МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

Часть I

Рекомендовано редакционно-издательским советом федерального государственного бюджетного образовательного учреждения высшего профессионального образования «Самарский государственный аэрокосмический университет имени академика С.П. Королева (национальный исследовательский университет)» в качестве учебных заданий по английскому языку

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В первую (лексическую) часть входят одиннадцать глав (Units), работа с которыми направлена на расширение активного глоссария студентов по данному предмету и формированию навыков перевода с английского языка на русский язык. Часть вторая – грамматическая.

Предназначены для студентов 6 факультета I курса, чей профилирующий предмет – информационные технологии.

1. Read the text understand it.

WHEN BUYING A HARD DISK...

Hard disks have important advantages over floppy disks: they spin at a higher speed, so you can store and retrieve information much faster than with floppies. They can also hold vast amounts of information, from 500 MB up to several gigabytes. Apart from this, both types of disks work in the same way. To directly access the necessary information, the read/write heads of rigid disks seek the required tracks and sectors, and then transfer the information to the main memory of the computer or to another form of storage, all of which is done in a few milliseconds (ms).

Bearing in mind that you always need disk storage, it is good sense to ask yourself some vital questions: What (size) capacity do I need? What speed can I use? What kind of storage device is the most suitable for my requirements? If you only use word- processing programs, you will need less storage capacity than if you use CAD, sound and animation programs. For most users, 2 GB on the hard disk is enough.

Now let's turn our attention to speed. Access times vary from 8 ms to 20 ms. Access time' - or seek time - is the time it takes your read/write heads to find any particular record. You have to distinguish clearly between seek time (e.g. 20 ms) and 'data transfer rate' (the average speed required to transmit data from a disk system to the RAM, e.g. at 20 megabits per second). Remember that the transfer rate also depends on the power of your computer.

When buying a hard disk you should consider the kinds of drive mechanisms and products available. There are 'internal' and 'external' drives which are both fixed hard drives, i.e. rigid disks sealed into the drive unit, either within or attached to the computer. A third type of hard drive, known as 'removable', allows information to be recorded on 'cartridges', which can be removed and stored off-line for security purposes. Popular removable hard disks include Jaz and Zip drives. A Jaz cartridge can store up to 2 GB of data, whereas a Zip drive can store up to 250 MB of data.

Finally, a few words about 'optical' technology: CD-ROMS and CD-Recordable drives have become a reality. However, magnetic hard disks are still preferred for personal data storage whereas optical discs are used for recording large amounts of information such as a dictionary or encyclopedia.

The words to the text

spin - вращаться;
retrieve - извлекать;
vast - огромный;

apart from - кроме;
vital - жизненно важный;
available - доступный, имеющийся в наличии;
whereas - тогда как.

ms: milliseconds (thousandths of a second)
CAD: computer-aided design
CD-ROM: acronym for Compact Disk - Read Only Memory

2. Read these sentences and decide if they are true (T) or false (F).

1. Hard disks use rigid rotating disks.
2. 'Seek time' refers to the average time required for the recording heads to move and access data.
3. If you use multimedia applications, you need the same storage capacity as required for word processors.
4. 'Access time' and 'data transfer rate' mean the same.
5. Optical disks are magnetic.
6. Each Jaz cartridge can hold up to 1,000 MB of data.
7. CD-ROM disks are used for storage of massive amounts of information

3. Make phrases or words by combining *hard* and *disk* with these words. Give the meaning of each phrase or word in Russian.

Sell	drive	drugs	optical	magnetic
labour	capacity	directory	time	ware
currency	compact	internal	worker	copy

4. Answer the questions.

1. What is the main function of a hard disk?
2. What unit is used to measure hard disk capacity?
3. Can you think of one advantage that hard disks have over floppies?
4. Which is more efficient: a new hard disk or one that has been used for a few months?
5. How does fragmentation affect a computer's performance?
6. How does a defragmenting program help restore a fragmented disk?

1. Read the text, try to understand it.

OPTICAL DISKS AND DRIVES

Optical disks can store information at much higher densities than magnetic disks. Thus, they are ideal for multimedia applications where images, animation and sound occupy a lot of disk space. Besides, they are not affected by magnetic fields. This means that they are secure and stable, e.g. they can be transported through airport metal detectors without damaging the data. However, optical drives are slower than hard drives. While there are hard drives with an average access time of 8 ms, most CD-ROM drives have an access time of 150 to 200 ms.

There are various types of optical drives:

• **CD-ROM** systems offer everything, from shareware programs to dictionaries and encyclopedias, from multimedia databases to 3-D games. A lot of institutions have discovered that CD- ROM is the most economical way of sharing information. In fact, one CD-ROM disk (650 MB) can replace 300,000 pages of text (about 500 floppies), which represents a lot of savings in distributing materials and corporate databases. In addition, CD-ROM drives can play music CDs while you work. Yet CD-ROM technology has one disadvantage: you cannot write anything onto a CD-ROM disk. You can only 'read' it, like a book.

