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«Смоленская академия профессионального образования»

Учебно-методическое пособие  
по дисциплине Иностранный язык (английский)  
для студентов 2 курса  
специальности 09.02.03 Программирование в компьютерных системах

Смоленск 2016

Учебно-методическое пособие для самостоятельной и аудиторной работы по дисциплине «Иностранный язык (английский)» для студентов 2 курса специальности 09.02.03 Программирование в компьютерных системах  
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Основная цель пособия заключается в развитии умений речевого профессионального общения на английском языке. В пособии представлены аутентичные тексты, которые углубляют знания обучающихся по указанной специальности, знакомят их с современным английским языком. Система заданий и упражнений направлена на активное усвоение лексики, развитие речевых навыков и умений, формирование коммуникативной компетенции в речевом профессиональном общении.

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## Computers today

### The digital age

#### I. Read and pronounce correctly.

**digital** (adj) - ['dɪdʒɪt(ə)l]

**age** (n) - [eɪdʒ]

**interactive** (adj) - [ˌɪntə'ræktɪv]

**communicate** (v) - [kə'mju:nɪkeɪt]

**projector** (n) - [prə'dʒektə]

**verify** (v) - ['verɪfaɪ]

**consumption** (n) - [kən'sʌmpʃ(ə)n]

**availability** (n) - [ə'veɪlə'bɪlɪtɪ]

#### II. Read and translate the text using a dictionary.

We are now living in what some people call the digital age, meaning that computers have become an essential part of our lives. Young people who have grown up with PCs and mobile phones are often called the digital generation. Computers help students to perform mathematical operations and improve their maths skills. They are used to access the Internet, to do basic research and to communicate with other students around the world. Teachers use projectors and interactive whiteboards to give presentations and teach sciences, history or language courses. PCs are also used for administrative purposes – schools use word processors to write letters, and databases to keep records of students and teachers. A school website allows teachers to publish exercises for students to complete online. Students can also enroll for courses via the website and parents can download official reports.

Mobiles let you make voice calls, send texts, email people and download logos, ringtones or games. With a built-in camera you can send pictures and make video calls in face-to-face mode. New smartphones combine a telephone with web access, video, a games console, an MP3 player, a personal digital assistant (PDA) and a GPS navigation system, all in one.

In banks, computers store information about the money held by each customer and enable staff to access large databases and to carry out financial transactions at high speed. They also control the cashpoints, or ATMs (automatic teller machines), which dispense money to customers by the use of a PIN-protected code. People use a Chip and PIN card to pay for goods and services. Instead of using a signature to verify payments, customers are asked to enter a four-digit personal identification number (PIN), the same number used at cashpoints; this system makes transactions more secure. With online banking, clients can easily pay bills and transfer money from the comfort of their homes.

Airline pilots use computers to help them control the plane. For example, monitors display data about fuel consumption and weather conditions. In airport control towers, computers are used to manage radar systems and regulate air traffic. On the ground, airlines are connected to travel agencies by computer. Travel agents use computers to find out about availability of flights, prices, times, stopovers and many other details.

#### III. Find the English equivalent of the following words in the text.

век цифровых технологий

выполнять операции

получить доступ к интернету

проводить исследования

показывать презентации

база данных

вести записи

завершить, закончить

скачивать

звонить

отправлять сообщения

встроенная камера

хранить информацию

выдавать деньги

вводить

показывать данные

**IV. Find the words (1-10) in the text above. Match the words with the correct meanings.**

- |                   |  |
|-------------------|--|
| 1. perform        | a. keep, save                          |
| 2. word processor | b. execute, do                         |
| 3. online         | c. screen                              |
| 4. download       | d. connected to Internet               |
| 5. store          | e. program used for text manipulation  |
| 6. monitor        | f. collection of facts or figures      |
| 7. data           | g. copy files from a server to your PC |

**V. Use collocations from the text and complete sentences.**

1. Thanks to Wi-Fi, it's now easy to ... from cafes, hotels, parks and many other public places.
2. Online banking lets you ... between your accounts easily and securely.
3. Skype is a technology that enables users to ... over the Internet for free.
4. In many universities, students are encouraged to ... using PowerPoint in order to make their talks more visually attractive.
5. The Web has revolutionized the way people ... - with sites such as Google and Wikipedia, you can find the information you need in seconds.
6. With the latest mobile phones, you can ... with multimedia attachments – pictures, audio, even video.

**VI. Match the places (1-5) with the computer uses (a-e).**

- |              |   |
|--------------|---|
| 1. banks     | a. control machines                         |
| 2. factories | b. calculate the bill                       |
| 3. homes     | c. look after patient records and medicines |
| 4. hospitals | d. provide entertainment and information    |
| 5. shops     | e. control our money                        |

**VII. Listen to four people talking about how they use computers at work.**

electrical engineer	secretary	librarian	composer
---------------------	-----------	-----------	----------

**VIII. Find the verbs in the text in the form of the Present Indefinite (Simple) tense and make up questions to these sentences.**

**IX. Describe how you use computers in your study and in our free time.**

# What is a computer?

## I. Read and pronounce correctly.

**hardware** (n) - ['hɑ:dwɛə]

**execute** (v) - ['ɛksɪkjʊ:t]

**device** (n) - [dɪ'vaɪs]

**storage** (n) - ['stɔ:ɹɪdʒ]

**rear** (adj) - [rɪə]

**peripheral** (n) - [pə'rɪf(ə)rəl]

## II. Read and translate the text using a dictionary.

A computer is an electronic machine which can accept data in a certain form, process the data, and give the results of the processing in a specified format as information.

First, data is fed into the computer's memory. Then, when the program is run, the computer performs a set of instructions and processes the data. Finally, we can see the results on the screen or in printed form.

A computer system consists of two parts: hardware and software. Hardware is any electronic or mechanical part you can see or touch. Software is a set of instructions, called a program, which tells the computer what to do. There are three basic hardware sections: the central processing unit (CPU), main memory and peripherals.

Perhaps the most influential component is the central processing unit. Its function is to execute program instructions and coordinate the activities of all the other units. In a way, it is the 'brain' of the computer. The main memory holds the instructions and data which are being processed by the CPU. Peripherals are the physical units attached to the computer. They include storage devices and input/output devices.

Storage devices (hard drives, DVD drives or flash drives) provide a permanent storage of both data and programs. Disk drives are used to read and write data on disks. Input devices enable data to go into the computer's memory. The most common input devices are the mouse and the keyboard. Output devices enable us to extract the finished product from the system. For example, the computer shows the output on the monitor or prints the results onto paper by means of a printer.

On the rear panel of the computer there are several ports into which we can plug a wide range of peripherals – a modem, a digital camera, a scanner, etc. They allow communication between the computer and the devices. Modern desktop PCs have USB ports and memory card readers on the front panel.

## III. Find the English equivalent of the following words in the text.

обрабатывать

оборудование

программное обеспечение

центральный процессор

главная память

внешнее устройство

выполнять

запоминающее устройство

дисковод

устройство ввода

мышь

клавиатура

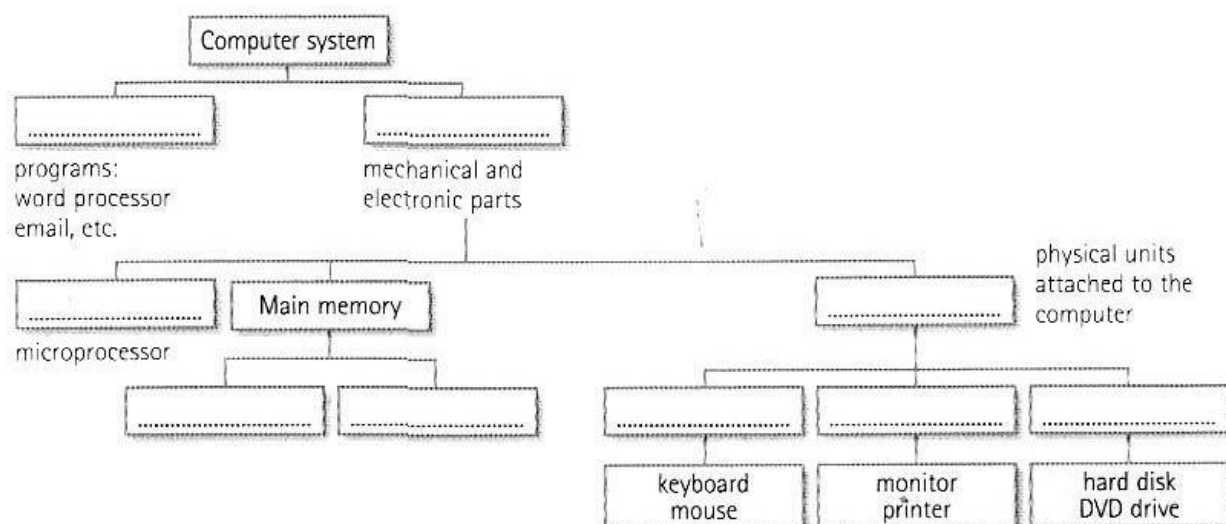
устройство вывода

монитор

принтер

сканер

**IV. Label this diagram with the correct terms.**



**V. Match these words from the text (1-9) with the correct meanings (a-i).**

- |                                  |  |
|----------------------------------|--|
| 1. software                      | a. the brain of the computer   |
| 2. peripherals                   | b. physical parts that make up a computer system                             |
| 3. main memory                   | c. programs which can be used on a particular computer system                |
| 4. hard drive                    | d. the information which is presented to the computer                        |
| 5. hardware                      | e. results produced by a computer  |
| 6. input                         | f. input devices attached to the CPU   |
| 7. ports                         | g. section that holds programs and data while they are executed or processed |
| 8. output                        | h. magnetic device used to store information                                 |
| 9. central processing unit (CPU) | i. sockets into which an external device may be connected                    |

**VI. Find the nouns in the text and decide whether these nouns are countable or uncountable.**

**VII. Translate the sentences into English.**

1. Мы вводим данные в компьютер при помощи клавиатуры, мыши или сканера.
2. Компьютер – это электронное устройство, которое получает, обрабатывает и хранит информацию.
3. Запоминающие устройства используются для хранения информации.
4. Компьютеры позволяют нам выполнять различные математические операции.
5. Современные телефоны позволяют нам делать видео звонки и отправлять фотографии.
6. В наше время мы можем получить доступ в интернет из кафе, ресторана или других общественных мест.
7. Вебсайты позволяют студентам скачивать необходимые задания и упражнения.

**VIII. Retell the text.**

## Types of computer systems

### I. Read and pronounce correctly.

**multiple** (adj) - ['mʌltɪp(ə)l]

**simultaneous** (adj) - [sɪm(ə)l'teɪnɪəs]

**design** (v) - [dɪ'zaɪn]

**capacity** (n) - [kə'pæsɪtɪ]

**lightweight** (adj) - ['laɪtweɪt]

**stylus** (n) - ['stɑɪləs]

**wearable** (adj) - ['weɪ(ə)rəb(ə)l]

### II. Read and translate the text using a dictionary.

#### From mainframes to wearable computers



A **mainframe** is the most powerful type of computer. It can process and store large amounts of data. It supports multiple users at the same time and can support more simultaneous processes than a PC. The central system is a large server connected to hundreds of terminals over a network. Mainframes are used for large-scale computing purposes in banks, big companies and universities.



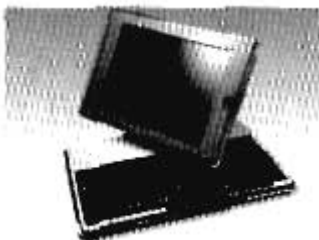
A **desktop PC** has its own processing unit (or CPU), monitor and keyboard. It is used as a personal computer in the home or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh. It's designed to be placed on your desk. Some models have a vertical case called a tower.



A **laptop** (also called a notebook PC) is a lightweight computer that you can transport easily. It can work as fast as a desktop PC, with similar processors, memory capacity, and disk drives, but it is portable and has a smaller screen. Modern notebooks have a TFT (Thin Film Transistor) screen that produces very sharp images.

Instead of mouse, they have a touchpad built into the keyboard – sensitive pad that you can touch to move the pointer on the screen.

They offer a lot of connectivity options: USB ( Universal Serial Bus) ports for connecting peripherals, slots for memory cards, etc. They come with battery packs, which let you use the computer when there are no electrical outlets available.



A **tablet PC** looks like a book, with an LCD screen on which you can write using a special digital pen. You can fold and rotate the screen 180 degrees. Your handwriting can be recognized and converted into editable text. You can also type at the detached keyboard or use voice recognition. It's mobile and versatile.



A **personal digital assistant** or **PDA** is a tiny computer which can be held in one hand. The term PDA refers to a wide variety of handheld devices, palmtops and pocket PCs.



