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АНГЛИЙСКИЙ ЯЗЫК
для студентов заочного отделения,
обучающихся по специальности
«*ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ*»

Учебное пособие

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Учебное пособие предназначено для студентов-заочников, обучающихся по специальностям, связанным с информационными технологиями, в Российском государственном гидрометеорологическом университете. В пособие включены тексты на соответствующие темы, грамматические упражнения и специальная лексика как для студентов, начинающих изучение английского языка, так и для студентов, уже имеющих базовые знания. Материалы были заимствованы из оригинальных источников (книги и статьи на тему "информационные технологии").

The handbook is designed for part-time students studying Information Technology at Russian State Hydrometeorological University. It includes texts on appropriate topics, grammar exercises and computer vocabulary for both beginners and advanced learners of English. The texts are based on authentic articles, books and Internet resources.

ПРЕДИСЛОВИЕ

Данное учебное пособие предназначено для студентов защчного отделения факультета информационных технологий, РГГМУ, изучающих английский язык. Пособие ориентировано на развитие у студентов навыков чтения и перевода научно-технической литературы на английском языке в сфере информационных технологий. Пособие не только знакомит студентов с лексикой по разным аспектам ИТ, но также содержит ряд лексикограмматических заданий, направленных на изучение (либо повторение) и закрепление навыков перевода грамматических конструкций и лексического материала.

Пособие состоит из двух разделов. Первый раздел, предназначенный для проработки студентами 1 курса, представлен блоками текстовых и лексико-грамматических заданий для групп начинающих и продолжающих. Каждый текст снабжен списком слов по специальности ИТ. Второй раздел предназначен для студентов 2 курса и также включает в себя тексты и упражнения для проработки в группах начинающих и продолжающих. Поскольку программа изучения английского языка предусматривает изучение основных грамматических явлений наряду с лексическим материалом, предложенные в данном пособии тексты носят не только информационно-ознакомительный характер, но также отображают заявленные грамматические явления, тренировка и отработка которых осуществляется в после текстовых упражнениях.

В конце каждого блока представлены варианты контрольных заданий, которые студенты выполняют по окончании работы над текстами. При выполнении контрольных работ следует переписать английский текст, расположив его в левой половине тетрадного листа, а справа от него рекомендуется написать перевод на русском языке, оставляя при этом широкие поля для рецензента. В качестве дополнительного материала студенты могут пользоваться любыми грамматическими справочниками и пособиями, а также общими словарями и словарями по специальности.

Данное пособие может использоваться для аудиторной и самостоятельной работы студентами факультета информационных технологий как дневной, так и заочной формы обучения в виде основного или дополнительного источника. В качестве материала для заданий были использованы аутентичные источники (книги, статьи, справочная литература, Интернет-ресурсы) по информационным технологиям.

INTRODUCTION

The handbook is written for part-time students of Information Technology department who study English at Hydrometeorological University. The purpose is to develop skills of reading and rendering IT texts into Russian. The handbook not only gives a wide range of IT terminology but also provides a number of grammar exercises aimed at learning and revision of various grammar phenomena and IT vocabulary.

The handbook comprises two main parts. The first part, meant for the first year students both beginners and those who continue studying English, represents a set of texts which are followed by various lexical and grammar exercises. Each text is provided with a list of words to be learnt. The second part is meant for the second year students both beginners and advanced ones. Exercises given after the texts can be used for self-study or for class work.

On completing the course of studies the students do one of the test versions given at the end of each part. The tests can be done with the help of dictionaries and other supplementary materials.

The teaching materials are built on the authentic books, articles and reference sources. This handbook can be used by both part-time and full-time students as basic or additional material.

I КУРС
НАЧИНАЮЩИЕ

ТЕКСТ 1

Computers

There are three main types of computers. Mainframe computers are large and powerful. They usually have much information. Many people use them at the same time. Sometimes people call them mainframes or computer installation. These computers are in large institutions such as universities and government departments.

Minicomputers are about the size of an office desk. They are usually in banks and offices. As there is a great progress in development of computers, they are not very popular.

Microcomputers are famous as micros. They are small but not powerful. They are about the size of a typewriter. There is not much information in them and they are slow. They are ideal for use as home computers. Micros are also popular in education and business. Due to improvement of computers we have powerful machines today.

Vocabulary

mainframe	универсальная ЭВМ
desk	рабочий стол
powerful	мощный
development	развитие
typewriter	печатная машинка
due to	благодаря
installation	установка
improvement	улучшение

УПРАЖНЕНИЯ

I. Объясните употребление определенного и неопределенного артиклей в следующих предложениях:
1. It is a powerful computer.
2. Computers are helpful in our life.

3. The computer is expensive.

4. The computers are popular in business.

5. There is a powerful computer in the office.

6. A program is a set of instructions.

7. The program is necessary for the work.

II. Объясните отсутствие или наличие артикля перед существительными. В чем смысл формы неопределенного артикля –an.

1. Information in the form of programs and data is software.

2. An electronic unit is in the centre of a computer.

3. Other devices are important.

4. An output device is also a peripheral.

5. A keyboard is an input device.

6. Small computers are popular in business.

7. There is an error in the program.

III. Поставьте следующие предложения во множественное число.

1. This computer is powerful.

2. There is a computer in that office.

3. It is a difficult program.

4. This device is modern.

5. That computer is small.

IV. Вставьте недостающие местоимения по образцу: I - my - me

1. You – your - …

2. He -… - him

3. It - … - it

4. She – her - …

5. We - … - us

6. They – their – …

V. Запомните слова латинского и греческого происхождения, образующие множественное число особым способом:

Phenomenon – phenomena, datum – data, medium – media, analysis – analyses, formula – formulae, nucleus – nuclei.

ТЕКСТ 2

What is a Computer?

A computer is a machine with a complicated network of electronic circuits. They operate switches or magnetize tiny metal cores. The switches, like the cores, usually are in one or two states, that is, on or off, magnetized or demagnetized. The machine can store and manipulate numbers, letters and characters (symbols).Most computers have three basic capabilities.   First, computer shave circuits for performing arithmetic operations, such as addition, subtraction, division, multiplication. Second, computers have a means of communicating with the user. We put information in and get results back. The most common method of inputting information is to use diskettes, disks and magnetic tapes. There are two common devices to output information: a printer and a display. Third, computers can make decisions. Unfortunately, the computer can only decide three things: Is one thing less than another? Are two numbers equal? Is one number greater than another?