• **CD-Recorders** come in two different forms: **CD-R** and **CD- RW.** CD-R machines record on CD-R (write-once) disks, allowing you to create and duplicate CDs. They are used to backup hard disks or to distribute and archive information. In fact, these systems are the modem version of old WORM (write once, read many) disks. CD-RW machines hold CD-RW (rewritable) disks that you can erase and re-use, just as you would do with a hard disk.

The future of optical storage is called DVD (digital versatile disk). A DVD-ROM can hold 17 GB, about 25 times an ordinary CD-ROM. For this reason, it can store a large amount of multimedia software and complete Hollywood movies in different languages. They can also play music CDs and CD-ROMs. However, DVD-ROMs are 'read-only' devices. To avoid this limitation, companies also produce DVD rewritable drives.

• **Magneto-optical (MO) drives** use both a laser and an electromagnet to record information. Consequently, MO disks are rewritable, i.e. they can be written to, erased, and then written again. They usually come in two formats: (i) 5,25" cartridges can hold more than 2 GB; (ii) 3,5" floptical disks have a capacity of 230 to 640 MB. They are ideal for back-up and portable mass storage.

The words to the text

density - плотность;
affect - влиять;

shareware - испытательная версия программы;
share - делить, использовать совместно;
versatile - многосторонний, многогранный;
erase - стирать;
back-up - сохранять резервную копию.

2. Read these sentences and decide if they are true (T) or false (F).

A CD-ROM disk is very different from a compact music disk.
You need a hard disk drive to read CD-ROM disks.
The data on a CD-ROM is read with a laser beam.
A typical CD-ROM disk can hold 100 MB.
The data on a CD-ROM can be changed or 'written' to.
A CD-ROM is a good way of storing large amounts of information (images, sounds, applications, etc.).
CD-ROM drives cannot play audio CDs.

3. Summarize the information on *technical specifications* and *use* of CD-ROM, CD-Recorder, DVD and Magneto-optical drives.

4. Answer the questions.

1. What kind of technology is used by CD-ROM disks and drives?
2. What does 'CD-ROM' stand for?
3. How do you say these expressions in your language?
   compact disk CD-ROM disk drive
   laser technology erasable optical disk
4. What are the advantages and disadvantages of optical disks?

UNIT 3

1. Read the text, try to understand it.

GUIs

The term **user interface** refers to the standard procedures the user follows to interact with a particular computer. A few years ago, the way in which users had access to a computer system was quite complex. They had to memorize and type a lot of commands just to see the content of a disk, to copy files or to respond to a single prompt. In fact, only experts used computers, so there was no need for a user-friendly interface. Now, however, computers are used by all kinds of people and as a result there is a growing emphasis on the user interface.

A good user interface is important because when you buy a program you want to use it easily. Moreover, a graphical user interface saves a lot of time: you don't need to memorize commands in order to execute an application; you only have to point and click so that its content appears on the screen.

Macintosh computers - with a user interface based on graphics and intuitive tools - were designed with a single clear aim: to facilitate interaction with the computer. Their interface is called WIMP: **Window, Icon, Mouse** and **Pointer** and software products for the Macintosh have been designed to take full advantage of its features using this interface. In addition, the ROM chips of a Macintosh contain libraries that provide program developers with routines for generating windows, dialog boxes, icons and pop-up menus. This ensures the creation of applications with a high level of consistency.

Today, the most innovative GUIs are the Macintosh, Microsoft Windows and IBM OS/2 Warp. These three platforms include similar features: a desktop with icons, windows and folders, a printer selector, a file finder, a control panel and various desk accessories. Double-clicking a folder opens a window which contains programs, documents or further nested folders. At any time within a folder, you can launch the desired program or document by double- clicking the icon, or you can drag it to another location.

The three platforms differ in other areas such as device installation, network connectivity or compatibility with application programs.

These interfaces have been so successful because they are extremely easy to use. It is well known that computers running under an attractive interface stimulate users to be more creative and produce high quality results, which has a major impact on the general public.

The words to the text

emphasis - особое значение;
content - содержание;
facilitate - облегчать, содействовать, способствовать;

interaction - взаимодействие;
feature - характеристика;
consistency - устойчивость, логичность, взаимодействие;
folder - папка;
impact - сильное воздействие, влияние.

2. Find these words in the text and guess their meaning in Russian.

1 user interface	2 commands	3 tools
4 program developer	5 platform	6 desktop
7 file finder	8 nested folders	

3. Read the definitions and then find the interface elements given below on the screen.

Window: a viewing area less than or equal to the screen size. By using different windows you can work on several documents or applications simultaneously.

Pull-down menu: a menu that the user ' pulls down' from a name in the menu bar at the top of the screen by selecting the name with the mouse.

The pointer: an arrow, controlled by the mouse, that allows you to move around the screen or to scroll up and down through the document or to give commands.

Icons: graphic images (or intuitive symbols) used to represent an object or task.