For input, you type at a small keyboard or use a stylus – special pen used with a touch screen to select items, draw pictures, etc. Some models incorporate handwriting recognition, which enables a PDA to recognize characters written by hand. Some PDAs recognize spoken words by using voice recognition software.

They can be used as mobile phones or as personal organizers for storing notes, reminders and addresses. They also let you access the Internet via wireless technology, without cables.

A wearable computer runs on batteries and is worn on the user's body, e.g. on a belt, backpack or vest; it is designed for mobile or hands-free operation. Some devices are equipped with a wireless modem, a small keyboard and a screen; others are voice-activated and can access email and voice mail.

### III. Find the English equivalent of the following words in the text.

большой универсальный компьютер  
настольный ПК  
ноутбук, нетбук  
емкость памяти  
экран  
четкое изображение  
сенсорная панель, тачпад  
аккумулятор  
планшетный ПК

карманный компьютер  
портативный  
стилус  
сенсорный экран  
распознавание рукописного текста  
распознавание голоса  
миниатюрный компьютер  
беспроводной


### IV. Which type of computer do these descriptions refer to?

1. a hand-held computer which can be used as a telephone, a web explorer and a personal organizer
2. a typical computer found in many businesses and popular for home use
3. a large computer used for intensive data processing and often linked to many terminals
4. a small computer that fits into items of clothing
5. a portable computer that can be closed up like a briefcase, but it can be as powerful as a desktop PC
6. a full-function PC, though it only weighs 1.2 kg – you can go to a meeting and write you notes on it, like a paper notepad; its screen mode can be changed from portrait to landscape

### V. Look at the computer advertisement and find this information.

**Toshiba Satellite**

- Intel Centrino processor
- 1,024 MB RAM, 100 GB hard disk drive
- DVD SuperMulti (+/-R double layer) drive
- 15.4" widescreen TFT active-matrix LCD display
- 85-key keyboard and touchpad
- 2 memory slots, 1 PC Card or PCMCIA slot
- Wireless communications: Wi-Fi compliancy and Bluetooth
- 4 USB ports for connecting peripherals: digital camera, MP3 player, modem, etc.
- 6-cell rechargeable Lithium-ion battery pack



1. What type of computer is advertised?
2. What kind of screen does it have?
3. What pointing device replaces the mouse?


4. What types of ports does it have for connecting cameras and music players?
5. What sorts of power supply does it have?

**VI. Choose the correct adjective. Then fill in the gaps with the correct form of the adjective.**


1. *light/heavy* Laptops are ... than desktop computers but ... than notebooks.
2. *large/small* The mainframe is the ... type of computer. A minicomputer is ... than a microcomputer.
3. *common/good* Personal computers are ... than mainframes but mainframes are ... than personal computers at processing very large amounts of data.
4. *powerful/expensive* Minicomputers are ... than mainframes but they are also ...
5. *fast/cheap* New computers are ... and sometimes ... than older machines.
6. *powerful/expensive* Laptops are often ... than PCs but they are not as ...

**VII. Listen and label the pictures (a-e) with words from the box.**


laptop	desktop PC	PDA	mainframe	tablet PC
--------	------------	-----	-----------	-----------




a \_\_\_\_\_




b \_\_\_\_\_



c \_\_\_\_\_



d \_\_\_\_\_



e \_\_\_\_\_

**VIII. Listen again and decide whether these sentences are true or false. Correct the false ones.**

1. A mainframe is less powerful than a PC.
2. A mainframe is used by large organizations that need to process enormous amounts of data.
3. The most suitable computers for home use are desktop PCs.
4. A laptop is not portable.
5. Laptops are not as powerful as desktop PCs.
6. Using a stylus, you can write directly onto the screen of a tablet PC.
7. A Personal Digital Assistant is small enough to fit into the palm of your hand.
8. A PDA does not allow you to surf the Web.

**IX. Give a summary of the text (8-10 sentences). Use some words and expressions:**

1. This text is about ...
2. The text contains the description of ...
3. The main idea of the text is ...
4. In my opinion
5. It should be noted ...
6. In conclusion ...
7. To sum up ...

## What is inside a PC system?

### I. Read and pronounce correctly.

**integrated** (adj) - ['ɪntɪɡreɪtɪd]

**circuit** (n) - ['sɜ:kɪt]

**register** (n) - ['redʒɪstə]

**interval** (n) - ['ɪntəv(ə)l]

**volatile** (adj) - ['vɒlətaɪl]

**expansion** (n) - [ɪk'spænf(ə)n]

**silicon** (n) - ['sɪlɪkən]

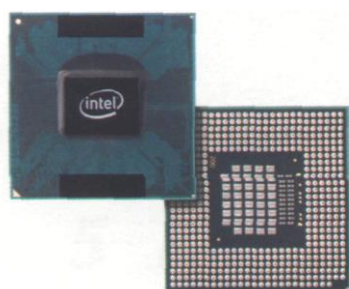
### II. Read and translate the text using a dictionary.

#### Processing

The nerve centre of a PC is the processor, also called the CPU, or central processing unit. This is built into a single chip which executes program instructions and coordinates the activities that take place within the computer system. The chip itself is a small piece of silicon with a complex electrical circuit called an **integrated circuit**.

The processor consists of three main parts:

- The *control unit* examines the instructions in the user's program, interprets each instruction and causes the circuits and the rest of the components – monitor, disk drives, etc. – to execute the functions specified.
- The *arithmetic logic unit* (ALU) performs mathematical calculations and logical operations.
- The *registers* are high-speed units of memory used to store and control data. One of the registers keeps track of the next instruction to be performed in the main memory. The other holds the instruction that is being executed.



The Intel Core 2 Duo processor; other chip manufacturers are AMD and Motorola

The power and performance of a computer is partly determined by the speed of its processor. A **system clock** sends out signals at fixed intervals **to measure** and synchronize the flow data. **Clock speed** is measured in gigahertz (GHz). For example, a CPU running at 4GHz (four thousand million hertz, or cycles, per second) will enable your PC to handle the most demanding applications.

#### RAM and ROM

The programs and data which pass through the processor must be loaded into the main memory in order to be processed. Therefore, when the user runs a program, the CPU looks for it on the hard disk and transfers a copy into the **RAM** chips. RAM (**random access memory**) is **volatile** – that is, its information is lost when the computer is turned off. However, **ROM** (**read only memory**) is non-volatile, containing instructions and routines for the basic operations of the CPU. The **BIOS** (**basic input/output system**) uses ROM to control communication with peripherals.

RAM capacity can be **expanded** by adding extra chips, usually contained in small circuit boards called dual in-line memory modules (**DIMMs**).

#### Buses and cards

The main circuit board inside your system is called the **motherboard** and contains the processor, the memory chips, expansions slots, and controllers for peripherals, **connected by buses** – electrical channels which allow devices inside the computer to communicate with each other. For example, the front side bus carries all data that passes from the CPU to other devices.

The size of a **bus**, called **bus width**, determines how much data can be transmitted. It can be compared to the number of lanes on a motorway – the larger the width, the more data can travel along the bus. For example, a 64-bit bus can transmit 64 bits of data.

**Expansion slots** allow users to **install expansion cards**, adding features like sound, memory and network capabilities.

### III. Read and learn the vocabulary.

**an integrated circuit** – интегральная схема

**to consist of** – состоять из

**a system clock** – системные часы

**to measure** - измерять

**clock speed** – частота

**RAM (random access memory)** –

оперативная память

**volatile** – непостоянный, изменчивый

**BIOS (basic input/output system)** – базовая

система ввода/ вывода

**to expand** – расширять

**DIMMs (dual in-line memory modules)** –

модуль памяти с двухсторонним

расположением микросхем

**a motherboard** – материнская плата

**to connect** – соединять

**a bus** – шина

**bus width** – ширина шины

**expansion slots** – слоты расширения

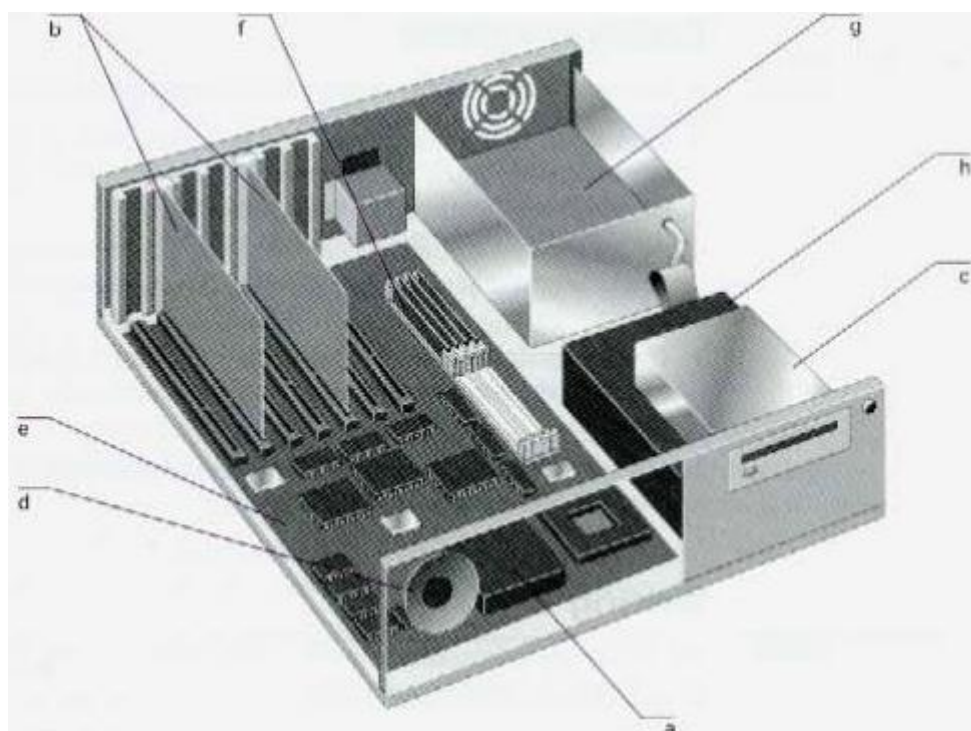
**to install** - устанавливать

**expansion cards** – карты расширения

### IV. Answer the questions.

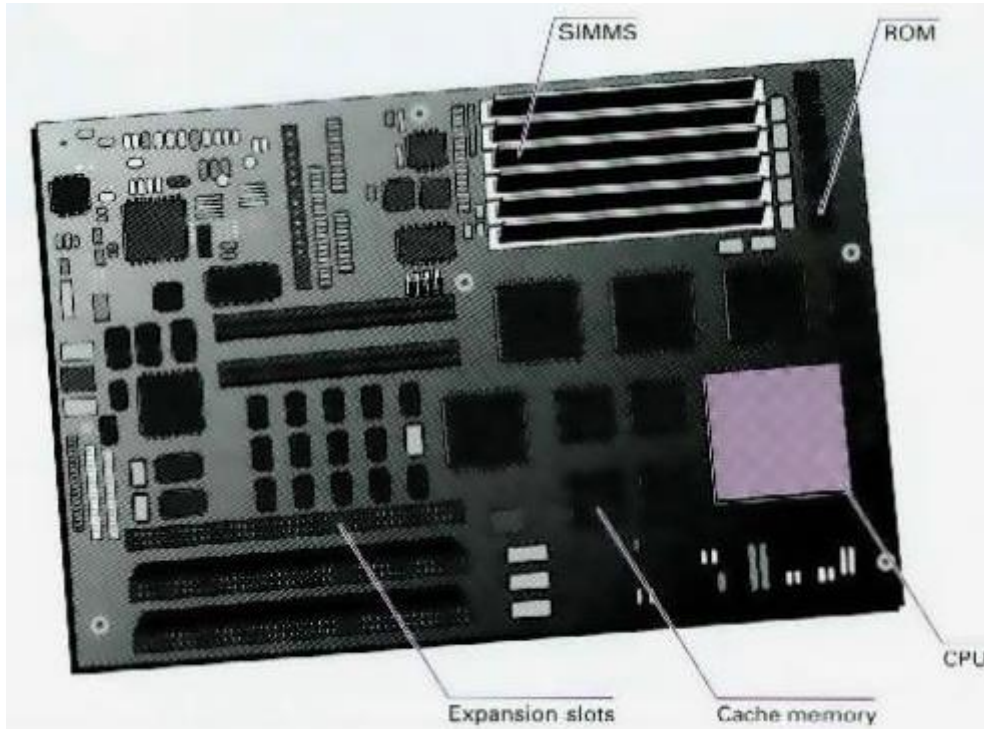
1. What are the main parts of the CPU?
2. What does ALU stand for? What does it do?
3. What is the function of the system clock?
4. How much is one gigahertz?
5. What type of memory is temporary?
6. What type of memory is permanent and includes instructions needed by the CPU?
7. How can RAM be increased?
8. What term is used to refer to the main printed circuit board?
9. What is a bus?
10. What is the benefit of having expansion slots?