A computer can solve many problems and make a lot of logical decisions in a short period of time and it is never tired.

Vocabulary

circuits	цепь, электрическая схема
вevice	устройство, прибор
core	ядро
to output	выводить (данные)
to store	хранить, запоминать
to input	вводить (данные)
character	символ, знак
to make a decision	принимать решение
to process	обрабатывать (данные)
semiconductor	полупроводник
to provide	обеспечивать
to format	форматировать
to solve	решать (проблему)
portable	переносной
memory	память
achievement	достижение

a means (of)	средство, способ
computer-literate	компьютерно-грамотный
data (datum)	данные
state	состояние
like	как
magnetized	намагниченный

УПРАЖНЕНИЯ

I. Вставьте правильную форму глагола to be в настоящем простом времени (Present Simple) :

1. Websites ….different from books and magazines.
2. The transistor …. a small piece of semiconductor with 3 electrodes.
3. It …. necessary to make an experiment.
4. There …. many types of computers in the shop.
5. It …. not easy to read a multi-colored text.
6. Portable computers …. reliable.

II. Поставьте общий вопрос к следующим предложениям:

1. Computers are the most important technical achievement.
2. There are many computer-literate people in the information society.
3. Electronics is a field of engineering and applied physics.
4. It is difficult to imagine our life without computers.
5. It is easy to move around the screen with a mouse.

III. Подберите к терминам из левой колонки определения, приведён-ные справа:

1. **Computer**	a) a machine which helps to receive information from computer.
2. **Data**	b) a device which can store and manipulate numbers and characters.
3. **Input device**	c) an electronic machine which process data.
4. **Memory**	d) a disk drive (дисковод) which reads information into the computer.
5. **Output device**	e) information in the form of characters.

IV. Образуйте форму сравнительной и превосходной степени от следующих прилагательных: small, many, much, little, good, great, different,

quick, necessary, easy, reliable, important, difficult, famous, dirty, possible, fast, far.

V. Переведите предложения, обращая внимание на степени сравнения прилагательных:
1. Portable computers are smaller versions of desk computers.
2. The risks are higher for the world's high technology companies.
3. E-mail is the most popular type of mail.
4. Most companies have problems with equipment.
5. The new method of computing showed better results.
6. Notebooks are thinner than laptops.
7. This document is longer than our documents.

VI. Образуйте существительные от глаголов при помощи суффиксов -er,-or: to compute, to control, to cool, to sense. Полученные слова переведите.

ТЕКСТ 3

Electronics

Electronics is a field of engineering and applied physics which deals with the design and application of electronic circuits. The operation of circuits depends on the flow of electrons for transmission, reception and storage of information.

Today it is difficult to imagine our life without electronics. It surrounds us everywhere. We use electronic devices in scientific research and industrial designing. They control the work of plants and power stations, calculate the way of space-ships and help the people discover new phenomena of nature. Automation of production process is possible due to electronics.

The transistors are of great importance for development of computers. The transistor, a small piece of a semiconductor with three electrodes, has great advantages over the previous device – the vacuum tube. It provides the same functions as the vacuum tube but it has less weight , less cost and is more reliable.

Vocabulary

design	проектирование, разработка
transmission	передача, пересылка

application	применение
storage	хранение, запоминание
production	производство
advantage	преимущество
reception	приём, получение
phenomena (pl.)	явления
same	тот же, такой же
flow	поток

УПРАЖНЕНИЯ

I. Вставьте правильную форму глагола to have в простом настоящем времени (Present Simple). Затем поставьте общий вопрос к каждому предложению.

1.Everybody …. a PC.

2. Many people ….. an opportunity to use Internet.

3. The computer …. full information about the amount of money in the bank.

4. Most computers ….3 basic capabilities.

5. Any computer …. a means of communicating.

II. Образуйте множественное число следующих существительных: computer, program, life, man, woman, child, wish, datum, case, reality, box, technology, letter, machine, way, productivity, person.

III. Переведите предложения. Объясните окончание -s некоторых глаголов.

1. Computers solve problems very quickly.

2. The computer receives information in the form of characters (символы).

3. Instructions direct the operation of a computer.

4. Do computers bring with them economic and social problems?

5. The expert know show to make programs.

IV. Переведите предложения, обращая внимание на обстоятельства времени. Поставьте общий вопрос к предложениям.

1.Every day a railway's computer system gets thousands of telephone calls about reservations.

2. At present railway companies use large computer systems to give information on their trains.

3. Dust often causes the recording disks to deteriorate.
4. Sometimes he uses a language program to translate texts.
5. People seldom use new software because they are expensive.
6. Computer users often share laser printers through networks.

V. Заполните пропуски подходящими словами.
1. Information comes into the computer in the form of … .
   a) ideas   b) characters   c) rules
2. The basic function of a computer is…. information.
   a) to switch   b) to keep   c) to process
3. The data necessary for solving problems are in the … .
   a)memory   b) input device   c)output device
4. A computer makes arithmetic-logical operations … .
   a) quickly   b) slowly   c) during some minutes
5. Space ….. uses computers widely.
   a) information   b) production   c) exploration
6. Computers help in ….. of economy.
   a) invironment   b) management   c) government

VI. Образуйте наречия от прилагательных путем присоединения суффикса -ly: possible (возможный),wide (широкий), quick (быстрый), slow (медленный), regular (регулярный).

ТЕКСТ 4

The Size of a Computer

The size of a computer depends on the input and output method. There are practical limitations on how small a keyboard may become. Similarly, if a screen is too small it doesn`t display enough information or information on the screen is too small and you cannot read it easily. There are other forms of input, such as pen-computers which are smaller than those with keyboards. Another type of small computers is a portable computer. Portable computers are smaller version of desktop computers. They are reliable and are as fast as any computer on your desk. Portables, laptops, notebooks and palmtops are also small but they all are different in size and weight. Besides, they have other differences. For instance, portable computers can only run on AC power. Laptops are smaller than portables. Most of them can fit into a briefcase and

can operate on batteries. They have a screen of about 10 inches diagonally. Notebooks are thinner than laptops and they can work as well as desktops. Palmtop computers, or hand-held computers are so small that they can fit on your hand. They weigh less than 1 pound. They have very small screen but can operate without AC power. Most people use them as agenda books, phone books or address books.