Folders: containers for documents and applications, similar to the subdirectories of a PC platform.

window	boxes	menu bar	CD-ROM
icons	scroll	pull-down menu	application
Wastebasket (*trash* in AE)	documents	hard disk	printer
removable disk	pointer	folders	floppy disk

4. Answer the questions.

1. What does the abbreviation 'GUI' stand for?
2. What is the contribution of Macintosh computers to the development of graphic environments?
3. What does the acronym 'WIMP' mean?
4. What computing environments based on graphics are mentioned in the text?
5. How do you run a program on a computer with a graphical interface?
6. Can you give two reasons for the importance of user-friendly interfaces?

1. Read the text, try to understand it.

WORD-PROCESSING FACILITIES

Writing letters, memos or reports are the ways most people use computers. They manipulate words and text on a screen - primarily to print at some later time and store for safe keeping. Computers alleviate much of the tedium associated with typing, proofing and manipulating words. Because computers can store and recall information so readily, documents need not be retyped from scratch just to make corrections or changes. The real strength of word processing lies in this ability to store, retrieve and change information. Typing is still necessary (at least, for now) to put the information into the computer initially, but once in, the need to retype only applies to new information.

Word processing is more than just typing, however. Features such as **Search** and **Replace** allow users to find a particular phrase or word no matter where it is in a body of text. This becomes more useful as the amount of text grows. Word processors usually include different ways to view the text. Some include a view that displays the text with editor's marks that show hidden characters or commands (spaces, returns, paragraph endings, applied styles, etc.).

Many word processors include the ability to show exactly how the text will appear on paper when printed. This is called WYSIWYG (What You See Is What You Get, pronounced 'wizzywig'). WYSIWYG shows **bold,** *italic,* underline and other type style characteristics on the screen so that the user can clearly see what he or she is typing. Another feature is the correct display of different typefaces and **format** characteristics (margins, indents, super- and sub-scripted characters, etc.). This allows the user to plan the document more accurately and reduces the frustration of printing something that doesn't look right.

Many word processors now have so many features that they approach the capabilities of **layout applications** for desktop publishing. They can import graphics, format multiple columns of text, run text around graphics, etc.

Two important features offered by word processors are automatic **hyphenation** and **mail merging.** Automatic **hyphenation** is the splitting of a word between two lines so that the text will fit better on the page. The word processor constantly monitors words typed and when it reaches the end of a line, if a word is too long to fit, it checks that word in a hyphenation dictionary. This dictionary contains a list of words with the preferred places to split it. If one of these cases fits part of the word at the end of the line, the word processor splits the word, adds a hyphen at the end and places the rest on the next line. This happens extremely fast and gives text a more polished and professional look.

Mail merge applications are largely responsible for the explosion of 'personalized' mail. Form letters with designated spaces for names and addresses are stored as documents with links to lists of names and addresses of potential buyers or clients. By designating what information goes into which blank space, a computer can process a huge amount of correspondence substituting the 'personal' information into a form letter. The final document appears to be typed specifically to the person addressed.

Many word processors can also generate tables of numbers or figures, sophisticated indexes and comprehensive tables of contents.

The* words to *the text

margin - поле;
indent - абзац, отступ;
superscript - верхний индекс;
subscript - нижний индекс/подпись;
capability - мощность, производительность;
split - разделять, делить на части, распределять;
hyphen - дефис;
substitute - заменять;
sophisticated - сложный, усовершенствованный.

2. Look at the words and complete the following sentences with them.

type style	WYSIWYG	format	indent
font menu	justification		mail merging

1. ……stands for 'What you see is what you get'. It means that your printout will precisely match what you see on the screen.
2. ……refers to the process by which the space between the words in a line is divided evenly to make the text flush with both left and right margins.
3. You can change font by selecting the font name and point size from the ……
4. …… refers to a distinguishing visual characteristic of a typeface; 'italic', for example is a …… that may be used with a number of typefaces.
5. The …… menu of a word processor allows you to set margins, page numbers, spaces between columns and paragraph justifications.
6. …… enables you to combine two files, one containing names and addresses and the other containing a standard letter.
7. An …… is the distance between the beginning of a line and the left margin, or the end of a line and the right margin. Indented text is usually narrower than text without …… .

3. Match the words with their explanations.

retrieve	Text printed in the top margin.
typefaces	Recover information from a computer system.
header	Letter, number or symbol that appears below the baseline of the row of type; commonly used in maths formulas.
footer	Text printed in the bottom margin.
subscripted character	Division of words into syllables by a short dash or hyphen.
hyphenation	Styles for a set of characters; sometimes called 'fonts'.

4. Answer the questions.

1. What is a word processor?
2. What makes word processors superior to traditional typewriters?

5. Make a list of the most important features offered by word processors.

1. Read the text, try to understand it.

BASIC FEATURES OF DATABASE PROGRAMS

With a **database** you can store, organize and retrieve a large collection of related information on computer. If you like, it is the electronic equivalent of an indexed filing cabinet. Let us look at some features and applications.

Information is entered on a database via **fields.** Each field holds a separate piece of information, and the fields are collected together into **records.** F or example, a record about an employee might consist of several fields which give their name, address, telephone number, age, 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. With the right database software, you are able to keep track of stock, sales, market trends, orders, invoices and many more details that can make your company successful.