### V. Label these components



- |                    |                    |
|--------------------|--------------------|
| 1. hard disk drive | 5. processor       |
| 2. motherboard     | 6. speaker         |
| 3. memory chips    | 7. expansion cards |
| 4. power supply    | 8. floppy drive    |

**VI. Match the components to their descriptions.**



1. These are memory chips. The more you have the more work you can do at a time. Empty memory slots mean you can add more memory.
2. This is the 'brain' of the computer.
3. It's part of the memory store. It has extremely fast access. It's faster than normal RAM. It can speed up the computer.
4. These let you add features such as sound or a modem to your computer.
5. This kind of memory contains all the instructions your computer needs to activate itself when you switch on. Unlike RAM, its contents are retained when you switch off.

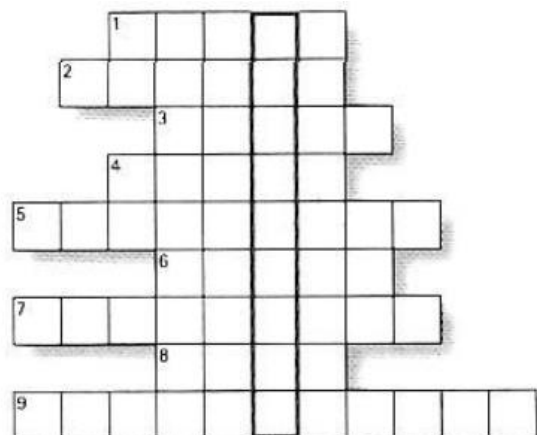
**VII. Match each item (1-10) with its functions (a-j).**

- |                      |  |
|----------------------|--|
| 1. RAM               | a. controls the cursor   |
| 2. processor         | b. input data through keys like a typewriter                             |
| 3. mouse             | c. displays the output from a computer on a screen                       |
| 4. clock             | d. reads DVD-ROMs  |
| 5. 3.5" floppy drive | e. reads and writes to removable magnetic disks                          |
| 6. monitor           | f. holds instructions which are needed to start up the computer          |
| 7. keyboard          | g. holds data read or written to it by the processor                     |
| 8. DVD-ROM drive     | h. provides extremely fast access for sections of a program and its data |
| 9. cache             | i. controls the timing of signals in the computer                        |
| 10. ROM              | j. controls all the operations in a computer                             |

**VIII. Find the verbs in the Passive Voice in the text and put them into Active Voice.**

**IX. Solve the clues and complete the puzzle with words.**

1. Intel ... are used in many computers.
2. Each 0 or 1 is called a bit, short for ... digit.
3. Special cards can be inserted into expansion ... .
4. A ... controls the timing within the PC by sending signals to synchronize its circuits and operations.
5. The processor speed is measured in ... .
6. ... carry signals between different parts of a PC.
7. ... cards improve the computer's performance.
8. The ... uses ROM to control the input/output of data.
9. The main printed circuit board is called the ... .



**X. Listen to two colleagues and complete this dialogue.**

**Bob:** What do you think? Which (1) ... is better for the sales team?

**Daisy:** I'm not sure. This computer has a (2) ... memory and I think it has a (3) ... processor.

**Bob:** And the other one?

**Daisy:** Well, it is (4) ... .

**Bob:** And (5) ... .

**Daisy:** Yes, you're right. Lighter and smaller.

**Bob:** But the bigger one is (6) ... .

**Daisy:** So what is your decision?

**Bob:** I'm not sure. Let's go for a coffee and discuss this again.

**XI. Translate the sentences into English.**

1. Ноутбуки – это легкие портативные компьютеры с небольшим экраном и тачпадом вместо мыши.
2. Центральный процессор – это «мозг» компьютера.
3. Скорость процессора измеряется в гигагерцах.
4. Главная микросхема компьютера называется материнская плата.
5. Материнская плата содержит центральный процессор, чипы памяти и слоты расширения.
6. Интегральная схема выполняет инструкции и координирует все действия компьютера.
7. Оперативная память непостоянна и сохраняет данные, пока компьютер работает.
8. Шины переносят данные от центрального процессора к другим устройствам.



## Input devices

*Input devices* are the pieces of hardware which allow us to enter information into the computer. The most common are the *keyboard* and the *mouse*. We can also **interact** with a computer by using of these: *a light pen, a scanner, a trackball, a graphics tablet, a game controller or a microphone*.

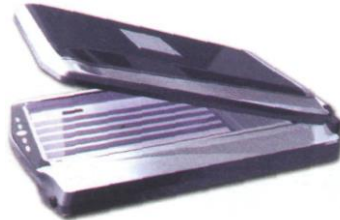
### **I. Label the pictures with words from the text.**



1 \_\_\_\_\_



2 \_\_\_\_\_



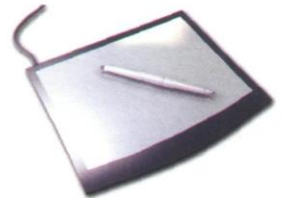
3 \_\_\_\_\_



4 \_\_\_\_\_



5 \_\_\_\_\_



6 \_\_\_\_\_



7 \_\_\_\_\_



8 \_\_\_\_\_

### **II. Listen to a computer technician describing three input devices. Write which devices he's talking about.**

### **III. Listen again and complete these extracts.**

1. This device is ... enter information into the computer.
2. ... it may also ... function keys and editing keys ... special purposes.
3. This is a device ... the cursor and selecting items on the screen.
4. It usually ... two buttons and a wheel.
5. ... the user ... activate icons and select items and text.
6. It ... detecting light from the computer screen and is used by pointing it directly at the screen display.
7. It ... the user ... answer multiple-choice questions and ...

# Computer keyboard

## I. Read and pronounce correctly.

**keyboard** (n) - ['ki:bɔ:d]

**numeric** (adj) - [nju:'mɛrɪk]

**dedicated** (adj) - ['dɛdɪkɛtɪd]

**typewriter** (n) - ['taɪp,raɪtə]

**enhance** (v) - [ɪn'hɑ:ns]

**to issue** (v) - ['ɪʃu:,'ɪʃju:]

## II. Read and translate the text using a dictionary.

Computer keyboard is the set of typewriter-like keys that enables you to enter data into a computer. Computer keyboards are similar to electric-typewriter keyboards but contain additional keys. The keys on computer keyboards are often classified as follows:

- *alphanumeric keys* represent letters and numbers
- *function keys* appear at the top of the keyboard and can be programmed to do special tasks
- *dedicated keys* are used to **issue commands** or to produce alternative characters, e.g. the Ctrl key or the Alt key
- *numeric keypad* appears to the right of the main keyboard. The Num Lock key is used to **switch** from numbers to editing keys
- *cursor control keys* include arrow keys that move the insertion point up, down, right and left, and keys such as End, Home, Page Up, Page Down, which are used in word processing to move around a long document.

The standard **layout** of letters, numbers, and punctuation is called *QWERTY keyboard* because the first six keys on the top row of letters spell QWERTY. The QWERTY keyboard was designed in the 1800s for technical typewriters.

There is no standard computer keyboard, although many **manufactures** imitate the keyboards of PCs. There are actually three different PC keyboards: the original PC keyboard, with 84 keys; the AT keyboard, also with 84 keys; and the *enhanced keyboard*, with 101 keys. The three differ somewhat in the placement of function keys.

## III. Read and learn the vocabulary.

**to issue commands** – отдавать команды

**to switch** – переключаться

**a layout** – расположение

**a manufacture** – производитель

## IV. Answer the questions

1. How are the keys on computer keyboards classified?
2. How is the standard layout of keys on a keyboard called?
3. When was the keyboard designed?
4. How many keys has enhanced keyboard?

## V. Label the picture of a standard keyboard with the groups of keys.





*A PC-compatible keyboard*

**VI. Match the descriptions (1-8) with the names of the keys (a-h).**

- |  |                 |
|--|-----------------|
| 1. A long key at the bottom of the keyboard. Each time it is pressed, it produces a blank space.             | a. arrow keys   |
| 2. It moves the cursor to the beginning of a new line. It is also used to confirm commands.                  | b. return/enter |
| 3. It works in combination with other keys. For example, you press this key and C to copy the selected text. | c. Caps Lock    |
| 4. It removes the character to the left of the cursor or any selected text.                                  | d. shift        |
| 5. It produces UPPER CASE characters.  | e. tab          |
| 6. It produces UPPER CASE letters, but it does not affect numbers and symbols.                               | f. space bar    |
| 7. It moves the cursor horizontally to the right for a fixed number of spaces.                               | g. backspace    |
| 8. They are used to move the cursor, as an alternative to the mouse.   | h. Ctrl         |

**VII. Find the verbs in the Passive Voice in the text and make up questions to these sentences.**

# Mouse

## I. Read and pronounce correctly.

**surface** (n) - ['sʌ:fɪs]

**direction** (n) - [d(a)ɪ'rekʃ(ə)n]

**infrared** (adj) - [ˌɪnfərə'red]

**movement** (n) - ['mu:vmənt]

## II. Read and translate the text using a dictionary.

A mouse is a device to move the cursor or pointer on a display screen. As you move the mouse, the pointer on the display screen moves in the same direction. You can roll a mouse on a hard, flat surface. It looks a bit like a real mouse because the connecting wire looks like a mouse tail. Mice usually have two buttons and sometimes as many as three, which have different functions depending on what program is running. Some newer mice also have a scroll wheel for scrolling through long documents.

The mouse was invented by Douglas Engelbart of Stanford Research Center in 1963. The mouse frees the user from using the keyboard. Mouse is important because you can simply point to objects on the screen and click a mouse button.

Mice can be:

- *Mechanical* with a rubber or metal ball that can roll in all directions. Mechanical sensors in the mouse detect the direction the ball is rolling and move the screen pointer.
- *Optomechanical* with optical sensors to detect motion of the ball.
- *Optical* with a laser to detect the mouse's movement. Optical mice have no mechanical moving parts but they are more expensive.
- *Cordless infrared* mice send infrared or radio waves to communicate with the computer.

## III. Find the English equivalent of the following words in the text.

указатель

перемещать (двигать) мышь

провод

кнопка

колесико прокрутки

обнаруживать, замечать

инфракрасный

## IV. Answer the questions.

1. What is a mouse?
2. How many buttons are there on a serial mouse?
3. Who invented a mouse?
4. What are the types of mice?

## V. Complete this text about the mouse with verbs from the box.

click	double-click	drag	grab	select	move	control
-------	--------------	------	------	--------	------	---------

The mouse allows you to (1) ... the cursor and move around the screen very quickly. Making the same movements with the arrow keys on the keyboard would take much longer. As you (2) ... the mouse on the desk, the pointer on the screen moves in the same direction. The pointer usually looks like an I-bar, an arrow, or a pointing hand, depending on what you are doing.

A mouse has one or more buttons to communicate with the computer. For example, if you want to place the insertion point or choose a menu option, you just (3) ... (press and release) on the mouse button and the option is chosen.

The mouse is also used to (4) ... text and items on the screen. You can highlight text to be deleted, copied or edited in some way.

The mouse is widely used in graphics and design. When you want to move an image, you position the pointer on the object you want to move, press the mouse button, and (5) ... the image to a new location on the screen. Similarly, the mouse is used to change the shape of graphic object. For example, if you want to convert a square into a rectangle, you (6) ... one corner of the square and stretch it into a rectangle.

The mouse is also used to start a program or open a document: you put the pointer on the file name and (7) ... on the name - that is, you rapidly press and release the mouse button twice.

**VI. Complete each sentence by choosing from the following devices:** *touch screen, trackball, touchpad, webcam.*

1. A ... is a stationary device that works like a mouse turned upside down. You roll the ball with your hand to move the pointer on the screen.

2. Interactive ... are used in museums, information centres and Internet kiosks. You use your finger to point directly to objects on the screen.

3. A ... is used to send live video images via the Internet.

4. A ... is found on notebook PCs. You use it by pressing the sensitive pad with a finger.

## The eyes of your computer

### I. Read and pronounce correctly.

**beneath** (adv) – [br'ni:θ]

**measurement** (n) – ['mɛʒəmə(ə)nt]

**digitize** (v) – ['dɪdʒɪtaɪz]

**rotating** (adj) – [rəʊ'teɪɪŋ]

### II. Read and translate the text using a dictionary.



#### What does a scanner do?

A scanner 'sees' images and **converts** the printed text or pictures into electronic code that can be understood by the computer. With a **flatbed colour scanner**, the paper with the image is placed face down on a glass screen, as with a photocopier. Beneath the glass are the lighting and measurement devices. Once

the scanner is activated, it reads the image as a series of dots and then generates the **digitized image** that is sent to the computer and **stored** as a file.