Vocabulary

input method	способ ввода
portable	переносной (портативный)
keyboard	клавиатура
palmtop	миниатюрный компьютер
hand-held	карманный
agenda book	ежедневник
AC (alternating current)	переменный ток
pen-computer	компьютер с рукописным вводом

УПРАЖНЕНИЯ

I. Переведите предложения, обращая внимание на степени сравнения прилагательных.
1. The new method of computing shows better results than the old one.
2. The data input time of electromechanical memories is longer than that of electronic memories.
3. Portable computers are as fast as desktop computers.
4. A mouse has one or more buttons to communicate with a computer.
5. Today the number of Internet users is larger than in 1991.
6. Laptops are as popular as notebooks.

II. Образуйте существительные от глаголов при помощи суффиксов –tion, -ment и переведите их: to collect, to add, to produce, to operate, to invent, to eliminate, to communicate, to correct, to inform, to require, to measure, to improve, to develop, to achieve, to move, to replace.

III. Поставьте глаголы в скобках в форму настоящего простого времени (Present Simple).
1. He (to have) an opportunity to use Internet.

2. Computers (to solve) problems quickly.
3. They (to receive) a computer magazine once a week.
4. Experts (to know) much about computer programs.
5. My brother (to prepare) laboratory tests on the computer.
6. Instructions (to direct) the operation of a computer.
7. Scientists (to invent) many types of vacuum tubes.
8. The electronic device (to control) the work of power station.

IV. Переведите следующие словосочетания: an information-dependent society, computer literacy, input method, a data processing system, an everyday problem-solving device.

V. Найдите соответствие между словами из левой и правой колонок.

keyboard	вес
input	вмещать
portable	выводить на экран
output	ввод (данных)
display	переносной
weight	вывод (данных)
fit	клавиатура

VI. Переведите предложения, обращая внимание на модальные глаголы.
1. Electronics can do this job easier.
2. There are operating systems which you can control by voice.
3. Electric pulses can move at the speed of light.
4. Computers cannot do anything until you tell it what to do.
5. Can you run (запустить) the program?
6. We can define the computers as devices which process data.

VII. Заполните пропуски подходящими словами.
1. electronics, electronic, electronically
a) An ….. pen is one example of an input device.
b) A computer solve problems …… .
c) Many …… students go on to work as engineers.
2. compute, computation, computerization
a) The …… of the industry is expensive in the short term, but effective in the long term.

b) We are able to …… our profit accurately with the new program.

c) I can tell from all the …… on the board that a maths lesson is in progress.

TEКCT 5

Data Processing System

When we speak of data processing we define the input as data and the output as useful information. Data are a collection of facts, which computer is able to organize into useful information. Processing is a series of actions or operations that convert inputs into outputs. So we can define data processing as actions that make data into useful information.

The data processing systems include the resources which we use for processing data. There are 4 types of resources: people, materials, facilities and equipment. Materials are boxes of paper and printer. People provide input to computers, operate them and use their output. We need facilities in the place where we house the computer equipment, people and materials.

Everybody knows that it is important to convert facts into useful information. Today computers do this operation easily. Five basic operations are characteristic of all data processing systems: inputting, storing, processing, outputting and controlling. Inputting is entering data into a data processing system. Storing is saving data or information which can be available for initial or additional processing. Processing is performing arithmetic or logical operation on data. Outputting is the process of producing useful information as a report or visual display. Controlling is directing the manner and sequence of operations which the computer performs.

Vocabulary

data processing	обработка информации
to convert	превращать
to define	определять
to include	включать в себя
to use	использовать
facilities (pl.)	удобства, благоприятные условия
equipment	оборудование
to provide	обеспечивать
to enter	вводить (данные)
available	доступный

to save	сохранять
display	(визуальное) отображение
to direct	управлять
to perform	выполнять

УПРАЖНЕНИЯ

I. Переведите предложения. Поставьте общий вопрос к утвердительным предложениям и дайте краткий ответ.

1. We can make the machine do what we want.
2. He is able to format this floppy (дискета).
3. Under such conditions the HHD (hard disk drive –дисковод жесткого диска) cannot work properly.
4. Computer-controlled robots are able to increase the productivity of the industry.
5. We cannot imagine the modern life without computers.

II. Переведите следующие словосочетания: data resources, storage resources, display facilities, communication facilities, computer storage, instruction sequence.

III. Подберите к словам из левой колонки объяснение, приведенное справа.

1. **Computer literacy**	a) a part of a computer which enter data into the device.
2. **Data**	b) electronic device which accepts the data processing results from the computer and displays them.
3. **A program**	c)an electronic device which performs calculation sand operations.
4. **Data processing**	d) sufficient knowledge about how computers work and how to use them.
5. **Input**	e) a series of operations that convert data into useful information.
6. **Data processing**	f) facts which it is necessary to organize.
7. **Output**	h) a set of instructions that direct the operations of computers.

IV. Переведите предложения. Поставьте предложения в отрицательную и вопросительную форму (повторение пройденного грамматического материала).

1. It is difficult to see all the advantages of the new technology.
2. CPU(central processing unit) has three parts: the control unit, the arithmetic-logic unit, and memory.
3. There are often some ways to classify the same information.
4. The computers deal with different kinds of problems.
5. The term computer includes hardware and high-speed memory.
6. It is an important factor in his calculations.
7. The price of machine translation system varies greatly.
8. Most people prefer a colour screen to a monochrome one.
9. A programmer prepares computer programs.
10. Computer users prefer laser printers to other types of printing devices because of their speed.
11. The equipment is too expensive.

V. Какой частью речи могут быть следующие слова: control, work, little, link, correct, use, cost, open, search, switch.

ТЕКСТ 6

Search on the Internet

If you want to find information on the World Wide Web you need an Internet search engine such as Google, Alta Vista, or Excite. Search engines have a text box where you type a keyword or words. A search engine is a software program that reads the keywords in the text box and searches the Internet for Web pages and other Internet files. You can see these documents on the screen of your computer. When you are making searches, you should be specific and brief in your choice of words. If the keyword is too general, the results may not be useful.

If you use upper case letters in a keyword you can only get documents that use upper case. It is usually better to type in lower case because search engines can show you documents that use both upper and lower case letters.

Spelling is very important when you type, but a search engine doesnt usually read punctuation, propositions and articles.