Another feature of database programs is that you can automatically look up and find records containing particular information. You can also search on more than one field at a time. For example, if a managing director wanted to know all the customers that spend more than £7,000 per month, the program would search on the name field and the money field simultaneously.

A computer database is much faster to consult and update than a card index system. It occupies a lot less space, and records can be automatically sorted into numerical or alphabetical order using any field.

The best packages also include networking facilities, which add a new dimension of productivity to businesses. For example, managers of different departments can have direct access to a common database, which represents an enormous advantage. Thanks to security devices, you can share part of your files on a network and control who sees the information. Most aspects of the program can be protected by user-defined passwords.

For example, if you wanted to share an employee's personal details, but not their commission, you could protect the commission field.

In short, a database manager helps you control the data you have at home, in the library or in your business.

The words to the text

invoice - счет;
simultaneously - одновременно;
dimension - измерение;
commission - вознаграждение (денежное).

2. Using the information in the text, complete these statements.

1. A database is used to …… .
2. Information is entered on a database via …… .
3. Each field holds …… .
4. 'Updating' a file means …… .
5. The advantages of a database program over a manual filing system are …… .
6. Access to a common database can be protected by using …… .

3. Complete the sentences by using a term from the list.

database	field	layout merging
record	sorted	updated

1. In order to personalize a standard letter you can use 'mail …… ' (a technique which consists of combining a database with a document made with a word processor).
2. Records can be automatically …… into any order.
3. You can decide how many fields you want to have on a …… .
4. Files can easily be …… by adding new information or deleting the old one.
5. A …… program can be used to store, organize and retrieve information of any kind.
6. The …… of the records can be designed by the user.
7. Each piece of information is given in a separate …… .

4. Answer the questions.

1. What is a database?
2. What tasks can be performed by using a database?
3. What do terms mean in your language: file, record, field?

1. Read the text, try to understand it.

INTERNET SOFTWARE

Getting connected

The language used for data transfer on the Internet is known as TCP/IP (transmission control protocol/Internet protocol). This is like the Internet operating system.

The first program you need is a PPP (point to point protocol) driver. This piece of software allows the TCP/IP system to work with your modem; it dials up your Internet service provider (ISP), transmits your password and log-in name and allows Internet programs to operate.

E-mail

E-mail is your personal connection to the Internet. It allows you to exchange messages with people all over the world. It can include text, pictures, and even audio and animation.

When you set up an account with an ISP, you are given a unique address and anyone can send you e-mail. The mail you receive is stored on the server of your ISP until you next connect and download it to your hard disk.

Web browsers

The Web is a hypertext-based system where you can find news, pictures, games, online shopping, virtual museums, electronic magazines - any topic you can imagine.

You navigate through the Web using a program called a 'browser', which allows you to search and print Web pages. You can also click on keywords or buttons that take you to other destinations on the net. This is possible because browsers understand hypertext markup language (HTML), a set of commands that indicate how a Web page is formatted and displayed.

IRC, audio and video chatting

IRC - Internet relay chat - is a system for realtime (usually typed) conversation. It's easy to use. To start a chat session you run an IRC program, which connects you to an IRC server - a computer dedicated to IRC.

Then you join a channel, which connects you to a single chat area. Next you type a message and the other participants can see it.

Internet telephone and video chatting are based on IRC protocols. Videoconferencing programs enable users to talk to and see each other, and collaborate. They are used in intranets - company networks that use Internet software but make their Web site accessible only to employees and authorized users.

FTP and Telnet

With **FTP** software you can copy programs, games, images and sounds from the hard disk of a remote computer to your hard disk. Today this utility is built into Web browsers.

A **Telnet** program is used to log directly into remote computer systems. This enables you to run programs kept on them and edit files directly.

Newsgroups

Newsgroups are the public discussion areas which make up a system called 'Usenet'. The contents of the newsgroups are contributed by people who send articles (messages) or respond to articles. They are classified into categories: *comp* (computers), *misc* (miscellaneous), *news* (news), *rec* (recreation), *soc* (society), *scl* (science), *talk* and *alt* (alternative).

The words to the text

transmission - передача, перенос;
markup - маркированный;
participant - участник;
collaborate - работать совместно, сотрудничать;
utility - служебная программа, обслуживающая программа;
enable - давать возможность, включать, запускать работу (какое-л. устройство);
remote - отдаленный, дистанционный.

2. Which Internet utility would you use to do each of these tasks?

e-mail	send a message to another person via the Internet
Web browser	transfer files from the Internet to your hard disk
Newsreader	have a live conversation (usually typed) on the Internet
IRC/chat program	connect to a remote computer by entering certain instructions and run programs on it
FTP software	take part in public discussion areas, called newsgroups
Videoconferencing	fetch and view Web pages on the Internet
Telnet	participate in live conversations, using text, audio and video

3. Choose the right answer.

1. 1. An Internet service provider (ISP) is...

a) a program that connects you to the Internet.
b) a company that gives you access to the Internet.
2. HTML is...
a) the software which allows you to fetch and see Web pages.
b) the codes used to create hypertext documents for the Web.
3. An IRC channel is...
a) an IRC discussion area.
b) a computer system dedicated to IRC.
4. Usenet is...
a) a big system of public discussion groups.
b) a newsgroup.
5. An intranet is...
a) like a small version of the Internet inside a company.
b) a commercial online service.