The scanner operates by using three rotating lamps, each of which has a different **coloured filter**: red, green and blue. The resulting three separate images are combined into one by appropriate software.

#### What does a digital camera do?



A digital camera takes photos electronically and converts them into digital data (binary codes made up of 1s and 0s). It doesn't use the film found in a traditional camera; instead it has a special **light-sensitive** silicon chip.

Photographs are stored in the camera's memory card before being sent to the computer. Some cameras can also be **connected** to a printer or a TV set to make viewing images easier. This is usually the case with camera phones – mobile phones with a built-in camera.

#### What does a camcorder do?



A camcorder, or digital video camera, records moving pictures and converts them into digital data that can be stored and **edited** by a computer with special video editing software.

Digital video cameras are used by home users to create their own movies, or by professionals in computer art and video conferencing.

They are also used to send live video images via the internet. In this case they are called web cameras, or webcams.

### III. Read and learn the vocabulary.

**to convert** – превращать, преобразовывать

**a flatbed colour scanner** – цветной сканер планшетного типа

**a digitized image** – оцифрованное изображение

**a coloured filter** – светофильтр

**light-sensitive** – светочувствительный

**to edit** – редактировать

**to store** – хранить

**to connect** – соединять

### IV. Answer the questions.

1. Which device is used to input text and graphic images from a printed page?
2. How does a scanner send information to the computer?

3. How do digital cameras store photographs?
4. What feature allows mobile phone users to take pictures?
5. Which device would you use to take digital video?
6. What kind of software is used to manipulate video clips on the computer?

**V. Match each device (1-7) with its use (a-g).**

- |                   |  |
|-------------------|--|
| 1. joystick       | a. draw pictures on to a computer screen |
| 2. lightpen       | b. copy documents                        |
| 3. scanner        | c. input sound                           |
| 4. digital camera | d. input text                            |
| 5. mouse          | e. select from a menu                    |
| 6. keyboard       | f. move the cursor rapidly               |
| 7. microphone     | g. produce photos without film           |

**VI. Listen to a conversation and complete the sentences.**

1. The technology used in scanners is similar to that used in a ... .
2. The scanned image is sent to the ..., where you manipulate it.
3. To scan text, you need special software called ... .
4. Flatbed scanners can scan ... .
5. Slide scanners are used to scan ... or film negatives.
6. Handheld scanners are used for capturing ... .

**VII. Translate the sentences into English.**

1. Мышка – это портативное устройство, которое позволяет двигать курсор на экране.
2. Колесико прокрутки позволяет просматривать документы или веб страницы.
3. Беспроводная мышь не имеет кабеля, и отправляют данные через инфракрасные сигналы или радиоволны.
4. Сканер – внешнее устройство, которое распознает изображения и преобразует его в электронный код.
5. Цифровой фотоаппарат не использует пленку, и фотографии хранятся в цифровом формате.
6. Функциональные клавиши, вверху клавиатуры, выполняют специальные задачи.

**VIII. Make adjectives or nouns from these words. In some cases, you can make more than one word. Use a dictionary to help you.**

Colour, profession, photograph, wire, blur, innovate, underexpose.

**IX. Complete these sentences with the word in brackets and one of these noun suffixes: -tion, -er, -ing, -logy, -ness. Use a dictionary to help you.**

1. Kodak is a (manufacture) of photographic and imaging equipment.
2. To avoid red eyes, use the camera's red eye (reduce) feature.
3. (Crop) a photograph means cutting out the parts of an image you don't need.
4. The (sharp) of a photograph is a combination of resolution and acutance – the ability to represent clear edges.
5. Digital (techno) is evolving so rapidly that some cameras have a resolution of 12 megapixels – that's million pixels.

**X. Describe your digital camera, webcam or video camera. Think about these questions.**

1. What do you use the device for?
2. Why did you buy that particular model?
3. What are your favourite functions?
4. What improvements would you make to the device?

## Output devices

### Display screen

#### I. Read and pronounce correctly.

**image** (n) - ['ɪmɪdʒ]

**cathode** (n) - ['kæθəʊd]

**tube** (n) - [tju:b]

**create** (v) - [kri:'eɪt]

**diagonally** (adv) - [daɪ'æɡənəli]

**luminance** (n) - ['lu:mɪn(ə)ns]

**fatigue** (n) - [fə'ti:g]

**quantity** (n) - ['kwɒntəti]

#### II. Read and translate the text using a dictionary.

##### CRTs and LCDs

The screen of a computer is often known as the monitor, or VDU (visual display unit). Inside the computer, there is a video card which processes images and sends signals to the monitor.

When choosing a monitor, you have to take into account a few basics.

- Type of display – the choice is between a CRT or an LCD screen. The Cathode Ray Tube of a monitor is similar to a traditional TV set. It has three electron guns (one for each primary colour: red, green and blue) that strike the inside of the screen, which is coated with substances called phosphors, which glow and create colours. CRTs are cheap, but they are heavy, can flicker and emit radiation. A Liquid Crystal Display is made from flat plates with a liquid crystal solution between them. The crystals block the light in different quantities to create the image. Active matrix LCDs use TFT (thin film transistor) technology, in which each pixel has its own transistor switch. They offer better quality and take up less space, so they are replacing CRTs.

- Screen size – the viewing area is measured diagonally; in other words, a 17" screen measures 17 inches from the top left corner to the bottom right.

- Resolution – the clarity of the image depends on the number of pixels (short for picture elements) contained on a display, horizontally and vertically. A typical resolution is 1024 × 768.

- The sharpness of images is affected by dot pitch, the distance between the pixels on the screen, so a dot pitch of 0.28 mm or less will produce a sharp image.

- Brightness – the luminance of images is measured in cd/m<sup>2</sup> (candela per square metre).

- Colour depth – the number of colours a monitor can display. For example, a VGA monitor produces 256 colours, enough for home use; a SuperVGA can produce up to 16.7 million colours, so is ideal for photographic work and video games.

- Refresh rate – the number of times that the image is drawn each second. If a monitor has a refresh rate of 75 Hertz (Hz), it means that the screen is scanned 75 times per second. If this rate is low, you will notice a flicker, which can cause eye fatigue.

#### III. Find the English equivalent of the following words in the text.

видео карта

изображение

экран

создавать

излучать радиацию

качество

размер экрана

по диагонали

измерять

разрешение

пиксель

резкость, четкость

размер точки экрана, шаг точки

яркость

глубина цвета

частота

#### IV. Answer the questions.

1. What do CRT and LCD stand for?
2. What is the difference between CRT and LCD screens?
3. Why are LCD screens replacing CRTs?
4. How is the screen size measured?
5. What technology is used by active matrix LCDs?
6. What is dot pitch?
7. What unit of frequency is used to measure the brightness of a display?
8. What is refresh rate?

#### V. Correct these false statements.

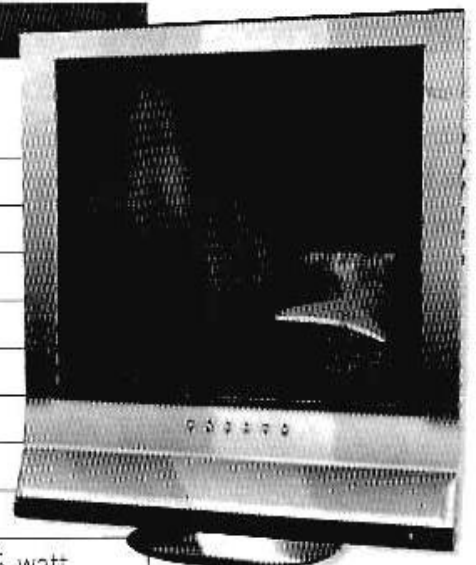
1. The images shown on a monitor are not generated by the video card.
2. All visible colours can be made from mixing the three primary colours of red, yellow and blue.
3. Typical CRT-based displays occupy less space than LCD displays.
4. Active-matrix LCDs do not use a technology called thin film transistor or TFT.
5. The size of the screen is measured horizontally.

#### VI. Match each term (1-5) with the correct definition (a-e).

- |                 |   |
|-----------------|---|
| 1. dot pitch    | a. the frequency at which a monitor renews its image, measured in Hz                              |
| 2. refresh rate | b. the degree of detail visible in a photographic or television image                             |
| 3. resolution   | c. a device in a computer system that controls the images that are shown on the computer's screen |
| 4. screen size  | d. the space between a display's pixels   |
| 5. video card   | e. the physical size of the area where pictures and videos are displayed                          |

#### VII. Complete the technical specifications of this monitor.

Quick specs	
The new Paintview XT-85 combines a television and a computer (1) ..... in one display.	
Type of display	Flat panel LCD
(2) .....	19 inches
(3) Display .....	1,280 x 1,024 pixels
Dot pitch	0.294 mm
(4) .....	16.7 million colours
Contrast ratio	1,000:1
(5) .....	450 cd/m2
Built-in TV tuner	Yes
Audio	Two 3-watt speakers and a 5-watt subwoofer, headphone jack
The Picture-in-Picture function allows you to watch more than one program at the same time and lets you adjust the size of each window.	





**VIII. Complete these health and safety guidelines with *should/shouldn't*.**

1. If you type a lot at your computer each day, you ... buy an ergonomic keyboard; it can help reduce the risk of repetitive strain injury.
2. You ... place your mouse within easy reach and support your forearm.
3. If you decide to build your own PC, protect yourself from electric shocks. You ... touch any components unnecessarily.
4. You ... always use a copyholder if you are working from documents. The best position is between the screen and the keyboard, or at the same height as the screen; this can reduce neck, back and eyestrain.
5. Irresponsible disposal of electronic waste can cause severe environmental and health problems. You ... just throw your old monitor or video system into the bin.

**IX. Practise giving advice about how to you a monitor safely using *should/shouldn't* or *It's a good/bad idea to*. Look at these guidelines for help.**

1. Don't open the monitor. It's dangerous.
2. Don't stare at the screen for long period of time.
3. Position the monitor at eye level or just below.
4. Leave enough space behind the monitor for unobstructed movement.
5. Don't sit near the sides or back of CRT monitors. Use LCD screen instead – they're free from radiation.
6. Keep the screen clean to prevent distorting shadows.

**X. Describe your own monitor.**

## Printers

### I. Read and pronounce correctly.

**acetate** (n) – ['æsiteɪt]

**queue** (n) – [kju:]

**substantially** (adv) – [səb'stænʃ(ə)li]

**scalable** (adj) – ['skeɪləb(ə)l]

**imagesetter** (n) – ['ɪmɪdʒsetə]

**lithographic** (adj) – [ˌlɪθə'græfɪk]

**illustration** (n) – [ɪlə'streɪʃ(ə)n]

**magenta** (n) – [mæ'dʒɛntə]

**cyan** (n) – ['saɪən]

### II. Read and translate the text using a dictionary.

#### Technical details



A printer is a device that prints your texts or graphics on paper.

The output on paper or acetate sheets is called printout or hard copy.

The output quality or resolution is measured in dpi or dots per inch.

A program in your computer, called the printer driver, converts data into a form that your printer can understand.

A printer spooler stores files to be printed when the printer is ready. It lets you change the order of documents in the queue and cancel specific print jobs.

The speed of your printer is measured in pages per minute (ppm).

In a network, users can share a printer connected to a print server, a computer that stores the files waiting to be printed.

#### Which type of printer should I buy?

Printing is the final stage in creating a document. Since the results you can obtain with different types of printer will vary substantially, here is a guide to help you decide which one is most suitable for your needs.

To begin with, you should take into account that printers vary in cost, speed, print quality, and other factors such as noise or printing method. Technology is evolving so quickly that there is always a printer for every application or need.

Dot-matrix printers use pins to print the dots required to shape a character. They can print text and graphics; however, they produce relatively low resolution output – 72 to 180 dots per inch (dpi). They are slower than laser printers but much cheaper.

Inkjet printers operate by projecting small ink droplets onto paper to form the required image. Colour and hues are created by the precise mixing of cyan, magenta, yellow and black inks. Inkjets are fairly fast, quiet, and not as expensive as laser printers. Nevertheless, you can still expect high quality results because there are some inkjet printers on the market with a resolution of 2,400 dpi.

Laser printers produce output at great speed and with a very high resolution of 1,200-2,400 dpi. They scan the image with a laser beam and transfer it to paper with a special ink powder called toner. They are constantly being improved. In terms of speed and image quality, laser printers are preferred by experts for various reasons; for instance, they have a wider range of scalable fonts than inkjets, can emulate different language systems, and can produce high-quality graphics; however, they are still expensive for home users.

