systems software* that allows all the dissimilar hardware and software components to work together. It consists of a set of programs that manages all the computer's resources, including the data in main memory and in auxiliary storage. Parts of an OS may be permanently stored in a computer's ROM.

Drivers are OS programs that manage data from different I/O devices. Drivers understand the differences in the devices and perform the appropriate translations of input and output data.

Computers write data to, and read from, auxiliary storage in collections called files. The file system of an OS allows programs to give names to files, and it keeps track of each file's location. A file system can also group files into directories or folders.

An OS allows programs to run. When a program is running, it is in the process of instructing the computer. An OS manages processes, each of which consists of a running program and the resources that the program requires. An advanced OS supports multiprocessing to enable several programs to run simultaneously. It may also include networking services that allow programs running on one computer to communicate with programs running on another.

Modern operating systems provide a graphical user interface (GUI) to make the applications software easier to use. A GUI allows a computer user to work directly with an application program by manipulating text and graphics on the monitor screen through the keyboard and a pointing device such as a mouse rather than solely through typing instructions on command lines. The Apple Computer company's Macintosh computer, introduced in the mid-1980s, had the first commercially successful GUI-based software.

Another example of systems software is a database system. A database system works with the file system and includes programs that allow multiple users to access the files concurrently. Database systems often manage huge amounts (many gigabytes) of data in a secure manner.

Computers that use disk memory-storage systems are said to have disk operating systems (DOS). Popular operating systems for PCs are MS-DOS and Windows, developed by the Microsoft Corporation in the early 1980s and 1990s, respectively. Workstations, servers, and some mainframe computers often use the UNIX OS originally designed by Bell Laboratories in the late 1960s. A version of UNIX called Linux gained popularity in the late 1990s for PCs.

Applications software consists of programs that instruct the computer to accomplish specific tasks for the user, such as word processing, operating a spreadsheet, managing accounts in inventories, record keeping, or playing a video game. These programs, called applications, are run only when they are needed. The number of available applications is as great as the number of different uses of computers.



**14. Find in the text English equivalents for the following Russian words and word combinations.**

Состоять из, управлять текстом и графикой на экране при помощи клавиатуры; вводить инструкции в командную строку; в безопасном режиме; в начале 1980-х; в конце 1990-х.

**15. Express your agreement or disagreement with the following statements. Give your grounds.**

1. Word processor is a kind of systems software.
2. Systems software and applications software instruct a computer to perform its tasks.
3. An OS is the applications software that allows all the hardware and software components to work together.
4. Drivers are OS programs that manage data from different I/O devices.
5. Files are collections of auxiliary storage where data is written to and read from.
6. A GUI allows a user to work with the monitor screen.
7. Database systems and operating systems are examples of the systems software.
8. The keyboard is a pointing device.
9. MS-DOS and Windows were developed by the Apple Computer company.

**16. Complete the sentences according to the text.**

1. There are two types of software ....
2. Systems software is ....
3. Systems software is represented by ....
4. The function of drivers is ....
5. An OS manages processes consisting of ....
6. An advanced OS supports ....
7. Operating systems provide ....
8. The first commercially successful GUI-based software was incorporated into ....
9. Applications are programs ....

**17. Ask your groupmates and let them answer:**

- a) what operating system they use and why they prefer it;
- b) about the function of a graphical user interface;
- c) if they know which type of memory stores parts of an operating system;
- d) what applications software they use most often and what for;
- e) to explain what the concept "multiprocessing" means.
- f) what facts about software history they know.

**18. What was earlier:**

the invention of flash memory

the development of Linux

- the introduction of the first GUI-based software       the development of Windows
- the invention of the keyboard       the invention of the mouse
- the development of the UNIX OS       the development of MS-DOS

**19. Discuss in pairs and**

- a) explain the difference between systems software and applications software;
- b) explain the difference between an operating system and a database system;
- c) speak about types of operating systems;
- d) speak about drivers;
- e) speak about the file system of an operating system and its functions.

**20. Describe operating systems used nowadays.**

**Compare Linux and Windows in terms of their merits and shortcomings.**

**Consider the following points:**

- a) full access / no access;
- b) licensing freedom / restrictions;
- c) online peer support / paid-desk support;
- d) flexibility / rigidity;
- e) ease of usage;
- f) command line / no command line;
- g) centralized / noncentralized application installation;
- h) automated / nonautomated removable media;
- i) multilayered run levels / single-layered run level.