Vocabulary

search engine	поисковик
textbox	рамка для текста
to type	печатать
keyword	ключевое слово
specific	определенный, точный
brief	краткий
upper case	верхний регистр
general	общий
lower case	нижний регистр
software	программное обеспечение
letter	буква

УПРАЖНЕНИЯ

I. Переведите предложения, обращая внимание на глаголы в настоящем продолженном времени (Present Progressive Tense).

1. The Americans and the Japanese are working together to produce user-friendlier computers.

2. Software developers are producing new applications for a growing global market.

3. The computer technology is growing now at high rate.

4. There is a kind of antivirus program which detect viruses while they are infecting your PC.

5. In Britain Robert Stone is developing systems which can put men on Mars in virtual reality.

6. Computers are removing many of routine and boring tasks from our lives.

II. Переведите предложения, содержащие модальные глаголы (Modals). Образуйте общий вопрос к каждому предложению.

1. Business microcomputers can perform 100 operations per second.

2. He is able to install server on the computer.

3. The schoolchildren may work with computers at the lessons.

4. They are not allowed to run the application.

5. Storage devices must have capacities for the input, output data and programs.

6. We have to improve the program for better results in computing.

7. The rate of data transmission doesnt have to be large on this pipe.

8. The computing machine should be numerical.
9. The operator should be attentive.
10. A user at his computer may make a query against a central databank.
11. You still have to input data with a keyboard.
12. Programmers must write applications in a way that computers can understand.
13. When you finish your program, you have to test it and remove all the mistakes.
14. These computers must increase the productivity of industry.

III. Раскройте скобки и поставьте глаголы в форму настоящего продолженного времени.
1. Voice-recognition systems (to become) more complicated.
2. Computers (to remove) many of routine and boring tasks from our life.
3. Global communication (to take) more and more place in professional and personal lives.
4. When you surf the Internet, you (to travel) in Globespace.
5. I (to write) to complain about the late delivery of the necessary items.

IV. Найдите соответствие между словами из правой колонки (b) и их значением в левой колонке (a).

a)	b)	a)	b)
store	вычислять	software	оборудование
process	полезный	semiconductor	ключевое слово
device	обрабатывать	search	превращать
data	приспособление	keyword	поиск
useful	запоминать	convert	полупроводник
calculate	данные	equipment	программное обеспечение

ТЕКСТ 7

Some First Computer Models

In 1832 The British government invited an English inventor and mathematician Ch. Babbage to develop a system for calculating the rise and fall of the tides. He designed a device and called it an analytical engine. It was the first programmable computer which used punched cards for data input. The machine was able to perform different types of mathematical operations. It

had its own "memory" and could do different operations according to the purpose of the operator.

In 1944 in the US International Business Machines built a machine in cooperation with scientists of Harvard University. The man responsible for this invention was Professor Howard Aiken. They called their machine Mark I. They built Mark I for Manhattan Project which led to the development of atomic bomb. It was the largest electromechanical calculator of the time. The machine used more than 3000 electrical switches. The scientists defined this machine as a computer because it was possible to change instructions. The operator entered the instructions by means of a punched paper tape. But these computers had many problems. They were slow, noisy and consumed a lot of power.

Early in the 20th century scientists invented a vacuum tube. This electronic device was ideal for use in computers. It had no mechanical moving parts. It switched flows of electrons on and off much faster than any mechanical device. It was reliable and could work hundreds of hours. The scientists of Iowa University built the first vacuum tube computer at the same time as Mark I. They called the machine ABC – the Atanasof-Berry computer. Atanasof was a professor of physics and Berry was his assistant. This computer used 45 vacuum tubes. After the ABC a number of vacuum tube digital computers appeared. Soon the British built a computer which was able to decode German messages.

Vocabulary

to develop	разрабатывать
tide	приливная волна
to design	проектировать
purpose	цель
analytical	аналитический
to build (built)	строить
punched card	перфокарта
to enter	вводить
according to	в соответствии
to lead (led)	приводить
cooperation	сотрудничество
flow	поток
because	потому что
digital	цифровой

to change	изменять
reliable	надежный

УПРАЖНЕНИЯ

I. Переведите предложения, обращая внимание на обстоятельства времени, характерные для простого прошедшего времени (Past Simple).
1. In the 1980s computers became smaller, faster and cheaper.
2. Last year a Cornell University graduate student R. Morris infected government and educational computer centers with a virus called "worm".
3. Yesterday my friend bought a new notebook.
4. Ten years ago nobody thought about application of computer systems in practically every aspect of life.
5. When a collaboration between IBM and Digital Research failed, IBM turned to Bill Gates.

II. Раскройте скобки и поставьте глаголы в простом прошедшем времени (Past Simple). Поставьте общий вопрос к предложениям и дайте краткий ответ.
1. V.Bush (to build) the first analog computerin 1930.
2. The first digital computer (can) solve a lot of mathematical problems at a fast rate.
3. Ch. Babbage (to design) analytical engine for inputting data in the first half of the 19th century.
4.John von Neumann (to invent) a machine that (to be) able to store both data and instructions.
5. The invention of the vacuum tube (to make) computers faster.
6. The early computers (to accept) their input data from punched cards.
7. In the mid-1940s electronic computers (to perform) calculations for military and scientific purposes.
8. Later keyboard terminals (to replace) punchedcards.

III. Переведите вопросительные предложения и найдите ответы в предыдущих упражнениях.
1.What could the first digital computer do?
2. When did the first calculating machine appear?
3. Who invented Mark I?

4. How did people use the first computers in the 1940s ?
5. Did the vacuum tube make the computers faster ?
6. Was Neumann's machine able to store data ?
7. Did the first digital computers solve mathematical problems ?
8. Could digital computers work fast ?
9. Did keyboard terminals replace punched cards ?
10. Who invented analytical engine ?

IV. Вспомните значение следующих слов и подберите к ним производные.

Например: to calculate – calculation – calculator.

To compute, to invent, to multiply, to depend, to process, to design, to store, to provide, to use, to divide, to inform, to operate.

V. Найдите соответствие между словами в левой колонке и их значением в правой колонке.

1. **Inputting**	a) saving information for further processing.
2. **Character**	b) the most common input device.
3. **Outputting**	c) the process of entering facts into a data processing system.
4. **Memory**	d) a language symbol.
5. **Keyboard**	e) the part of the computer that receives and stores data for processing.
6. **Storing**	f) the process of producing useful information.