Thermal transfer printers are used to produce colour images by transferring a wax-based ink onto the paper. They are popular for printing bar codes, labels and medium-resolution graphics.

Imagesetters produce very high-resolution output (up to 3,540 dpi) on paper or on the actual film for making the printing plates. In addition, they are extremely fast. Imagesetters are most often used in desktop publishing (DTP). Although they produce the highest quality output, they have one important disadvantage: they are too expensive for homes or small offices.

In modern lithographic printing, images are created on a DTP computer and then output directly to the printing plates, without requiring film as an intermediate step. This technology is called computer to plate, or CTP, and the machine used is called a platesetter.

Finally, we have plotters. Plotters use ink and fine pens held in a carriage to draw very detailed designs on paper. They are used for construction plans, engineering drawings and other technical illustrations. Nowadays, traditional plotters are being replaced with wide-format inkjets.

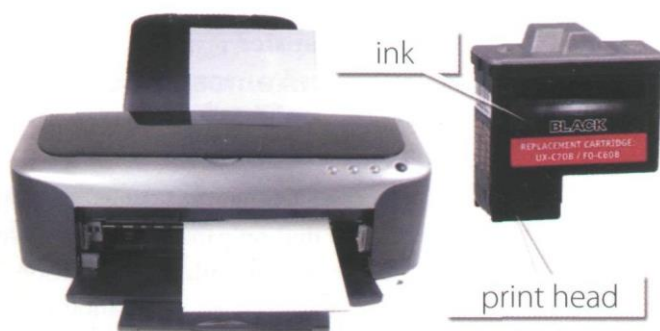
### III. Find the English equivalent of the following words in the text.

печатать	тонер
распечатка	быстрый
спулер принтера	создавать
матричный принтер	устройство фотовывода
струйный принтер	широкоформатный
чернила, краска	заменять

### IV. Complete these sentences with words from the text “Technical details”.

1. The difference in ... are noticeable: the more dots per inch, the clearer the image.
2. A print resolution of between 600 ... and 2400 ... ensured that even text as small as 2pt was legible.
3. The key advance of recent years is printing speed: the latest generation of ink-jets prints black-and-white text at 15 ... .
4. With appropriate software, you can view the images on a computer, manipulate them, or send them to a ... and produce excellent quality colour copies.
5. A ... is a dedicated computer that connect a printer to a network. It enables users to share printing resources.
6. A ... is a utility that organizes and arranges any documents waiting to be printed.
7. In computers, a ... is a program installed to control a particular type of printer.

### V. Label the types of printers. Which types of printer aren't pictured?

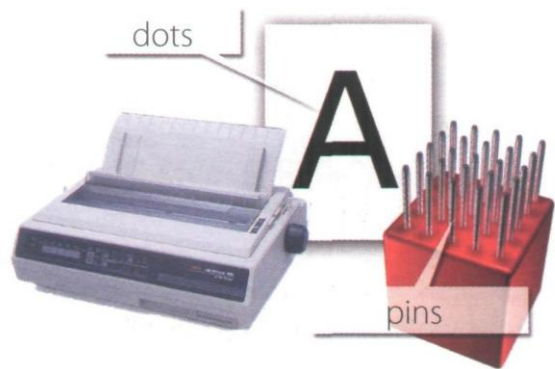


*The quality (resolution) of the images goes up to 2,400 dots per inch (dpi)*



*Provides high quality output: a resolution of 1,200–2,400 dpi*

2 \_\_\_\_\_



*The resolution depends on the number of pins*

3 \_\_\_\_\_



*Provides high quality for linework (lines and curves)*

4 \_\_\_\_\_



*Provides the highest resolution: more than 3,000 dpi*

5 \_\_\_\_\_

## **VI. Choose the most appropriate type of printer for these situations.**

1. a home user who wants to print text documents and family photographs
2. business people who need to print in large quantities at high quality in an office
3. engineers who want to make detailed line drawings
4. professional typesetters in desktop publishing (e.g. to public catalogues and magazines)
5. a company that wants to print carbon copies of bills and receipts

## **VII. Listen an extract from a consumer technology podcast about multi-function printers and answer the questions.**

1. What is a multi-function printer?
2. Why are multi-function printers so popular?
3. What is the main advantage of PictBridge technology?
4. Apart from sheets of paper, what other things can multi-function printers print?
5. What software do you usually get when you buy a multi-function printer?
6. What advice does Mr. Kelly give on ink cartridges?
7. What type of device does he recommend for home users?
8. What type of device does he recommend for business?

## **VIII. Complete these sentences using the comparative or superlative form of the adjectives in brackets.**

1. Always buy the (fast) scanner with the (high) resolution you can afford.
2. A laser printer is generally (quiet) than a low-cost inkjet printer.

3. Multi-function printers are now only slightly (expensive) than conventional printers, and offer much (great) versatility.
4. They have created the (revolutionary) camera to date.
5. FotoFinish is the (easy) photo editing software for your digital camera.
6. The print quality of this network printer is noticeably (good) than any inkjet, and as (good) as similar laser printers.
7. This scanner gives you the (good) scans with the (little) effort.
8. The Agfa platesetter is (reliable) and (easy) to use than most printers of its type.
9. Your printer is only as (good) as the paper you use.
10. Our university has bought the (modern) computer equipment.
11. The final result is always (accurate) than the original image.
12. An imagesetter is (heavy) than a laser printer.

#### **IX. Translate the sentences into English.**

1. Существует три типа принтеров: матричный, струйный и лазерный.
2. Матричный принтер имеет два недостатка: шум и низкое разрешение.
3. Струйные принтеры быстрее и тише матричных, а также не такие дорогие как лазерные принтеры.
4. Лазерные принтеры работают с большой скоростью и высоким качеством разрешения.
5. Экран измеряется по диагонали в дюймах.
6. Разрешение или четкость изображения, зависит от количества пикселей.

#### **X. Give a summary of the text (8-10 sentences). Use some words and expressions:**

1. This text is about ...
2. The text contains the description of ...
3. The main idea of the text is ...
4. In my opinion
5. It should be noted ...
6. In conclusion ...
7. To sum up ...

## Storage devices

### Types of magnetic drive

#### I. Look at pictures and descriptions below and find the following.

1. the name of the hard drive on PC platform
2. the type of hard drive that plugs into a socket at the back of a computer
3. the system that works in sequential format
4. the size and storage capacity of a floppy disk



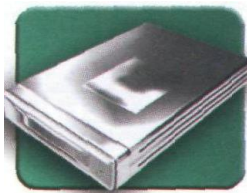
#### **A 3.5" floppy drive and diskette**

A floppy disk drive uses 3.5" disks, which can store 1,44 MB of data. Floppy drives are becoming increasingly rare.



#### **The inside of a hard drive**

Most PCs have one internal hard drive, usually called C: drive. It is used to store the operating system, the programs and the user's files in a convenient way. A hard drive can hold hundreds of gigabytes of data.



#### **A portable external hard drive**

External hard drives are connected to the USB or FireWire port of the computer. They can be as small as a wallet but can have as much capacity as internal drives; they are typically used for backup or as secondary storage.

### **Magnetic tapes and drive**

A tape drive reads and writes data on tapes. It is sequential-access – i.e. to get to a particular point on the tape, it must go through all the preceding points. Tapes can hold hundreds of gigabytes of data and are used for data collection, backup and archiving.

#### II. Complete these sentences with words from the box.

capacity	storage	archiving	hold	secondary
----------	---------	-----------	------	-----------

1. There are basically three types of magnetic ... device available to the computer user – hard drives, diskettes and tapes.
2. The ... of a 3,5" floppy disk is only 1,44 MB.
3. Hard drives can ... hundreds of times more data than floppy disks.
4. A portable hard drive is a good choice for ... storage.
5. Magnetic tapes are used for ... information that you no longer need to use regularly.

## Magnetic storage

### I. Read and pronounce correctly.

**magnetizable** (adj) - [ˈmæɡnɪtaɪzəb(ə)l]

**revolution** (n) - [ˌrevəˈluːʃ(ə)n]

**manufacturer** (n) - [ˌmænʃəˈfaktʃ(ə)rə]

**circular** (adj) - [ˈsəːkjʊlə]

**erase** (v) - [ɪˈreɪz]

**require** (v) - [rɪˈkwaɪə]

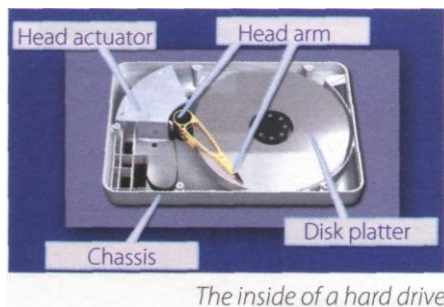
**utility** (n) - [juːˈtɪlɪti]

**diagnosis** (n) - [ˌdɪəɡˈnəʊsɪs]

### II. Read and translate the text using a dictionary.

**Magnetic storage devices** store data by magnetizing particles on a disk or tape.

A floppy disk is so called because it consists of a flexible sheet of plastic, coated with iron oxide – **magnetizable material**. A floppy disk drive **spins** at 360 revolutions per minute (rpm), so it's relatively slow. However, a hard drive spins at over 7,200 rpm and stores data on a stack of metal rotating disks called platters. This means you can store much more data and **retrieve** information much faster.



New disks need to be formatted before you can use them, unless they come preformatted from the manufacturer. When the disk is **formatted**, the operating system (OS) organizes the disk surface into circular tracks and divides each track into sectors. The OS creates the **directory** which will record the specific location of files. When you save a file, the OS moves the **read/write head** of the drive towards empty sectors, records the data and writes an entry for the directory. Later on, when you

open that file, the OS looks for its entry in the directory, moves read/write heads to the correct sector, and reads the file in the RAM area. However, formatting **erases** any existing files on a disk, so don't format disks on which data that you don't want to lose is stored.

The OS allows you to create one or more **partitions** on your hard drive, in effect dividing it into several logical parts. Partitions let you **install** more than one operating system (e.g. Windows and Linux) on your computer. You may also decide to split your hard drive because you want to store the OS and programs on one partition and your data files on another; this allows you to reinstall the OS when a problem occurs, without affecting the data partition.

The average time required for read/write heads to move and find data is called **seek time** (or access time) and it is measured in milliseconds (ms); most hard drives have a seek time of 7 to 14 ms. Don't confuse this with **transfer rate** – the average speed required to transmit data from the disk to the CPU, measured in megabytes per second.

#### How to protect your hard drive

- Don't hit or move the computer while the hard drive is spinning. Hard drives are very sensitive to vibration and shocks, especially when they are operating; when the read/write head touches the rotating disk, it can scratch and damage the disk surface. This is known as **head crash**.

- You shouldn't turn your computer off and on quickly. Wait at least ten seconds to ensure that the drive has stopped spinning.

- **Check** your hard drive regularly for logical and physical errors. To check and repair a drive, you can use a disk diagnosis utility like Windows ScanDisk.

- To minimize the risk of data loss or corruption, you should install an **up-to-date** virus scanner.
- You should also **back up** your hard drive regularly.



### III. Read and learn the vocabulary.

**magnetic storage device** – магнитное запоминающее устройство

**magnetizable material** – намагничиваемый материал

**to spin** – вращаться

**to retrieve** – искать, отыскивать

**formatted** – форматированный

**a directory** – каталог файлов

**a read/write head** – универсальная головка

**to erase** – стирать

**to install** – устанавливать

**a partition** – отделение

**a seek time** – время поиска

**a transfer rate** – скорость передачи

**a head crash** – разрушение головки

**to check** – проверить

**up-to-date** – современный, новейший

**to back up** – выполнять резервное копирование

### IV. Decide whether these sentences are true or false. Correct the false ones.

1. A hard drive spins at the same speed as a floppy disk drive.
2. If you format a hard drive that has files on it, the files will be deleted.
3. Hard drives cannot be partitioned to run separate operating systems on the same disk.
4. Seek time and transfer rate mean the same thing.
5. Disk drives are not shock resistant, especially in operating mode.