4. Answer the questions.
1. What is the Internet?
2. What can you do on the Internet?
3. Have you ever surfed the Web?
4. What are your favorite Web sites?

5. Read the definitions and find the following features in a Web **page.**

URL: uniform resource locator, the address of a file on the Internet. A URL looks like this: http://www.netscape.com/

-'http://' means hypertext transfer protocol and tells the program to look for a Web page

- 'www' means World Wide Web

- 'netscape.com' is the domain name and tells people that it is a commercial enterprise

navigation buttons: buttons on the toolbar which allow you to go back or forward to other Web pages. You can also return to your start-up page or stop the transfer when the circuits are busy.

links: shortcuts (underlined text or images) that, when clicked, take you to other Web pages.

security on the Web: just a few Web sites are secure. When the page is not encrypted, the security lock is open.

1. URL address.
2. Basic functions of the toolbar:
a) go to the home page;
b) retrace your steps;
c) go forward one page;

d) interrupt the current transfer;
e) update a page;
f) find words within a page;
g) load and display the page's images.
3. Clickable image link.
4. Clickable hypertext link.

6. Look at these tasks and choose the most suitable Web site to find this kind of information.

1. Read about environmental problems.
2. Get news reports.
3. Find out about specific hardware and software.
4. Make flight reservations.
5. Read about films and Hollywood awards.
6. Search for Web addresses.

http://www.yahoo.com/
http://www.greenpeace.org/
http://www.ibm.com/
http://wwvv.fly.virgin.com/
http://www.telegraph.co.uk/
http://www.oscars.org/

1. Read the texts and match them with the headings.

Sound, Music, MIDI

A CD-ROM titles full of pictures, action and sound!

B CD-ROM is more than just heavy metal

C The potential of using multimedia

D Multimedia magic!

1.....

Until now multimedia applications have been used mainly in the fields of information, training and entertainment. For example, some museums, banks and estate agents have information kiosks that use multimedia. Several companies produce training programs on optical disks, and marketing managers use presentation packages (like Microsoft PowerPoint or Lotus Freelance Graphics for Windows) to make business presentations. They have all found that moving images, sound and music involve viewers emotionally as well as inform them, and make their message more memorable.

2.....

Sound is an important component of the multimedia approach. The effective use of sound can be used to grab the attention of the participant, set the mood or underscore a point. The most popular way of delivering sound is the hardware sound board. Such boards offer two important capabilities. The first of these is a built-in stereo synthesizer complete with a built-in audio amplifier. Just connect a set of speakers and you've got instant sound, music and speech capabilities. The second capability is the musical instrument digital interface, or MIDI. This is a specialized serial interface that allows an electronic musical instrument to communicate with other MIDI-equipped instruments or PCs.

3.....

Between 80 and 90 per cent of all multimedia applications are distributed on CD-ROM, some just on CD, some on several media (as with Autodesk's Multimedia Explorer, which comes with both a CD-ROM and diskettes). The reasons for CD-ROM's popularity in multimedia is simple - a single CD can contain 650 MB of data. That's over 500 floppy disks' worth of programs, sound and graphics. The newest CD-ROM standard, CD-ROM XA (for extended Architecture) uses data compression to fit even more on these shiny discs. Many XA drives are also compatible with Kodak's PhotoCD technology, that digitizes photographs and places them on a CD- ROM.

4.....

Electronic encyclopedias integrate text, pictures and sound, and usually have a video section with a full motion video window. *The Compton's Encyclopedia* enables you to read about whales, look at photos of whales, listen to whale songs and view an animated sequence showing whale movements through the ocean. Similarly, the *Grolier Encyclopedia* lets you read about birds, view pictures of birds, and listen to recordings of their songs.

Other CD-ROMs include dictionaries, guides and courses about history, science, the human body, cinema, literature, foreign languages, etc. For example, *Cinemania* from Microsoft has information on thousands of films and photographs, reviews, biographies and dialogues from films.

The words to the text

estate agent - агент по продаже, покупке недвижимости, риэлтер;
underscore - подчеркивать, акцентировать;
amplifier - усилитель;
comprehension - понимание, осмысление, постижение, способность;
compatible - совместимый;
whale - кит;
sequence - последовательность, ряд, цикл.

2. Read these sentences and decide if they are true (T) or false (F).

1. Multimedia applications do not use huge amounts of data.
2. You don't need to have a sound board on your PC to hear speech and music.
3. Most multimedia software is distributed on magnetic disks.
4. Kodak's PhotoCD technology is not compatible with many CD-ROM drives.
5. There are no language courses available on CD-ROM.

3. Match the words with their explanations.

computer animation	Small programs inside the OS designed to work with audio and video files.
video computing	A code for the exchange of information between PCs and musical instruments.
MIDI interface	A drive used to handle CD-ROM disks.
CD-ROM player	Manipulating and showing moving images recorded with a video camera or captured from a TV or video recorder.
multimedia control panels	Images which move on the screen.