ТЕКСТ 8

The Internet

The Internet originated in the early 1970 when the United States wanted to make sure that the people could communicate after the nuclear war. This needed a free and independent communication network without a centre. As a result there was a network of computers which could send e-mail through cyberspace. Tim Berners-Lee invented World Wide Web (WWW). He discovered a way to jump to different files on his computer and to use the random links between them. Then he wrote a simple coding system. Everybody knows it as HTML (Hyper Text Markup Language).

Since the time WWW has become available to everyone. The number of Internet users has grown to 40 million. There are many browsers that have provided Web pages, information and other services. Now you can do research, download music files, play games, shop, talk in chat, send and receive e-mails on the WWW.

Vocabulary

download	загружать, скачивать
link	линк, связь
through	через
browser	браузер
random	случайный
coding system	система кодирования
research	исследование
service	услуга
Hyper Text Markup Language	язык разметки гипертекста

УПРАЖНЕНИЯ

I. Переведите предложения. Обратите внимание на наречия, характерные для настоящего совершенного времени (Present Perfect).

1. Since that time computers have become an important part of our life.
2. Throughout history people have found it necessary to put data into forms.
3. We cant work because he hasn't performed the program yet.
4. They have already written some programs to solve specific problems.
5. The convenience of the microprocessor has changed the entire architecture of modern computer systems.
6. Since then dozens of different microprocessors have appeared.
7. He has just finished his research work.

II. Используя префиксы -in, -il, -im, -ir, -un , образуйте прилагательные с отрицательным значением от следующих слов: regular, possible, known, personal, rational, balanced, common, responsible, comfortable, literate, necessary, dependent, legal, complete, convenient, logical, direct.

III. Заполните пропуски подходящими словами.
1. consider, considerably, consideration, considerable
    a) We have to …. this problem immediately.

b) The company has invested a ….. sum of money in the project.

c) We have left the program for your …. .

d) This computer is …. faster.

2. depend, dependent, dependence, dependable

a) We have to reduce our …. on import.

b) This is very …. equipment. We have never had a serious breakdown.

c) Today many companies ….more on FAXes than on mail.

d) The company has remained …. on their equipment for over 10 years.

IV. Переведите предложения. Объясните употребление простого прошедшего и настоящего совершенного времени (Past Simple, Present Perfect).

1. This technology has been in development for 20 years.

2. This type of computer appeared in the mass market only 1 year ago.

3. We have already realized that operators need short breaks during the day.

4. The first calculating machine appeared not too long ago.

5. Since then computers have gone through 4 generations.

6. In 1980s the computers became smaller, faster and cheaper.

7. Computers can take people to places where they have never been before.

8. They delivered the equipment last week.

9. They have just sent the documents for these computers.

10. 10 years later in 1991 IBM made PC with 16 Mb of memory.

11. The documents haven't arrived yet.

12. Today the Internet has made entirely new industries.

ТЕКСТ 9

Hybrid Computers

Machine that combine both analog and digital capabilities are hybrid computers. Many businesses, scientific and industrial computer applications rely on combination of analog and digital devices. The use of hybrid computers will continue to increase because application of microprocessors and microcomputers is growing. For example, there are control systems in household appliances such as microwave ovens and sewing machines. In future we will have complete indoor climate control systems and robots for housecleaning. Analog sensors will provide inputs to the control centres of these systems which will be small digital computers.

Vocabulary

to combine	совмещать
to increase	увеличивать
capability	способность, возможность
household appliance	бытовые приборы
application	применение
microwave oven	микроволновая печь
sewing machine	швейные машины
input	ввод
indoor	в помещении
complete	полный
hybrid	гибрид

УПРАЖНЕНИЯ

I. Переведите предложения, выражающие действие в будущем (Future Simple). Обратите внимание на характерные обстоятельства времени. Образуйте вопросительную и отрицательную форму данных предложений.
1. Tomorrow there will be traditional presentations and tool demonstrations.
2. The International Symposium "Engineering Education Today" will take place next year.
3. Next time Ill concentrate on how PCs work.
4. Next week I will be busy with the most common task – writing on computer.
5. This article will offer you a brief discussion about stenography.
6. In years ahead the Internet will have more effect on the way we live, work and learn.

II. Переведите условные предложения I типа, выражающие действие в будущем. Обратите внимание на принципы употребления времен в условных предложениях (Conditionals I).
1. If you use a lot of animation, your Web page will take a long time to download.
2. If you use a lot of graphics, your Web page will be too busy.
3. If there is no printer when you run the program, the computer will produce a system error message.
4. If a program contains a logic error, it will run but won't work properly.

III. Заполните пропуски подходящими словами.
Invent, invention, inventor, inventory

a) In 1948 American scientists ….the transistor.

b) He is a person of …. mind.

c) At the beginning of the 20thcentury ….of vacuum tubes made possible the progress in radio communication.

d) John Fleming was the …. of the first two-electrode vacuum tube.

IV. Образуйте прилагательные, используя префикс -ir, придающий им отрицательное значение, и переведите их: regular, relative,responsive, rational, replaceable, recognizable.

КОНТРОЛЬНЫЕ РАБОТЫ

ВАРИАНТ 1

Transistors

The quick development of electronics began with the invention of transistors. They replaced electronic tubes due to their advantages. One of the most important advantages of the transistors is absence of power loss. One of the principle causes of damages in electronic circuits is high temperature. The heat causes breakdown of tubes and other circuit elements that are sensitive to this influence. The transistor doesn't heat the elements which surround it.

The advantage of the transistor over vacuum tube was great. A transistor can switch flows of electricity as fast as vacuum tubes but transistors use less power than equivalent vacuum tubes and are considerably smaller. Transistors are less expensive and more reliable. They could do some jobs much better. Another advantage of the transistor is its long life. The life of the average transistor is more than 10 000 hours. Because its life is long, the transistor is reliable and has better efficiency in professional equipment.

ВАРИАНТ 2

Personal Computers

PC means personal computer but actually everybody knows them as IBM personal computers. PCs which other companies make are the same as computers which IBM produces. The other kind of computer which we widely use in our homes is Macintosh. It is not similar to IBM's PC. So you need to know that they work differently. If you have Mac's, you need Mac software. If you have PC, you need PC software.