**21. What do you think is more expensive – hardware or software? Has anyone in your group ever purchased software? Why do you think piracy (audio, video, and computer software) still exists? Is it possible to stop software piracy on the Internet? Share your ideas on the topic in an essay of 120-150 words.**

## Unit 10

**Grammar:      Introductory It**  
**Oral Topic:    Programming**

### Lexical and Grammar Exercises

**1. Learn the active vocabulary.**

**1). profit** ['prɒfɪt] – *прибыль, выгода, полезность, польза*

Individual programmers can work for profit. We should be able to sell our software at a

profit. The CD generated record profits.

*Syn. benefit*

**2). be responsible for** [rɪ'spɒn(t)səbl] – *быть ответственным за что-л.*

Individual programmers are solely responsible for an entire project. We are all equally responsible for the project success. Who was responsible for the mistake?

**3). algorithm** [ˈælg(ə)rɪð(ə)m] – *алгоритм*

An algorithm is a series of mathematical steps, especially in a computer programme, which will give you the answer to a particular kind of problem or question. Computer programs consist of data structures and algorithms.

**4). sequence** [ˈsi:kwən(t)s] – *последовательность; ряд; очерёдность, порядок*

Algorithms are the sequences of steps that a program follows to process the information. Put these numbers into the correct sequence. The computer generates a random sequence of numbers.

*Syn. series*

**5). specifications** (спецс) [ˌspesəfɪ'keɪʃ(ə)nz] - *спецификация; технические условия; технические требования*

Create the software's specifications, a detailed description of the required tasks and how the programs will instruct the computer to perform those tasks.

**6). flowchart** [ˈfləʊtʃɑ:t] - *блок-схема, структурная схема; схема технологического процесса; технологическая карта*

Flowchart is a diagram representing the sequence of logical steps required to solve a problem. The software specifications often contain diagrams known as flowcharts. Use online flowchart software to create flowcharts, diagrams and more.

**7). to encode** [ɪn'kəʊd ], [en-] - *кодировать, шифровать*

The code is the program instructions encoded in a particular programming language. We compared the human mind to a computer which actively seeks information to process, encodes it and stores it for future use.

*Syn. to code, to encipher*

**8). to submit** [səb'mɪt] - *представлять, подавать*

The program is submitted for alpha testing, in which individuals within the company independently test the program. Completed projects must be submitted by 10 March.

**9). to eliminate** [ɪ'lɪmɪneɪt] - *устранять, исключать, уничтожать, ликвидировать*

The goal is to develop a better way of eliminating bugs and vulnerabilities (уязвимость). Credit cards eliminate the need to carry a lot of cash. This procedure does not completely eliminate the possibility of an accident. This page contains step by step instructions on how to remove viruses from your computer.

*Syn. to remove, to expel, to eradicate*

**10). to debug** [ˌdi:'bʌg] - *отлаживать (программу)*

The program is debugged to eliminate programming mistakes, which are commonly called bugs. A programming tool (инструментальное программное средство) is a computer program that software developers use to create, debug, maintain, or otherwise support other programs and applications.

**11). to release** [rɪ'li:s] - *выпускать (версию продукта)*

The product is released for use or for sale after it has passed all its tests. He's planning to release a new programme. The game was originally released in 2002.

**12). to verify** ['verɪfaɪ] - *подтверждать; проверять, контролировать*

If the product has been verified to meet all its requirements, it is released. Please verify that there is sufficient memory available before loading the program. Please verify that your password was entered correctly.

*Syn. to check, to confirm, to examine*

**13). to proceed** [prə'si:d] - *развиваться, протекать (о процессе)*

These steps rarely proceed in a linear fashion. As software design and development proceed, the design elements and the actual code must meet the requirements that define them. Does the software developer present a clear plan of how the process will proceed?

*Syn. to go on*

**14). to fail** [feɪl] - *потерпеть неудачу; не иметь успеха*

If the software fails its alpha or beta tests, the programmers will have to go back to an earlier step. She failed to get into Brest State Technical University. I failed my English test the first time I took it.

*Ant. to pass (a test, an exam)*

## **2. Give English equivalents for the words in brackets.**

1. The content of the programme should follow a logical (последовательность) \_\_\_\_\_.
2. The programme has been developed exactly to our (технические требования) \_\_\_\_\_.
3. It was impossible (подтверждать) to \_\_\_\_\_ her statement.
4. The game is due to be (выпускать) \_\_\_\_\_ in time for Christmas.
5. You must must (предоставлять) \_\_\_\_\_ applications before 31 January.
6. They cannot (устранять) \_\_\_\_\_ risk altogether.
7. She's been hired to write and (отлаживать) \_\_\_\_\_ computer programs.
8. Credit cards are (кодировать) \_\_\_\_\_ with cardholder information.