4. Answer the questions.

1. What is multimedia?
2. What is the advantage of computer multimedia presentations over TV and video?
3. Which system software is designed by Apple for multimedia work?

a) Windows with Multimedia control panels
b) QuickTime

4. Can an existing PC be adapted for multimedia applications?

1. Read the text and try to understand it.

SECURITY AND PRIVACY ON THE INTERNET

There are a lot of benefits from an open system like the Internet, but we are also exposed to hackers who break into computer systems just for fun, as well as to steal information or propagate viruses. So how do you go about making online transactions secure?

Security on the Web

The question of security is crucial when sending confidential information such as credit card numbers. For example, consider the process of buying a book on the Web. You have to type your credit card number into an order form which passes from computer to computer on its way to the online bookstore. If one of the intermediary computers is infiltrated by hackers, your data can be copied. It is difficult to say how often this happens, but it's technically possible.

To avoid risks, you should set all security alerts to high on your Web browser. Netscape Communicator and Internet Explorer display a lock when the Web page is secure and allow you to disable or delete 'cookies'.

If you use online bank services, make sure your bank uses digital certificates. A popular security standard is SET (secure electronic transactions).

E-mail privacy

Similarly, as your e-mail message travels across the net, it is copied temporarily on many computers in between. This means it can be read by unscrupulous people who illegally enter computer systems.

The only way to protect a message is to put it in a sort of 'envelope', that is, to encode it with some form of encryption. A system designed to send e-mail privately is *Pretty Good Privacy,* a freeware program written by Phil Zimmerman.

Network security

Private networks connected to the Internet can be attacked by intruders who attempt to take valuable information such as Social Security numbers, bank accounts or research and business reports.

To protect crucial data, companies hire security consultants who analyse the risks and provide security solutions. The most common methods of protection are passwords f or access conttol, encryption and decryption systems, and firewalls.

Virus protection

Viruses can enter a PC through files from disks, the Internet or bulletin board systems. If you want to protect your system, don't open e-mail attachments from strangers and take care when downloading files from the Web. (Plain text e-mail alone can't pass a virus.)

Remember also to update your anti-virus software as often as possible, since new viruses are being created all the time.

The words to the text

Crucial - ключевой, решающий (момент, проблема и т.д.);
intermediary - посредник, промежуточная, переходная форма;
alert - тревога, сигнал тревоги;
temporarily - временно, на время;
unscrupulous - неразборчивый в средствах, беспринципный;
intruder - навязчивый, назойливый человек;
hire - наем, прокат;
bulletin - сводка, информационное сообщение, сведения.

2. Complete the following sentences with the words from the text.

1. Users have to enter a p…… to gain access to a network.
2. You can download a lot of f…… or public domain programs from the net.
3. Hundreds of h…… break into computer systems every year.
4. A computer v…… can infect your files and corrupt your hard disk.
5. The process of encoding data so that unauthorized users can't read the data is known as e…… .
6. A f…… is a device which allows limited access to an internal network from the Internet.
7. You can include an a…… as part of your e-mail message.
8. This company uses d…… techniques to decode (or decipher) secret data.

3. Match the words with their explanations.

hacker	the process of encoding data so that unauthorized users can't read it
cookies	the process of decoding encrypted data transmitted to you
certificates	files that identify users and Web servers on the net, like digital identification cards
encryption	a person who obtains unauthorized access to computer data
decryption	small files used by Web servers to know if you have visited their site before

4. Answer the questions.

1. Is it technically possible for computer criminals to infiltrate into the Internet and steal sensitive information?
2. What is a hacker?
3. Can viruses enter your PC from the Internet?
4. Why is security so important on the Internet?
5. What security features are offered by Netscape Communicator and Internet Explorer?
6. What security standard is used by most banks to make online transactions secure?
7. How can we protect and keep our e-mail private?
8. What methods are used by companies to make internal networks secure?
9. Which ways can a virus enter a computer system?

1. Read the text, define what programming is.

PROGRAMMING

A modern digital computer is simply a device that follows instructions. These instructions tell the computer to perform specific actions such as writing information to the video screen, performing complex computations, or reading data from a floppy disk.

hi order to solve a problem using a computer, we must express the solution to the problem in terms of the instructions of the particular computer. A computer *program* is actually just a list of instructions necessary to solve a specific problem, and the creation of this instruction list is computer programming. Programming is the process of producing a set of instructions for a computer to make it perform a specified task. The task can be anything from the solution to a mathematical problem to the production of a graphics package.

The approach or method that is used to solve the problem is known as an *algorithm.* For example, if we wish to develop a program that tests if a number is odd or even, then the set of statements, which solves the problem, becomes the program. The method that is used to test if the number is even or odd is the algorithm. To develop a program, to solve a particular problem, we first express the solution to the problem in terms of an algorithm and then develop a program, which implements that algorithm. Then we can proceed to write the instructions necessary to implement the algorithm on a particular computer system. These instructions would be expressed in the statements of a particular computer language, such as BASIC, Pascal, or C.