Software in jargon for instructions that tell the computer what to do. Software is soft because you can't touch it. It is a set of directions which computer can understand. Usually these directions are on a magnetic disk. It is small and can fit in your pocket. It also can be larger, then you can't see it as it is inside the computer. The small disk has a hard plastic cover but the disk itself is flexible, so it is a "floppy" disk. The bigger disk isn't flexible, so it is a "hard" disk.

ВАРИАНТ 3

Application of Computers

It is interesting that specialists widely use computers in medicine. Computers became medical diagnostic tools. They are helpful in optical scanning and image processing. Technicians can operate computer tomography scanners which combine x-rays with computer technology and receive sectional views of the patients' body. The operator can combine sectional views into a single image which you can see on the screen.

You should know that learning can be a fun. Students spend more time with computer and preform different tasks. At last air traffic control is impossible without computer application. It greatly depends on computer that generates information.

ВАРИАНТ 4

First Computers

The first vacuum tubes computers belong to first generation computers, and the approximate period of their use was from 1950 to 1959. UNIVAC (UNIVersal Automatic Computer) is an example of these computers which could perform thousands of calculations per second. These devices were not only bulky, they were also unreliable. The thousands of vacuum tubes produced large amounts of heat and burned out quickly. The transistor, a smaller and more reliable invention, appeared in 1948. These were second generation computers. They used a lot of transistors and were able to reduce the time of computing from milliseconds to microseconds. These computers were smaller, much faster and more reliable.

ТЕКСТ 1

Types of Errors

System errors affect the computer on its peripherals. For example, you have written a program which needs access to a printer. If there is no printer present when you run the program, the computer will produce a system error message. Sometimes system error makes the computer stop working and you will have to restart the computer. If you want to avoid system errors you should write code and check that peripherals are present before you send any data into it. Then the computer will warn you by a simple message on the screen, for example: "printer is not ready or available".

Syntax errors are mistakes in the programming language (like typing PRNIT instead of PRINT). Syntax errors cause the program to fail. Some translator programs will not accept any line that has syntax errors. Some languages contain special commands such as debug which will report structural errors in a program. The programming manual for the particular language you are using will give details of what each error means. It is difficult to detect logic errors because the program with a logic error will run but it will not work properly. For example, you have written a program to clear the screen and then print "Hello". Here is code for this. If the code has a logic error but the syntax is right, it will run.

Vocabulary

error	ошибка
peripherals	внешние устройства
to be present	присутствовать
to restart	начать заново
manual	инструкция
access	доступ
to run (a program)	запускать (программу)
to mean	означать, значить
properly	правильно

УПРАЖНЕНИЯ

I. Раскройте скобки и поставьте глагол в подходящее время (повторение пройденного материала).

1. They (to use) computereveryday.
2. My son (to play) computer now.
3. In 1970s computers (to be) massive machines.
4. Since that time computers (to become) popular in most aspects of our life.
5. Now computers (to get) smaller and smaller in size.
6. In 1890 John Loud (to create) the first ballpoint pen.
7. In future people (to have) easy access to virtual reality system.
8. At the moment we (to reach) a point when the simulations are so realistic.
9. Teenagers (to play) computer games for years.
10. Aiken was not familiar with the Analytical Engine when he (to design) the Mark I.
11. After people (to tell) him about Babbages work, Aiken was surprised at his genius.
12. By the end of the 20th century scientists (to replace) metal wires by fiber-optic ones.

II. Переведите предложения, содержащие модальные глаголы. Какие модальные глаголы вы знаете, кроме упомянутых ниже?
1. We have to install server on this computer.
2. You should be careful when you choose a computer.
3. Do you have to use a computer at work?
4. The computing machine should be numerical.
5. He doesn't have to format the floppy.

III. Заполните пропуски подходящими словами:
a) to cause, cause, causeless
1. We can mention the ….. before the effect.
2. Your complaint is …. .
3. Dust is often the ….. of computer problems.
4. Dust often ….. the deterioration of recording conditions of discs.
5. The volume of network traffic ….. the problems.

b) technology, technological, technologically
1. The computer is the greatest ….. invention of the 20th century.
2. There are two …… which scientists used in a clipboard PC.
3. Todays computers are ….. much superior.
c) access, accessible, accessibility

1. All user requests to ..... a database are under control of the database management   system.
2. .....to the computer room is allowed to the personnel only.
3. Those files are not ..... unless you know the password.

IV. Переведите следующие словосочетания: recording conditions, database management system, system error, system error message, syntax error, programming language, programming language manual, translator program.

V. Составьте пары близких по значению слов: to complete, to calculate, to develop, to keep, to interpret, to communicate, to fulfill, to apply, to translate, to improve, to build, to store, to figure out, to perform, to use, to finish, to construct, to connect.

VI. Переведите предложения, содержащие следующую инфинитивную конструкцию:
a) 1. It is difficult to detect logic errors.
   2. It is necessary to click on a picture to start a video.
   3. It is important to use multimedia simulations of real situations in industry.
   4. Sometimes it is useful to combine education and entertainment.
   5. It is not easy to perform a computer program.
   6. It is effective to use virtual reality to advertise products.
   7. It was necessary to develop new computer programs for business.
b) Обратите внимание на лексическое значение глаголов to make и to cause в сочетании с последующим существительным и инфинитивом.
   1.Sometimes system error makes the computer stop working.
   2. Syntax errors cause the program to fail.
   3. Central unit causes all parts of the computer to act as a team.
   4. Dust often causes the recording condition of discs to deteriorate.
   5. A lot of problems with their computer made them call the Help Desk.

ТЕКСТ 2

Storage Devices

a) Storage devices are classified as primary storage or secondary storage on the basis of cost, capacity and access time. The cost of storage devices is expressed as the cost per bit of data which is stored. The time which is required

to locate and transfer data to and from a storage device by the computer is called the access time for this medium. Specialists measure the capacity of a storage unit by machine words or binary digits. Capacities vary from a few hundred bytes of primary storage for very small computers to many billions of bytes for very large computer systems.

b) Primary (internal) storage has the least capacity and is the most expensive. It has the fastest access time because electronic memory is used for them. The principal circuit elements of primary storage are magnetic cores and semiconductors. Two types of semiconductors are used. They are bipolar and metal-oxide semiconductors (MOS). The former are faster and the latter are more popular at present.

c) There are many types of secondary (external) storage devices. Typical hardware devices are electromechanical ones. Magnetic tapes and discs are the secondary storage hardware. Magnetic tape was invented by the Germans during World War II for sound recording. In early 1960s magnetic disc storage was introduced. As a result magnetic tape was replaced by the new device. Magnetic discs are the predominant secondary storage media. They include flexible or floppy discs, which are called diskettes. The "floppies" were introduced by IBM in 1977 and still are popular.