### V. Match these words (1-5) with the definitions (a-e).

- |                    |   |
|--------------------|---|
| 1. formatted       | a. a file system that defines the structure for keeping track of the files        |
| 2. directory       | b. the part of a drive that reads and records data on a disk                      |
| 3. read/write head | c. to make a copy of data or software in case the original disk is damaged        |
| 4. head crash      | d. initialized; when the tracks and sectors on magnetic disks are set             |
| 5. back up         | e. a serious disk malfunction; when the read/write head touches the rotating disk |

### VI. Match the instructions (1-6) with the pictures (a-f).

1. Do not expose discs to heat or direct sunlight.
2. Check for viruses before opening files you receive from the Web or via email.
3. Make backup copies of your files.
4. Don't shake or move the computer violently while the hard drive is spinning.
5. Keep your discs away from water and humidity.
6. Hold discs by the edges, or by one edge and the centre hole.

a



b



c







**VII. Discuss what you should or shouldn't do to protect your data. Use the suggestions below.**

Ex.: discs on top of each other (stack)

*You shouldn't stack discs on top of each other./ Don't stack discs on top of each other.*

1. your anti-virus program regularly, since new viruses are created everyday (update)
2. discs in protective case (store)
3. passwords and security devices to protect confidential information (use)
4. on discs with permanent marker pens (write)
5. the disc into the disc drive carefully (insert)
6. floppies or hard drives near magnets; they can damage the data stored on them (leave)

**VIII. Find the verbs in the text in the form of the Present Indefinite (Simple) tense and make up questions to these sentences.**

## Optical discs and drives

### I. Read and pronounce correctly.

**furthermore** (adv) – [fəːðə'mɔ:]

**secure** (adj) – [sɪ'kjʊə]

**capacity** (n) – [kə'pæsɪtɪ]

**dual** (adj) – ['dju:əl]

**duplicate** (v) – ['dju:plɪkət]

**encyclopedia** (n) – [ɪnˌsaɪklə'pi:dɪə]

### II. Read and translate the text using a dictionary.

Optical discs can store data at much higher densities than magnetic disks. They are therefore ideal for multimedia applications where images, animation and sound occupy a lot of disc space. Furthermore, optical discs are not affected by magnetic fields, meaning that they are secure and stable, and can be transported through airport metal detectors without damaging the data. However, optical drives are slower than hard drives.

#### CDs and DVDs

At first sight, a DVD is similar to a CD. Both discs are 120 mm in a diameter and 1,2 mm thick. They also both use a laser beam to read data. However, they are very different in internal structure and data capacity. In a DVD, the tracks are very close together, thus allowing more tracks. The pits in which data is stored are also smaller, so there are more pits per track. As a result, a CD can hold 650-700 MB, whereas a basic DVD can hold 4.7GB. In addition, a DVD can be double-sided and dual layer, with a capacity of 17GB.

CDs come in three different formats:

- CD-ROMs (read-only memory) are read-only units, meaning you cannot change the data stored on them (for example, a dictionary or a game).
- CD-R (recordable) discs are write-once devices which let you duplicate music CDs and other data CDs.
- CD-RW (rewritable) discs enable you to write onto them many times, just like a hard disk.

DVDs also come in several formats:

- ◇ DVD-ROMs are used in DVD computer drives. They allow for data archiving as well as interactive content (for example, encyclopedia or a movie).
- ◇ DVD-R or DVD+R can only be recorded on once.
- ◇ DVD-RW or DVD+RW discs can be erased and reused many times. They are used to back up data files and to record audio and video.

The DVD drive used in computers is also called a DVD burner because it records information by burning via a laser to a blank DVD disc. However, a DVD recorder typically refers to a standalone unit which resembles a video cassette recorder. New DVD recorders can play all CD and DVD formats. There are also portable DVD players – handhelds devices which let you watch movies or TV, play games and listen to music, wherever you are. They come with a built-in DVD drive and widescreen (rectangular 16:9 format) LCD display. They usually support multi-format playback – that is, they can play many file formats, including DVD-video, DivX, CD audio discs, MP3 music and JPEG images.

#### HD-DVD and Blu-ray discs

These two competing formats are expected to replace current DVD as the standard for watching movies at home. On one side are Toshiba, Microsoft and the DVD Forum, who support the High Definition-DVD (HD-DVD). Sony, Panasonic, Samsung, JVC and many movie studios are behind the Blu-ray format.

A Blu-ray disc has a capacity of 25 GB (single layer), 50 GB (dual layer) and 100 GB (four layer). Unlike DVDs, which use a red laser to read and write data, Blu-ray uses a blue-violet

laser, hence its name. Blu-ray disc can record and play back high-definition television and digital audio, as well as computer data.

**III. Find the English equivalent of the following words in the text.**

хранить данные  
занимать  
безопасный  
емкость, объем

записывать  
повторно использовать  
встроенный

**IV. Find the following in the text.**

1. the advantages and disadvantages of optical discs over magnetic disks
2. the storage capacity of a double-sided, dual layer DVD
3. the difference between a DVD burner and a DVD recorder
4. the features of a portable DVD player which allows the user to play different formats
5. two possible successors to DVDs
6. where the Blu-ray format gets its name from

**V. Make notes about the features of CDs, DVDs and Blu-ray discs.**

	Capacity and formats	Possible uses
CD		
DVD		
Blu-ray		

**VI. Complete this product description with words from the box.**

multi-format playback	portable DVD player	widescreen	headphones
-----------------------	---------------------	------------	------------

The Panasonic DVD-LS91 is a top-of-the-range (1) ..., which provides pure entertainment wherever you go.

It has a big inch built-in (2) ... LCD, so you can really enjoy movies. The built-in stereo speakers allow you to listen along, or if you want to listen alone, just plug in a pair of (3) ... . This portable machine provides (4) ... so you can play DVD Audio/Video, CD-R/RW, DVD-RAM, DivX and MP3 files. Its compact design features a built-in rechargeable 6 hour battery pack.

The DVD-LS91 allows 6 hours of playback, and provides a perfect way to entertain yourself and your kids during long trips.

**VII. Listen the conversation and decide whether these sentences are true or false. Correct the false ones.**

1. A DVD is an optical digital disc that can be used for video, audio and data storage.
2. The dimensions of a CD and a DVD are the same: 1.3 mm thick and 13 cm in diameter.
3. The data on a DVD is read with a laser beam.
4. A basic DVD can hold 3.7 gigabytes.
5. You need a hard drive to read DVDs.
6. DVD-Video discs can hold full-length movies.
7. A DVD Writer is not compatible with old CD-ROMs.

**VIII. Find the verbs in the Passive Voice in the text and make up questions to these sentences.**

## Flash memory

### Flash-based gadgets

**I. Flash memory is used in many handheld devices. Match the descriptions (1-6) with the pictures (a-f).**

1. This handheld console lets you play games stored on ROM game cards, which have a small amount of flash memory to save user data, for example high scores.
2. The flash memory card is used as 'digital film' to store images on a digital camera.
3. The wireless LAN card allows laptop and PDA users to access the Internet from any Wi-Fi access point
4. The USB flash pen drive is the latest mobile drive for your computer.
5. It looks like an ordinary watch, but this USB drive from Edge Tech can store to 1GB of flash memory. It will let you save and transfer your photos, songs and data files easily.
6. This flash-based player provides everything you need to play music and store data on the go. It also comes with a built-in FM radio and voice recorder.



a \_\_\_\_\_



b \_\_\_\_\_



c \_\_\_\_\_



d \_\_\_\_\_



e \_\_\_\_\_



f \_\_\_\_\_



## Memory in a flash

### I. Read and pronounce correctly.

**non-volatile** (adj) - [ˌnɒnˈvɒlətaɪl]

**quickly** (adv) - [ˈkwɪkli]

**rewritable** (adj) - [riːˈraɪtəbl]

**update** (v) - [ʌpˈdeɪt]

**transistor** (n) - [ˈtrænzɪstə]

**structure** (n) - [ˈstrʌktʃə]

**fragile** (adj) - [ˈfrædʒaɪl]

**storage** (n) - [ˈstɔːrɪdʒ]

**interchangeable** (adj) - [ɪntəˈtʃeɪn(d)ʒəbl]

### II. Read and translate the text using a dictionary.

Flash memory is a type of **non-volatile memory** that can be electronically erased and reprogrammed. Its name was invented by Toshiba to express how much faster it could be erased – ‘in a flash’, which means ‘very quickly’.

Unlike RAM, which is volatile, flash memory retains the information stored in the chip when the power is turned off. This makes it ideal for use in digital cameras, laptops, network switches, video game cards, mobile phones and portable multimedia players. In addition, it offers fast read **access times** (although not as fast as RAM), with transfer rates of 12MB per second. Unlike ROM chips, flash memory chips are rewritable, so you can **update** programs via software.

Inside the chip, data is stored in several floating gate transistors, called cells. Each cell traditionally stores one bit of data (1=erased and 0=programmed). New devices have a multi-level cell structure so they can store more than one bit per cell. The chips are constructed with either NOR and NAND gates. NOR chips function like a computer’s main memory, while NAND works like a hard drive. For example, in a camera, NOR flash contains the camera’s internal software, while NAND flash is used to store the images.

Flash memory is used in several ways:

◇ Many PCs have their BIOS (basic input/output system) stored on a flash memory chip so it can be updated if necessary.

◇ Modem uses flash memory because it allows the manufacturer to support new protocols.

◇ USB flash drives are used to save and move MP3s and other data files between computers. They are more easily transported than external hard drives because they use solid-state technology, meaning that they don’t have fragile moving parts that can **break** if dropped. However, USB flash drives have less storage capacity than hard drives.

◇ New U3 smart drives allow users to store both applications and data. They have two drives partitions and can carry applications that run on the host computer without requiring installation.

◇ Flash memory cards are used to store images on cameras, to back up data on PDAs, to transfer games in video consoles, to record voice and music on MP3 players or to store movies on MP4 players. They are as small as a stamp, and capacity can range from 8MB to several gigabytes. The only **limitation** is that flash cards are often not interchangeable between devices. Some formats include: CompactFlash, Secure Digital, MultiMedia Card, miniSD card, and xD-Picture card. Sony has its own product called the Memory Stick, used in its digital still cameras, video camcorders and the PlayStation Portable. The photos stored in a digital camera can be **offloaded** to a computer via cable or **wirelessly**. Another option is to have a flash card reader permanently connected to your PC; you simply eject the card from the camera and put it into the reader instead of having to plug the camera in.

The future of hard drives may be hybrid hard drives. Hybrid hard drives combine a magnetic hard disk and flash memory into one device.



This allows computers to boot, or start, more quickly, and also reduces **power consumption**.

### III. Read and learn the vocabulary.

**non-volatile memory** – постоянная память

**access time** – время доступа

**to update** – обновлять

**to break** – сломать

**limitation** – ограничение

**to offload** – перемещать

**wireless** – беспроводной

**power consumption** – потребление энергии

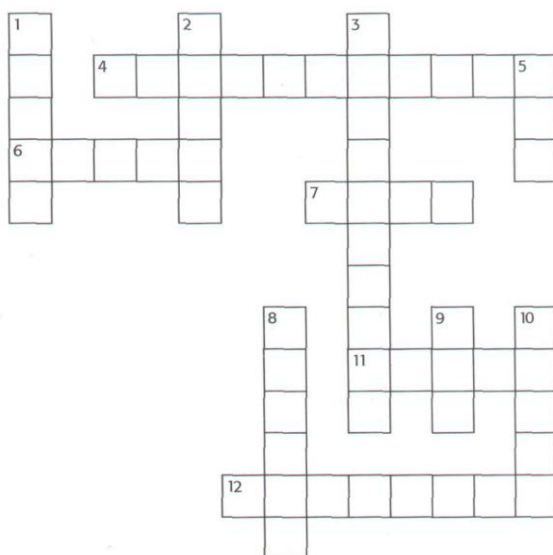
### IV. Answer these questions.

1. What is flash memory?
2. What are the differences between RAM memory and flash memory?
3. What can devices which use multi-level cell technology do?
4. What are the differences between flash drives and external hard drives?
5. What is the advantage of using U3 technology in flash drives?
6. How much data can a flash memory card hold?
7. What is the name of the flash card created by Sony for its digital cameras?

### V. Find words or phrases in the text with the following meanings.

1. permanent; able to hold data without power
2. able to be rewritten many times
3. different sections of a disk drive or storage area
4. to make a copy of a file so that the original is not lost
5. transferred to another device
6. a peripheral device that reads and writes flash memory cards
7. a product that integrates two different technologies

### VI. Solve the clues and complete the puzzle.



#### Across

4. Thousandth of a second, abbreviated to *ms*, used to measure the access time of hard drives.

6. Floating gate transistors are called ... in flash memory technology.

7. Prefix meaning *very large* or *one thousand million*.

11. Acronym for *light amplification by stimulated emission of radiation*.

12. Capable of being deleted.

#### Down

1. Concentric ring on the surface of a disc when the disc is formatted.

2. ... memory retains its data when the power is switched off.