The words to the text

digital	- цифровой;
device	- проект, устройство, прибор;
perform	- выполнять, делать, исполнять;
computation	- вычисление, подсчет, расчет;
solution	- решении;
creation	- создание;
approach	- метод, подход;
odd	- нечетный, случайный;
even	- ровный, четный;
particular	- данный, конкретный, особый;
implement	- выполнять, осуществлять, восполнять.

2. Look through the text and find equivalents to the following terms.

цифровой компьютер;
вывести информацию на (видео) экран;
сложные вычисления;
список инструкций (команд);
набор команд;
создание графического пакета;
число четное или нечетное;
разработать программу;
решить определенную проблему;
продолжить написание команд.

3. Choose the definitions to the following terms.

network	The part of the main memory which stores information temporarily while you are working. It requires a continuous power supply to retain information.
read only memory (ROM)	The programs and routines which allow a computer to operate; it usually consists of a group of programs which coordinate the software and hardware of a computer system.
program	The process by which a set of instructions is produced for a computer to make it perform a specified task. The task can be anything from the solution to a mathematical problem to the production of a graphics package.
programming	A system of computer devices (CPUs, printers) or 'nodes' interconnected so that information and resources can be shared by a large number of users.
random access memory (RAM)	A set of instructions for solving a specific problem by computer.
Operating system	Chips of memory containing information which is present and permanent

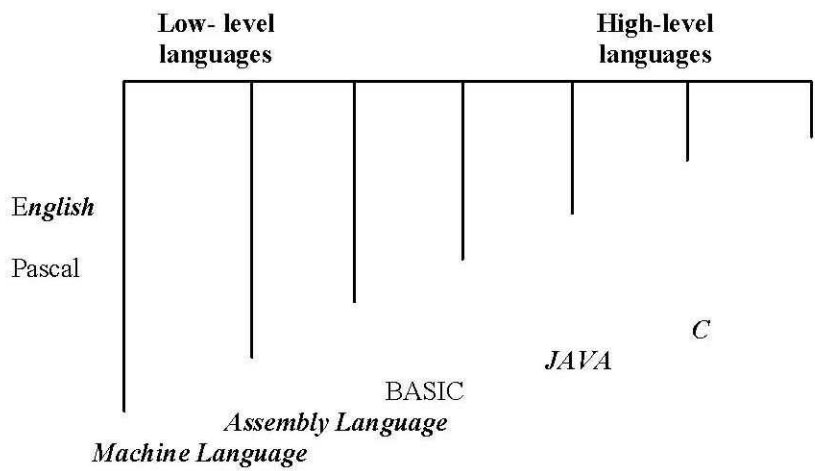
4. Answer the questions.

What is a modern digital computer?
What actions do the instructions tell the computer to perform?
What is a computer program?
What is programming?
What is an algorithm?
What should be done to develop a specific program?

1. Read the text, try to understand it.

PROGRAMMING LANGUAGES

There are alternatives to programming in machine and assembly language. Computer scientists have developed other languages which do not have these deficiencies. Languages are referred to as *high-level* or *low-level,* with high-level languages being closer to natural languages (such as English) and low-level languages being closer to machine language. The diagram below shows the relative position of several computer languages:



Because there still exists a one-to-one correspondence between each assembly language statement and a specific machine instruction, assembly languages are regarded as low-level languages.

Programs written in high-level languages have a number of advantages. First, they are easier to learn, understand and modify than machine and assembly language programs. Second, high-level languages are not dependent from the machine language of any one type of computer. Programs written in high-level languages can be run on any machine he type of programming, which we must choose for a concrete project, depends on the type of program that we want to make. for example, when programming is a driver for an operating system obviously we will use low-level programming. Whereas when programming great applications usually a higher level it is used, or a combination of critic parts written in low level languages and others in higher.

Although there are languages that are clearly low-level, like Assembler, whose instructions vary according to the processor which the code is made for, and others of high level, like the JAVA, that is totally independent from the platform. The C++ language is in a middle term, since it can interact directly with the hardware almost without any limitation, as well as with the support of suitable specific libraries, works like one of the more powerful high- level languages.

Computers can run only programs written in the language that they understand, their individual machine language. In order to support a higher-level language, a special computer program must be developed that translates the statements of the program developed in the higher-level language into a form that the computer can understand - in other words, into the particular instructions of the computer.

The words and word combinations to the text

deficiency	- недостаток;
refer to	- относить к чему-то, ссылаться, упоминать - что-то;
closer to	- ближе к;
natural languages	- естественные языки;
low-level languages	- языки низкого уровня;
exist	- существовать;
one-to-one correspondence	- взаимно однозначное соответствие;
advantage	- преимущество;
run	- управлять, выполнять;
depend on	- зависеть от;
obviously	- очевидно;
vary	- менять, изменяться;
according to	- в соответствии с;
support	- поддерживать, поощрять.

2. Look through the text and find equivalent to the following terms.

разработали другие языки;
языки относят к;
показывает относительную позицию;
имеют ряд преимуществ;
легче для изучения, понимания, изменения;
не зависят от машинного языка;
могут быть выполнены на любой машине;
тип программирования;
выбрать для конкретного проекта;

при программировании больших приложений;
меняются в соответствии с процессором;
полностью независимы от платформы;
взаимодействовать непосредственно с аппаратными средствами.