Vocabulary

storage device	накопительное устройство
storage medium	накопитель памяти
capacity	объём, ёмкость
per bit	на единицу информации
access time	время доступа
magnetic core	магнитный сердечник
bipolar	биполярный
floppy (disc)	гибкий диск
magnetic disc storage	запоминающее устройство на магнитном диске
byte	байт
to require	требовать(ся)
to replace	заменять
to introduce	вводить
to measure	измерять

УПРАЖНЕНИЯ

I. Переведите предложения, обращая внимание на глаголы в форме страдательного залога.
1. Our life is influenced by science.
2. The performance of the device was affected by many factors.
3. The first use of the word "computer" was recorded in 1673.
4. The name "computer" was given to a person who made calculations.
5. Many scientific needs are met by analog computer.

II. Вставьте правильную форму глагола to be в пропуски.
1. Computers …. sold in this store.
2. The Analytical Engine ….invented in 1830 by Babbage.
3. All calls …. registered by the Help Desk staff.
4. Instructions …. written in high-level language.
5. Microsoft …. founded by Bill Gates.
6. Last year great advances ….. made in computer technology.

III. Переведите предложения, обращая внимание на употребление слова one.
1. The new tool should be as small in size as the one it replaced.
2. One should remember about the difficulties of the situation.
3. There are a lot of computer models. We bought the latest one.
4. This computer is much cheaper than the one we saw yesterday.
5. One should be careful when he works on the computer.

IV. Переведите текст, обращая внимание на формы страдательного залога в Present Perfect и Present Continuous. Объясните разницу в употреблении Present Perfect и Past Simple, Present Simple и Present Continuous.

Computer Generations

Computers, as we know them today, have not been around for a long time. In the mid-1940s the first working digital computer was completed. But since that computers have been improved tremendously. Vacuum tubes were used in the first generation computers, but in the early 1960s vacuum tubes were replaced by transistors in the second generation computers. By the end of the 1960s transistors themselves were replaced by tiny integrated

(интегральный) circuit boards and a new generation of computers was on the market. Fourth generation computers are now produced with circuits that are much smaller than before and can fit on a single chip. Even now new technologies are being developed as even better machines are required.

V. Подберите пары близких по значению существительных: speed, aim, storage, information, machine, computation, data, device, rate, calculation, purpose, memory.

VI. Выберите глагол в подходящем залоге: действительном или страдательном.

1. Electronic devices (help, are helped) people discover new phenomena of nature.
2. The transistor (replace, was replaced) by vacuum tubes.
3. Electronic devices (use, are used) in scientific research.
4. Vacuum tubes (performed, were performed) the functions of the transistor before its invention.
5. By the 20th century electromechanical machines (had developed, had been developed).
6. Dr. Hollerith, a young statistician, (was established, established)a tabulating machine company.

VII. Раскройте скобки и заполните пропуски, используя правильную форму глагола (Present Simple, Passive Voice).Переведите текст о работе гарантийной компании.

All calls (телефонные звонки) (to register) by the Help Desk staff. Each call (to evaluate) and then (to give) to a support group. If a visit (to require), the user (to contact) by telephone and the time of visit (to arrange). Most calls (to deal with) during one working day. If the removal of a user's PC (to require), it (to do) in the shortest period.

VIII. Заполните пропуски подходящими словами.

1. The time necessary for the computer to locate and transfer data in the storage device is called data ….. time.
    a) sequence   b) access   c) value
2. …. memories have no moving parts.
    a) electronic   b) mechanical   c) electromechanical
3. …..is more commonly used for memory at present.
    a) bipolar semiconductors   b) MOS   c) field-effect transistor

4. Magnetic disc is the ….. storage media.
    a) internal b) primary   c) secondary
5. Data are stored in ….. codes in primary and secondary storage.
    a) digital   b) binary   c) numerical
6. Data access time is ….. in electronic memories than that in electromechanical memories.
    a) longer   b) much longer   c) shorter
7. Electronic memories have ….. capacities for data storage.
    a) more   b) larger   c) less

ТЕКСТ 3

Software and Hardware

The units that are visible in any computer are the physical components of a data processing system, or hardware. So the input, storage, processing and control devices are hardware. The software is a set of computer programs, procedures and associated documentation making possible the effective operation of the computer system. There are two types of software programs: system software and application software.

Systems software is the programs designed to control the operation of a computer system. They do not solve specific problems. They are written to assist people in the use of the computer system controlling all the required operations, moving data into and out, executing an application program.

Application software is the programs written to solve specific problems (applications), such as inventory control, investment analysis. The word program is an application program. Often programs, particularly systems software, are stored in an area of memory not used for applications software. These protected programs are stored in an area of memory called read-only memory (ROM) which can be read from but not written on. The person preparing systems software is called a systems programmer.

Vocabulary

software	программное обеспечение
application software (application)	прикладное программное обеспечение
hardware	аппаратное обеспечение, оборудование

visible	видимый
specific	определённый
to assist	помогать
to solve	решать
inventory control	переучёт
investment analysis	анализ инвестиций
to execute	выполнять

УПРАЖНЕНИЯ

I. Переведите словосочетания: access time, computer system, circuit elements, sound recording, storage media, first generation computers, processor instructions.

II. Образуйте причастие I и II от следующих глаголов и переведите их: to use, to perform, to distinguish, to consist, to change, to write.

III. Переведите предложения, содержащие причастие I (Participle I).
1. The calculations following the experiment gave accurate results.
2. The lecture followed by the demonstration of the experiments was a success.
3. The practical studies following the theoretical ones were of great use.
4. Following this new method they achieved good results.
5. Software is a sequence of instructions changing the state of computer hardware in a particular order.
6. There are typically two or one hundred registers depending on the type of computer.

IV. Переведите словосочетания с причастием II (Participle II): the given information; the name given to the machine; the device used in World War II; vacuum tube invented by J. Neumann; machine proposed by Ch. Babbage.