3. CD-RW means Compact disc ... .

5. Abbreviation of *digital versatile disc*.

8. To write information on a disk or storage area.

9. Type of external bus or connector that plugs into the computer.

10. The physical mechanism that accepts, reads and writes data on a disk.

**VII. Fill in the gaps in this summary of storage devices using the correct word from this list.**

but	however	because	so	therefore	for this reason
-----	---------	---------	----	-----------	-----------------

Floppies are very cheap, (1) ... they are slow and have a limited capacity. Hard disk are fast and can store large amounts of data (2) ... they are fixed inside the computer. (3) ... you cannot use them to transfer data. You can transfer data with removable hard disk, (4) ... they are expensive. CD-ROM disks can hold quite large amounts of data. (5) ..., they are usually read-only (6) ... you cannot change the information on them. Magneto-optical disks are like CD-ROMs (7) ... you can write data on to them. They are removable and have large capacities, (8) ... they are expensive and do not conform to a standard, (9) ... they are not very common. Magnetic tape is cheap and has a large capacity, (10) ... it does not allow random access and drives are slow, (11) ... it is only suitable for backups.

**VIII. Add to the statements (1-10) using the extra information (a-j).**

*Ex.: A barcode is a pattern of printed black lines which supermarkets use for pricing.*

- |  |  |
|--|--|
| 1. A barcode is a pattern of printed black lines     | a. it contains the main electronic components.     |
| 2. A floppy is a disk                                | b. it adds features to a computer.                 |
| 3. A motherboard is a printed circuit board          | c. it is about the size of a piece of paper.       |
| 4. A password is a secret set of characters          | d. supermarkets use them for pricing.              |
| 5. A monitor is an output device                     | e. it reads and writes to disks.                   |
| 6. A disk drive is a unit                            | f. it can hold 1.44MB of data.                     |
| 7. An expansion card is an electronic board          | g. it allows access to a computer system.          |
| 8. A CD-ROM drive is a common storage device         | h. it controls all the other boards in a computer. |
| 9. A notebook is a portable computer                 | i. it displays data on a screen.                   |
| 10. The system unit is the main part of the computer | j. it reads data from a CD-ROM disk.               |

**IX. Find the sentences in the text in plural form and put these sentences into single.**

**X. Translate the sentences into English.**

1. Дисковод вращает диск на высокой скорости и читает его данные или записывает новые.
2. Большинство компьютеров имеют внутренний жесткий диск, который может хранить несколько гигабитов информации.
3. Оптические диски используют лазер, чтобы читать и писать данные, но они медленнее, чем жесткие диски.
4. Портативные DVD-проигрыватели позволяют смотреть кино, играть в игры и слушать музыку.
5. Флэш-память – постоянная память, которая сохраняет информацию, когда питание выключено.

**XI. Describe advantages and disadvantages of different types of storage devices.**

## Basic software

### Operating system

#### I. Read and pronounce correctly.

**procedure** (n) - [prə'si:dʒə]  
**facilitate** (v) - [fə'sɪlɪteɪt]  
**intuitive** (adj) - [ɪn'tju:ɪtv]  
**environment** (n) - [ɪn'vaɪrənmənt]  
**menu** (n) - ['menju:]  
**icon** (n) - ['aɪkɒn]  
**launch** (v) - [lɔ:ntʃ]  
**dialog** (n) - ['daɪəlɒɡ]  
**installation** (n) - [ɪnstə'leɪʃ(ə)n]  
**similar** (adj) - ['sɪmlə]  
**appliance** (n) - [ə'plaɪəns]  
**connectivity** (n) - [kənek'tɪvɪti]

#### II. Read and translate the text using a dictionary.

The term **user interface** refers to the standard procedures that the user follows in order to **interact** with a computer. In the late 1970s and early 80s, the way users accessed computer systems was very complex. They had to memorize and type a lot of commands just to see the contents of a disk, to copy files or to respond to a single prompt. In fact, it was only experts who used computers, so there was no need for a user-friendly interface.

In 1984, Apple produced the Macintosh, the first computer with a mouse and a graphical user interface (GUI). Macs were designed with one clear aim: to facilitate interaction with the computer. A few years later, Microsoft launched Windows, another **operating system** based on graphics and intuitive tools. Nowadays, computers are used by all kinds of people, and as a result there is a growing emphasis on accessibility and user-friendly systems.

A GUI makes use of a WIMP environment: **windows**, **icons**, **menus** and **pointer**. The background of the screen is called the **desktop**, which contains labelled pictures called icons. These icons represent **files** or **folders**. Double-clicking a folder opens a window which contains programs, documents, or more nested folders. When you are in a folder, you can **launch a program** or document by double-clicking the icon, or you can **drag** it to another location. When you run a program, your PC **opens** a window that lets you work with different tools. All the programs have a high level of consistency, with similar **toolbars**, **menu bars**, buttons and **dialog boxes**. A modern OS also provides access to **networks** and allows multitasking, which means you can run several programs – and do various tasks – at the same time.

The most popular operating systems are:

- The Windows family – designed by Microsoft and used on most PCs. The most recent version is Windows 10.
- Mac OS – created by Apple and used on Macintosh computers.
- Unix – a multi-user system, found on mainframes and workstations in corporate **installations**.
- Linux – open-source software developed under the GNU General Public License. This means anybody can copy its **source code**, change it and distribute it. It is used in computers, appliances and small devices.
- Windows Mobile – used on most PDAs and smartphones (PDAs incorporating mobile phones).
- Palm OS – used on Palm **handheld devices**.
- RIM – used on BlackBerry communication devices. Developed by Research in Motion.
- The Symbian OS – used by some phone makers, including Nokia and Siemens.



These computer platforms differ in areas such as device installation, network connectivity or compatibility with application software.

### III. Find the English equivalent of the following words in the text.

пользовательский интерфейс

взаимодействовать

операционная система

окно

иконка

меню

указатель

рабочий стол

файл

папка

запустить программу

перетаскивать

открывать

панель инструментов

строка меню

диалоговое окно

сеть

исходный код

портативное устройство

установка

### IV. Label the interface features (a-j) on the screenshot of Apple's Mac OS X operating system with words in bold from this list.

**desktop:** the background screen that displays icons and folders

**window:** a scrollable viewing area on screen; it can contain files or folders

**icon:** a picture representing an object; for example, a document, program, folder or hard drive icon

**folder:** a directory that holds data, programs and other folders

**menu bar:** a row of words that open up menus when selected

**drop-down (pull-down) menu:** a list of options that appears below a menu item when selected

**scroll bar:** a horizontal or vertical bar that is clicked and dragged in the desired direction

**dock:** set of icons at the bottom of the screen that give you access to the things you use most



## V. Listen to an interview and answer these questions.

1. Why is Windows so popular? Give two reasons.
2. Which Windows Vista edition is aimed at high-end PC users, gamers and multimedia professionals?

## VI. Listen again and complete this fact file.

Windows Vista editions	Other features	Internet and security	Windows programs
(1) ... is designed for users with basic needs, such as email and internet access. Home Premium is for advanced home computing and (2) ... The Business edition is ideal for (3) ... The Ultimate edition is the most complete.	The user interface has been redesigned with new icons and a new (4) ... It offers support for the latest technologies, from DVD creation to (5) ...	Internet Explorer is more reliable and secure. The Security Centre includes an (6) ... program called Windows Defender, and firewall that protects your computer from (7) ...	The most popular is still (8) ... a suite that includes the (9) ..., Word; an email program; the Excel spreadsheet program; and the (10) ... program, PowerPoint.

## VII. Complete this text with *a*, *an*, *the* or nothing.

Linux is (1) ... operating system and it was initially created as (2) ... hobby by a young student, Linus Torvalds, at the University of Helsinki in Finland. Version 1.0 of the Linux Kernel<sup>1</sup> was released in 1994. (3) ... Kernel, at the heart of all Linux systems, is developed and released under GNU General Public License, and its source code is freely available to everyone.

Apart from the fact that it's freely distributed, (4) ... Linux's functionality, adaptability and robustness has made it the main alternative for proprietary Unix and Microsoft operating systems. IBM, Hewlett-Packard and other giants of the computing world have embraced Linux and support its ongoing development. More than (5) ... decade after its initial release, Linux is being adopted worldwide, primarily as (6) ... server platform. Its use as a home and office desktop operating system is also on the rise. The operating system can also be incorporated directly into (7) ... microchips in a process called (8) ... embedding, and it is increasingly being used this way in appliances and devices.

## VIII. Give a summary of the text (8-10 sentences). Use some words and expressions:

- 1) This text is about ...
- 2) The text contains the description of ...
- 3) The main idea of the text is ...
- 4) In my opinion
- 5) It should be noted ...
- 6) In conclusion ...
- 7) To sum up ...

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<sup>1</sup> The Kernel provides of a way for software and other parts of the OS to communicate with hardware.

## Word processing

### I. Read and pronounce correctly.

**character** (n) - ['kærɪktə]

**equally** (adv) - ['i:kw(ə)li]

**margin** (n) - ['mɑ:dʒɪn]

**customize** (v) - ['kʌstəmaɪz]

**particularly** (adv) - [pə'tɪkjələli]

**generating** (adj) - ['dʒenəreɪtɪŋ]

**highlight** (v) - ['haɪlaɪt]

**thesaurus** (n) - [θɪ'sɔ:rəs]

### II. Read and translate the text using a dictionary.

A word processor enable you to create a document, store it electronically on a disk, display it on a screen, modify it by entering commands and characters from the keyboard, and print it on a printer.

The great advantage of word processing over using a typewriter is that you can make changes without retyping the entire document. If you make a typing mistake, you simply back up the cursor and correct your mistake. If you want to delete a paragraph, you simply remove it, without leaving a trace. It is equally easy to insert a word, sentence or paragraph in the middle of a document.

Word processors usually support these features (and a few others).

- Cut and paste: Allows you to remove (cut) a section of text and insert (paste) it somewhere else.
- Find and replace: Allows you to direct the word processor to search for a particular word or phrase. You can also direct the word processor to replace one group of characters with another everywhere that the first group appears.
- Word wrap: The word processor automatically moves to the next line when you have filled one line with text, and it will readjust text if you change the margins.
- Print: Allows you to send a document to a printer to get hard copy.
- Font specifications: Allows you to change fonts within a document. For example, you can specify bold, italics, and underlining. Most word processors also let you change the font size and the typeface.
- Graphics: Allows you to include illustrations and graphs in a document. Some programs let you create illustrations within the word processors; others let you insert a picture from a different program.
- Headers, footers and page numbering: Allows you to specify customized headers and footers that the word processor will put at the top and bottom of every page. The word processor automatically keeps track of page numbers so that the correct number appears on each page.
- Layout: Allows you to specify different margins within a single document and to specify various methods for indenting paragraphs – how much space you leave between the margins and the paragraphs.
- Merge: Allows you to merge text from one file into another file. This is particularly useful for generating many files that have the same format but different data. Generating mailing labels is the classic example of using merges.
- Spell checker: A utility that allows you to check the spelling of words. It will highlight any words that it does not recognize.
- Thesaurus: Allows you to search for synonyms without leaving the word processor.

The line dividing the word processor from desktop publishing systems is constantly shifting. In general, though, DTP applications support finer control over layout and more support for full-colour documents.

### III. Find the English equivalent of the following words in the text.

перепечатывать

удалять

вставить

вырезать

найти

заменять

искать

перенос слов

строка

изменять

поле

шрифт

жирный (о шрифте)

курсивный (о шрифте)

подчеркивание

размер шрифта

вид шрифта

заголовок, верхний колонтитул

нижний колонтитул

нумерация страниц

соединять, сливать

расположение (текста)