## **3. Replace the following by one word.**

1. A detailed description of how something is, or should be, designed or made. \_\_\_\_\_
2. A diagram that shows the connections between the different stages of a process or parts of a system. \_\_\_\_\_
3. A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer. \_\_\_\_\_
4. A financial gain. \_\_\_\_\_
5. To identify and remove errors from (computer hardware or software). \_\_\_\_\_
6. To make a film, recording, or programme available to the public. \_\_\_\_\_
7. To be unable to meet the standards set by a test of quality or eligibility. \_\_\_\_\_
8. To make sure or demonstrate that something is true, accurate, or justified. \_\_\_\_\_

## **4. Fill in the blanks with the words from the active vocabulary.**

1. A \_\_\_\_\_ shows how an input becomes an output.
2. The programme has been designed exactly to customers' \_\_\_\_\_.
3. If debugging is the process of \_\_\_\_\_ bugs, then programming must be the process

of putting them in.

4. Please \_\_\_\_\_ your username and password to access this page.

5. Hardware design and development \_\_\_\_\_ parallel with algorithm specification and coding.

6. How do you troubleshoot when the software installation \_\_\_\_\_ and the error message is not clear enough for you to debug the problem?

7. LabVIEW (graphical programming language) was originally \_\_\_\_\_ for the Apple Macintosh in 1986.

8. An algorithm specifies the \_\_\_\_\_ of steps that the program must take to complete the work.

9. Candidates for the degree are required to \_\_\_\_\_ a 30,000-word thesis.

**5. Match the pairs of the words with similar meaning.**

1. to eliminate	a) to go on
2. to proceed	b) to confirm
3. sequence	c) to get rid of
4. to verify	d) to encipher
5. to encode	e) series

**6. Match the pairs of the words with opposite meaning.**

1. to pass	a) to create
2. to eliminate	b) loss
3. to encode	c) to fail
4. profit	d) to decipher

**7. Study the following table:**

<b>We use introductory <i>it</i> as a dummy subject:</b>
<ul style="list-style-type: none"> <li>to talk about <b>times and dates</b>: <i>It's nearly one o'clock. It's my birthday.</i></li> </ul>
<ul style="list-style-type: none"> <li>to talk about <b>weather/environment</b>: <i>It's raining. It's a lovely day. It was getting cold.</i></li> </ul>
<ul style="list-style-type: none"> <li>to give an <b>opinion about a place</b>: <i>It's very cold in here. It will be nice when we get home. It's very comfortable in my new apartment.</i></li> </ul>
<ul style="list-style-type: none"> <li>to give an <b>opinion</b> followed by <b>to-infinitive</b>: <i>It's great to see the incredible photos and videos you took on the camera up on a large screen. It will be great to go on holiday. It was nice to use some hardware like HAVA Platinum HD.</i></li> </ul>
<ul style="list-style-type: none"> <li>to give an <b>opinion</b> followed by an <b>-ing verb</b>: <i>It's great living in Spain. It's awful driving in this heavy traffic. It can be hard work looking after young children.</i></li> </ul>
<ul style="list-style-type: none"> <li>We use <b>it</b> to talk about <b>ourselves</b> on the telephone: <i>Hello. It's George.</i></li> </ul>
<ul style="list-style-type: none"> <li>We use <b>it</b> to talk about <b>ourselves</b> when people cannot see us: <i>[Mary knocks on door] It's me. It's Mary.</i></li> </ul>

• We use **it** to talk about **other people** when we point them out for the first time:  
Look. **It's** Sir Paul McCartney.  
*Who's that? I think it's John's brother.*

• when we cannot see them and we ask them for their name:  
*[telephone rings, we pick it up] Hello. Who is it?*  
*[someone knocks on door. We say:] Who is it?*

### **8. Rewrite the following sentences using 'introductory it'.**

*Learning English is hard. – It is hard learning English.*  
*To learn English is hard. – It is hard to learn English.*

1. To make computer education fun and interactive is easy. 2. To understand the lecture was difficult. 3. Making simple and fun games is possible. 4. To add or change requirements later in software development process is difficult. 5. Providing input to the computer in such instances is not practical. 6. In many cases, to download an entire application was not desirable. 7. If the language becomes popular, writing compilers for it is important. 8. To number all the resources in a distributed system is not feasible. 9. Designing data structures and database management systems that supported the automatic linkage of files was natural. 10. To become a programmer was his life-long ambition. 11. Transmitting textual messages is easy.