3. Match the words on the left with the correct definition on :he right.

assembly language	A computer program designed to be used for a particular purpose.
browser	A set of instructions written in a computer language that control the behavior of a computer.
application	The processes of writing a computer program using a computer language.
high-level language	Computer language such a s m achine code or assembly language that is closer to the form that a computer understands than to that of a human language.
programming	A program used for displaying web pages.
machine code	A low-level computer language that uses mnemonics rather than only numbers, making it easier than machine code for humans to read and write.
low-level language	A programming language closer to human language than low-level computer language such as machine code or assembly language.

4. Answer the questions.

1. What is a computer program?
2. What are advantages of programs written in high-level languages?

How do you understand the term "binary numbers"?
What languages are regarded as low-level languages? Why?
Are programming languages artificial or natural?
What types of programming languages do you know?

5. Discuss these questions with a partner.

How can you explain this statement «high-level code is more portable»?
What does the term «level of the programming language» determine?
What are the differences between low-level and high-level languages?
What does the term «a programming language» mean?
What programming languages have you worked with?
What are the differences between them?

1. Read the text, translate it and (try) to understand what compiling programs are.

COMPILING PROGRAMS

People communicate instructions to the computer in symbolic languages, and the easier this communication can be made the wider the application of computers will be. Scientists are already working on Artificial Intelligence and the next generation of computers may be able to understand human languages. The translation of a high-level language into machine language is performed using one of two methods: *compilation* or *interpretation.* During compilation, a computer program called a compiler translates a program written in a high-level language entirely into machine language. The machine language version of the program can then run on the computer without the compiler.

In interpretation, a computer program called an interpreter translates the high-level program into machine language in a line- by-line manner, each line of the high-level program being translated into machine language and then run by the computer.

A compiler is a software program. A compiler analyzes a program developed in a particular computer language and then translates it into a form which is suitable for execution on a particular computer system.

The program that is to be compiled is first typed into a file on the computer system. Computer installations have various conventions that are used for naming files, but in general, the choice of the name is up to you.

The program that is entered into the file is known as the *source program.* Once the source program has been entered into a file, we can then proceed to have it compiled.

The compilation process is initiated by typing in a special command on the system. When this command is entered, the name of the file that contains the source program must also be specified.

In the first step of the compilation process, the compiler examines each program statement in the source program and checks it to ensure that it conforms to the syntax and semantics of the language. If any mistakes are discovered by the compiler during this phase, then they will be reported to the user and the compilation process will end right there. The errors will then have to be corrected in the source program, and the compilation process restarted. Typical errors reported during this phase of compilation might be due to an expression that has unbalanced parentheses (syntactic error) or due to the use of a variable which is not "defined" (semantic error).

When all of the syntactic and semantic errors have been removed from the program, the compiler will then proceed to take each statement of the program and translate it into a "lower" form. On most machines, this means that each statement will be translated by the compiler into the equivalent statement or statements in assembly language needed to perform the identical task.

After the program has been translated into an equivalent assembly language program, the next step in the compilation process is to translate the assembly language statements into actual machine instructions. This step may or may not involve the execution of a separate program known as an *assembler.*

The assembler takes each assembly language statement and converts it into a binary format known as *object code,* which is then written into another file on the system.

After the program has been translated into object code, it is then ready to be *linked.* The purpose of the linking phase is to get the program into a final form for execution on the computer.

The words to the text

artificial - искусственный;
entirely - полностью, всецело;
particular - особый, особенный;
suitable - подходящий;
execution - выполнение, исполнение;
type - печатать;
convention - условность;
contain - содержать;
source program - исходная программа;
ensure - гарантировать, заверять;
conform - соответствовать;
error - ошибка;
due to - из-за;
parentheses - круглые скобки;
variable - переменная;
proceed - продолжать;
involve - вовлекать, включать;
purpose - цель, намерение.

2. Look through the text and find equivalents to the following terms.

сообщают команды;
тем шире будет применение компьютера;
искусственный интеллект;
способным понимать;
переводит строку за строкой;

компьютерные настройки;
выбор имени;
занесена в файл;
продолжать компилировать;
будут обнаружены ошибки;
процесс компиляции перезапускается;
были удалены из программы;
оператор программы;
эквивалентный оператор.

3. Match the words on the left with the correct definition on the right.

source program	The program that translates the assembly language statements into machine instructions.
a compiler	A program error caused by a fault affecting the operating system, usually due to a hardware failure.
assembler	A mistake in a program due to a wrong word or punctuation symbol being used.
syntax error	The program that is entered into the file.
system error	A program that converts the whole of a program code before the program is used.

4. Answer the questions.

What methods can be used to translate a high-level language into machine language?

How can you explain the term "a line-by-line manner"?

What are the functions of a compiler?

How does the process of compilation start?

What are the steps in the compilation process?

What is known as object code?

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ЧАСТЬ I

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