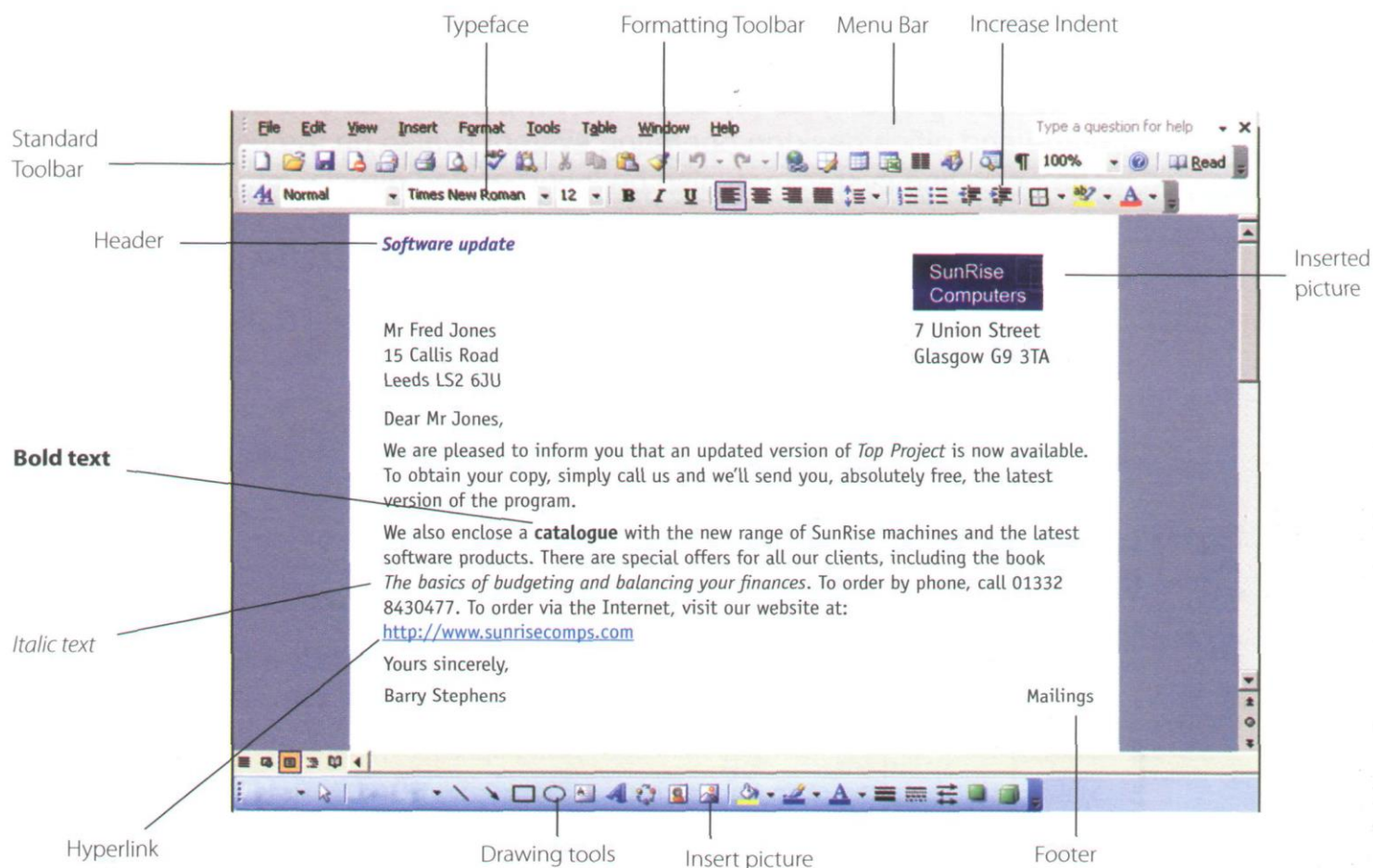
отступ

программа проверки орфографии

выделять

словарь синонимов и антонимов

### IV. Look at this screenshot from Microsoft Word and translate the labelled features and functions.



### V. Match words from the text with these definitions.

1. a program used for preparing documents and letters
2. a row of words that open up menus when selected
3. the distinctive design of letters and characters, e.g. Arial, Courier
4. text printed in the top margin
5. text printed in the bottom margin

6. the way text is arranged on the page, including margins, paragraph format, columns and etc.
7. a function that enables you to combine two files into one

## VI. Complete these statements with a term.

1. A ... consists of three elements: typeface, type style and type size; for example Arial bold at 9 points.
2. Notice that when you get to the end of each line, Word starts a new line automatically. It moves the word you are typing to a new line when it enters an invisible margin running down the right-hand side of the screen. This feature is called ... .
3. ... and ... lets you find a word and change it into another word throughout the text.
4. A good ... program can be used not only to rectify accidental spelling mistakes and typing errors, but also to speed typing input.
5. Many word processor include a ..., so you can look for words with similar meanings.
6. The ... contains a row of icons that perform particular actions when clicked.
7. ... a paragraph involves moving your writing in from the margins of the page. For example, a left indent is the distance between the left margin and the text.
8. The ... and ... commands allow you to specify customized texts at the top and bottom of every page.

## VII. Listen to two friends and complete the dialogue.

**Anna:** Ben, do you know how can I move this paragraph? I want to put it at the end of this page.

**Ben:** Er ... I think so. (1) ..., use the mouse to select the text you want to move. (2) ... choose the *Cut* command from the Edit menu.

**Anna:** (3) ...?

**Ben:** Yes. The selected text disappears and goes onto the clipboard. (4) ... you find where you want the text to appear and you click to position the insertion point there.

**Anna:** Mm, OK. Is that ...?

**Ben:** Yes, if that's where you want it. ..., choose *Paste* from the Edit menu, or hold down *Ctrl* and press *V*. (7) ..., check that the text has appeared in the right place.

**Anna:** OK, I've (8) ... . Is that (9) ...?

**Ben:** Yes, that's it. If you make a mistake, you can choose *Undo* from the Edit menu, which will reverse your last editing command.

**Anna:** Brilliant! Thanks a lot.

**Ben:** That's OK, it's my pleasure.

## VIII. Complete these instructions for how to *Copy* and *Paste* in Word with verbs from the box.

click (×2)	select	position	right-click	drag
------------	--------	----------	-------------	------

1. First, ... the text you wish to copy. To select text, ... the mouse over the portion of the text that you want to copy. This part should then be highlighted.
2. Then ... on the *Copy* icon on the Standard Toolbar. This copies the selected text to an invisible clipboard.
3. Next, ... the cursor where you want the text to appear.
4. Finally, ... the *Paste* icon. This inserts the content of the clipboard at the insertion point. As well as the icons on the toolbar, you can use the keys *Ctrl* + *C* for *Copy*, and *Ctrl* + *V* for *Paste*. These options also come up if you ... the selected text.

**IX. Find the adverbs in the text and form adjectives from the adverbs.**

**X. Retell the text.**

## Spreadsheets and databases

### I. Read and pronounce correctly.

**spreadsheet** (n) – ['sprɛdʃi:t]

**finance** (n) – ['fama:ns]

**figure** (n) – ['fi:gə]

**row** (n) – [rəʊ]

**column** (n) – ['kɒləm]

**equation** (n) – [i'kwɛɪʒ(ə)n]

**percentage** (n) – [pə'sentɪdʒ]

**alignment** (n) – [ə'laɪnmənt]

### II. Read and translate the text using a dictionary.

#### Spreadsheet basic

A spreadsheet program helps you manage personal and business finances. Spreadsheets, or worksheets, are mathematical tables with show figures in rows and columns.

A row is a horizontal line of boxes, labelled with a number.

A column is a vertical line of boxes, labelled with a letter.

A cell is the intersection of a column and a row. You enter data into the active cell. A cell can hold three types of data: text, numbers and formulae.

Formulae are entries that have an equation which calculates the value to display; we can use them to calculate totals, percentages, discounts, etc.

Spreadsheets have many built-in functions, pre-written instructions that can be carried out by referring to the function by name. For example, =SUM(D2:D7) means add up all the values in the cell range D2 to D7.

The format menu lets you choose font, alignment, borders, etc.

### III. Find the English equivalent of the following words in the text.

электронная таблица

вычислять

ряд, строка

складывать

колонка, столбец

выравнивание

ячейка

### IV. Look at the text and find the terms which correspond with these definitions.

1. software which allows data to be displayed and managed in a table format.
2. it goes up and down and has letter labels
3. it goes across and has number labels
4. an area in a spreadsheet which contains data
5. the current cell where you enter information mathematical equation that help you calculate and analyze data
6. ready-to-use formulae that help you perform specialized calculations, e.g. SUM, AVERAGE, etc.

### V. Listen to Lucy Boyd giving a training course on basic Excel and answer the questions.

1. What is a spreadsheet?
2. What are spreadsheets used for?
3. What types of data can be keyed into a cell?
4. What happens if you change the value of a cell?

**VI. Listen again and decide whether these sentences are true or false. Correct the false ones.**

1. A spreadsheet displays information in the form of a table with a lot of columns and rows.
2. In a spreadsheet you can only enter numbers and formulae.
3. You cannot change the width of columns.
4. Spreadsheet programs can generate a variety of charts and graphs.
5. Spreadsheets cannot be used as databases.

**VII. Find the verbs in the text in the form of the Present Indefinite (Simple) tense and make up questions to these sentences.**

**Databases**

**I. Read and pronounce correctly.**

**database** (n) - ['deɪtəbeɪs]

**management** (n) - ['mænɪdʒmənt]

**field** (n) - [fi:ld]

**separate** (adj) - ['sep(ə)rət]

**successful** (adj) - [sək'sesfəl]

**query** (n) - ['kwɪəri]

**criteria** (n) - [kraɪ'tɪəriə]

**alphabetical** (adj) - [ˌælfə'betɪk(ə)l]

**relational** (adj) - [rɪ'leɪʃ(ə)n(ə)l]

**commission** (n) - [kə'mɪʃ(ə)n]

**simultaneously** (adv) - [ˌsɪml'teɪnəsli]

**II. Read and translate the text using a dictionary.**

A **database** is a collection of **related** data, and the software used in databases to store, organize and **retrieve** the data is called the **database management system**, or DBMS. However, we often use the word database to cover both meanings. A database can manage any type of data, including text, numbers, images, sound, video and hyperlinks (links to websites).

Information is entered into the database via **fields**. Each field holds a separate piece of information, and the fields are grouped together in **records**. Therefore, a record about an employee might consist of several fields which give their name, address, phone number, date of birth, salary and length of employment with the company.

Records are grouped together into files which hold large amounts of information. Files can easily be updated – you can always change fields, **add** new records or **delete** old ones. An electronic database is much faster to consult and update than a card index system and occupies a lot less space. With the right software, you can keep track of stock, sales, market trends, orders and other information that can help your company stay successful.

A database program lets you create an **index** – a list of records ordered according to the **content** of certain fields. This helps you to **search** the database and sort records into numerical or alphabetical order very quickly. Modern databases are **relational** – that is, they are made up of related files: customers and orders, vendors and purchases, students and tutors, etc. Two database files can be related as long as they have a common field. A file of students, for example, could include a field called Tutor ID and another file with details of the tutors could include the same field. This key field can be used to relate the two files. Databases like Oracle, DB2 and MySQL can manage these relationships.



A database **query function** allows you to extract information according to certain conditions or criteria. For example, if a managing director wanted to know all the customers that spend more than \$8,000 per month, the program would search on the name field and the money field simultaneously.

The best database **packages** also include network facilities, which can make businesses more productive. For example, managers of different departments can have direct access to a common database. Most aspects of the program can be protected by **user-defined** password and other security devices. For example, if you wanted to share an employee's personal details but not their commission, you could protect the commission field.

### III. Read and learn the vocabulary.

**a database** – база данных

**related** – родственный, связанный

**database management system** – система управления базами данных

**to retrieve** – восстанавливать

**a field** – поле

**a record** – запись

**an index** – индекс

**to add** – добавить

**to delete** – удалить

**a content** – содержимое

**to search** – искать

**relational** – реляционный

**a query function** – функция запроса

**to extract** – извлекать

**a package** – программный пакет

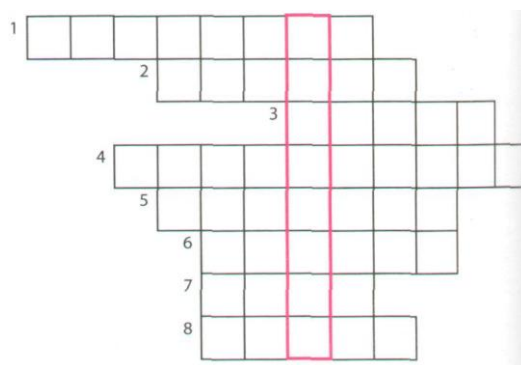
**user-defined** – заданный пользователем

### IV. Complete these statements about databases using information from the text.

1. A database management system is used to ... .
2. Information is entered into a database via ... .
3. Each fields holds ... .
4. Updating a file means ... .
5. Some advantages of a database program over a manual filing system are: ... .
6. Access to common database over a network can be protected by using ... .

### V. Solve the clues and complete the puzzle.

1. A collection of data stored in a PC in a systematic way.
2. A unit of a database file made up of related fields.
3. A single piece of information in a record.
4. A ... database maintains separate, related files, but combines data elements from the files for queries and reports.
5. Some companies have several computers sharing a database over a ... .
6. To look for specific information, for example the name of an employee.
7. To classify records into numerical or alphabetical order.
8. A tool that allows you to extract information that meets certain criteria.



### VI. Find the verbs in the Passive Voice in the text and make up questions to these sentences.

## **VII. Translate the sentences into English.**

1. Системное программное обеспечение контролирует базовые функции компьютера.
2. Операционная система – набор программ, которые контролируют оборудование.
3. Указатель – стрелка, контролируемая мышью, которая позволяет выбирать опции из меню.
4. Фон экрана, которые отображает иконки, программы, файлы и папки называется рабочим столом.
5. Шрифт состоит из трех элементов: вид, размер и стиль.
6. Текстовый редактор автоматически переходит на новую строку, когда вы заполните одну строку.
7. База данных – компьютеризированная система учета информации.
8. Индекс выполняет те же функции, что и конец книги в библиотеке.

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