### **9. Choose the correct subject, 'it' or 'there' (revise the use of introductory 'there' as a dummy subject studied in Unit 2) to complete each sentence.**

1. In 1953 ... were only about 100 computers in use in the entire world. 2. ... is Bill Gates who has changed the way we store, manage, exchange and secure our data. 3. Those pictures were taken with a camera phone while ... was raining! 4. ... was half past four. 5. ... are two fundamentally different types of computers— analog and digital. 6. During the last 10 years ... has been made significant progress in design of miniature instruments for measuring conductivity, temperature, pressure and light intensity. 7. ... is difficult to imagine modern life without a computer. 8. However, although personal computers are designed as single-user systems, ... is common to link them together to form a network. 9. The transmission is sent at the same rate, even when ... is nothing to transmit. 10. ... is difficult to establish whether this problem can be solved at all. 11. This very impressive program is worth exploring in depth, and ... is plenty to explore. 12. ... weren't any PCs in the 19th century. 13. ... are situations where ... is desirable to have a printed copy of data outputted to a terminal. 14. ... is very common to use bar-code readers in conjunction with point-of-sale devices. 15. ... is much to learn before a beginner can become an expert. 16. ... is nothing for hackers to steal from a server.

### **10. Translate from Russian into English using 'it' and 'there' as dummy subjects:**

1. Существует два основных типа программного обеспечения: системное и прикладное. Кроме системного и прикладного ПО существует еще третий вид программного обеспечения. Он называется системами программирования (СП). 2. Было трудно найти подходящее программное обеспечение. 3. Необходимо определить, где на жестком диске находится файл, в котором хранится запись. 4. Существует множество прикладных

программ специального назначения для профессиональной деятельности. 5. Решить эту задачу достаточно легко. 6. Стоит прочитать статью "Программирование – это вторая грамотность", в которой описывается применение компьютера в обучении. 7. Было полезно прочитать статью о типах программного обеспечения. 8. Сначала необходимо продумать соответствующий алгоритм, определить структуры данных, объекты и взаимодействие между ними. 9. Всего существует несколько сотен редакторов текстов, от самых простых до весьма мощных и сложных. 10. На стадии разработки архитектуры полезно отказаться от излишних и слишком громоздких функций. 11. Было довольно интересно посетить лекцию об инструментальных средствах разработки программ.

**11. a) Work in pairs. Read the title of the text. Before reading the text, think of some questions you would like to find answers to regarding the topic.**

**b) Read the text. Does it answer your questions?**

### **Programming**

Software is written by professionals known as computer programmers. Most programmers in large corporations work in teams, with each person focusing on a specific aspect of the total project. Individual programmers can work for profit, as a hobby, or as students, and they are solely responsible for an entire project.

Computer programs consist of data structures and algorithms. Data structures represent the information that the program processes. Algorithms are the sequences of steps that a program follows to process the information. Generally, programmers create software by using the following development process:

(1) Understand the software's requirements, which are the description of what the software is supposed to do.

(2) Create the software's specifications, a detailed description of the required tasks and how the programs will instruct the computer to perform those tasks. The software specifications often contain diagrams known as flowcharts that show the various modules of the programs, the order of the computer's actions, and the data flow among the modules.

(3) Write the code—the program instructions encoded in a particular programming language.

(4) Test the software to see if it works according to the specifications and possibly submit the program for alpha testing, in which other individuals within the company independently test the program.

(5) Debug the program to eliminate programming mistakes, which are commonly called bugs.

(6) Submit the program for beta testing, in which users test the program extensively under real-life conditions to see whether it performs correctly.

(7) Release the product for use or for sale after it has passed all its tests and has been verified to meet all its requirements.

These steps rarely proceed in a linear fashion. Programmers often go back and forth between steps 3, 4, and 5. If the software fails its alpha or beta tests, the programmers will have to go back to an earlier step.

**12. Express your agreement or disagreement with the following statements.**

1. Software is written by computer programmers.
2. Individual programmers are solely responsible for an entire project.
3. Each programmer, working for a large corporation, focuses on the total project.
4. Data structures and algorithms constitute computer programs.
5. An algorithm is the information processed by the program.
6. The sequences of steps, followed by a program to process the information, are called data structures.
7. The software's specs are the program instructions encoded in a particular programming language.
8. Flowcharts show the various modules of the programs, the sequence of the computer's actions, and the data flow among the modules.
9. Beta testing takes place at the developer's site by the internal teams.
10. Programming mistakes are commonly called bugs.
11. If the product has passed all its tests and meets all its requirements, it can be released for use or for sale.

**13. Complete the following sentences according to the text.**

- 1). Software is written by ... .
- 2). Programmers can work for ... or as ... .
- 3). Computer programs are made up of ... .
- 4). The software's requirements are ... .
- 5). Flowcharts show ... .
- 6). The code is ... .
- 7). Testing software includes ... .
- 8). Debugging means ... .
- 9). The product can be released when ... .

**14. Ask your groupmates and let them answer:**

1. who writes software;
2. what steps of software development they know;
3. about the difference between alpha and beta testing;
4. about the application of flowcharts;
5. what the term "debugging" means;
6. when the product is ready for use or for sale;
7. why programmers often go back and forth between software development steps.

**15. Do the research on the Internet to get some additional information about software development steps. Make a presentation using visual aids. The box below can help you make a good presentation.**

The sentences and phrases below follow the logical progression of a well-balanced presentation.
---

<b>Welcoming</b>
------------------

- |   |
|---|
| <ul style="list-style-type: none"><li>▪ <i>Good morning and welcome to [name of company, name of conference hall, hotel, etc.].</i></li></ul> |
|---|



▪ Thank you all very much for coming today.
▪ I hope you all had a pleasant journey here today.
<b>Introducing yourself</b>
▪ My name is Mark Watson from [name of university] ... .
▪ Let me introduce myself; my name is Mark Watson from... .
<b>Introducing your presentation</b>
▪ The purpose of today's presentation is to ... .
▪ The purpose of my presentation today is to ... .
▪ In today's presentation I'd like to ... show you ... / explain to you how ... .
▪ In today's presentation I'm hoping to ... give you an update on... / give you an overview of ... .
▪ In today's presentation I'm planning to ... look at ... / explain ... .
<b>You can also outline your presentation to give the audience a clear overview of what they can expect:</b>
▪ In today's presentation I'm hoping to cover three points:
▪ firstly, ... , after that we will look at ... , and finally I'll ... .
▪ In today's presentation I'd like to cover three points:
▪ firstly, ... , secondly ... , and finally ... .
<b>Starting the presentation</b>
▪ To begin with ... .
▪ To start with ... .
▪ Let's start/begin by looking at ... .
▪ I'd like to start by looking at ... .
<b>Closing a section of the presentation</b>
▪ So, that's an overview of ... .
▪ I think that just about covers ... .
<b>Beginning a new section of the presentation</b>
▪ Now let's move on to ... .
▪ Now let's take a look at ... .
▪ Now I'd like to move on to ... .
▪ Next I'd like to take a look at ... .
▪ Moving on to the next part, I'd like to ... .
▪ Moving on to the next section, let's take a look at ... .
<b>Concluding and summarising the presentation</b>
▪ Well, that brings us to the end of the final section. Now, I'd like to summarise by ... .
▪ That brings us to the end of the final section. Now, if I can just summarise the main points again.
▪ That concludes my presentation. Now, if I can just summarise the main points.
▪ That's an overview of ... . Now, just to summarise, let's quickly look at the main points again.
<b>Finishing and thanking</b>
▪ Thank you for your attention.
▪ That brings the presentation to an end.

- |  |
|--|
| ▪ <i>That brings us to the end of my presentation.</i>                         |
| ▪ <i>Finally, I'd like to finish by thanking you (all) for your attention.</i> |
| ▪ <i>Finally, I'd like to end by thanking you (all) for coming today.</i>      |
| ▪ <i>I'd like to thank you (all) for your attention and interest.</i>          |

<b><i>Inviting questions</i></b>
----------------------------------

- |   |
|---|
| ▪ <i>If anyone has any questions, I'll be pleased to answer them.</i>                             |
| ▪ <i>If anyone has any questions, I'll do my best to answer them.</i>                             |
| ▪ <i>If anyone has any questions, please feel free to ask them now.</i>                           |
| ▪ <i>If anyone has any questions, please feel free to ask them and I'll do my best to answer.</i> |

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**Пособие**  
**по развитию основных видов речевой деятельности**  
**на английском языке**  
**для студентов специальностей ФЭИС**  
**дневной и вечерней форм обучения**

**ENGLISH 4 IT**

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