V. Переведите предложения. Укажите, какие причастия встречаются в них.
1. The first computers used two electrical compounds connected together with wires.
2. In the late 1940s computers were made using vacuum tubes, resistors and diodes.

3. Computers using transistors were called second generation computers.
4. New complete circuits can be made from a single piece of semiconductor called a chip.
5. Early computers using vacuum tubes could perform computations in thousandths of seconds instead of seconds required by mechanical devices.
6. 10^8 is a number expressed by one followed by eight zeroes.
7. Software is an ordered sequence of instructions changing the state of the computer hardware.

VI. Заполните пропуски подходящими по смыслу словами.
1. A young American clerk invented a means of coding ….. by punched cards.
   a) letters   b) data   c) numbers
2. Soon punched cards were replaced by ….. .
   a) printer   b) scanner   c) keyboard
3. Mark I was the first …. computer that could solve mechanical problems.
   a) analog   b) digital   c) mechanical
4. J. von Neumann simplified his computer which stored information in a ….. code.
   a) analytical   b) numerical   c) binary
5. The first generation computers were ….. and often burned out.
   a) uncomfortable   b) uncommunicative   c) unreliable
6. Computers of the second generation used ….. which reduced computation time greatly.
   a) transistors   b) integrated circuits   c) vacuum tubes
7. Due to ….. the development of the fourth generation computers became possible.
   a) microelectronics   b) miniaturization   c) microminiaturization
8. Systems ….. are usually stored in read-only memory.
   a) hardware   b) software   c) processing unit.

ТЕКСТ 4

Operating System

An operating system is the interface between the computer hardware and the user with the kernel which is responsible for the management and coordination and for sharing the limited resources of the computer. The operating system acts as a host for applications that are run on the machine. As the host, one of

the purposes of the operating system is to handle the details of the operation of the hardware. This relieves application programs from managing these details and makes it easier to write applications. Almost all computers including handheld computers, desktop computers and even video game consoles use the operating system of some type. Some of the oldest models may use the built-in operating system which may be contained on a compact disk or other data storage device. Operating system offers a number of services to application programs and users. Applications access those services through application programming interfaces. By invoking these interfaces the application can request a service from the operating system and receive the results of the operation. Users may also interact with the operating system by typing commands, by using commands like interface or using a graphical user interface ("gooey").

Vocabulary

operating system	операционная система
interface	интерфейс
kernel	ядро
to be responsible (for)	быть ответственным (за)
through	через
to type	печатать
to make it easier	облегчать
to handle	управлять, регулировать; обрабатывать (данные)
to relieve	освобождать
to invoke	вызывать
to offer	предлагать
host computer	главный компьютер

УПРАЖНЕНИЯ

I. Переведите предложения, содержащие герундий. Каковы признаки герундия в предложении.
1. Computers can help people in making different decisions.
2. Van Neumann developed the concept of storing instructions as well as data in the memory of the computer.
3. Having a lot of pictures and animations on Web pages is great.
4. Digital computer is a machine capable of performing operations on data in the form of digits.

5. CPU (central processing unit) controls the operations of the entire system by giving commands to the other parts of the system.

II. Переведите предложения. Объясните, какой частью речи являются слова с окончанием –ing.
1. Using our software will help you to solve a lot of problems.
2. They have solved a lot of problems, using our software.
3. Digital computers are machines using digits or numbers.
4. The speed was increased by using a very cheap technology.
5. Following these instructions the group achieved good results.
6. Following these instructions was useful.
7. One of benefits of buying the system is that it has detailed documentation.
8. There were a lot of people buying computers.
9. In writing the program we met a lot of problems.
10. A person writing computer programs is called a programmer.
11. Writing this program he made some mistakes.
12. Writing computer programs is a hard work.

III. Раскройте скобки, употребляя неличную форму глагола.
1. Computing is a concept (included, including, for including) not only arithmetics, but also computer literacy.
2. We can make the computer do what we want (imputed, inputting, by inputting) signals (turning, turned, without turning) switches on and off.
3. Computers have a means (by communicating, of communicating, communicated) with the user.
4. Computers work on the instructions (giving, given, for giving) by users.
5. The transistor (inventing, invented, for inventing) in 1948 completely replaced the vacuum tubes.

IV. Определите по суффиксу части речи – существительное, прилагательное или наречие. Переведите слова.
Organization, functional, available, equipment, processor, converter, convertible, controller, removable, logical, addition, additional, usually, operator, mainly, communication, electronic, digital, instruction, arithmetic, daily, development, central, visible, lately, understandable, subtraction.

V. Вспомните значения новых слов и переведите словосочетания с ними.
a) Computer: analog computer, digital computer, hybrid computer, all-purpose computer, fifth-generation computer, portable computer, notebook computer.

b) Unit: memory unit, arithmetic-logic unit, central processing unit, control unit, input-output unit, system unit.
c) Control: access control, distance/remote control, error control, input-output control, power control, system control.

VI. Найдите соответствие между словами (словосочетаниями) и их объяснением, приведённым ниже.

A) data processing, B) schedule, C) business software, D) process control, E) processing.

1. A list of events in order they usually happen.
2. Operations performed on data and providing users with useful information.
3. The computer manipulation of data in solving problems.
4. Programs designed for business application.
5. The use of the computer to control industrial processes.

ТЕКСТ 5

Central Processing Unit (CPU)

The CPU coordinates all the activities of the various components of the computer. It determines which operations should be carried out and in what order. To control the operation of the entire system the CPU issues commands to other parts of the system. Its functions are to read information from the memory, to interpret instructions, to perform operations on the data according to the instructions, to write the results back into the memory, to move information between memory levels or through the input-output ports.

In digital computers the CPU can be divided into two functional units: the control unit (CU) and arithmetic-logical unit (ALU). These two units are made up of electronic circuits with millions of switches that can be in one or two states, on or off. The control unit is used to direct the sequence of the system operations, to select instructions and data from memory, to interpret the program instructions. The ALU is designed to perform the operations of addition, subtraction, multiplication, division.

Programs and the data on which the CU and the ALU operate, must be in internal memory in order to be processed. If located in secondary memory devices (such as discs), programs and data are first loaded into internal memory.

Vocabulary

central processing unit	центральный процессор
activity	деятельность, работа
to direct	направлять
various	различный
sequence	последовательность
to determine	определять
to select	выбирать
to carry out	осуществлять
internal	внутренний
order	порядок
secondary	вторичный
entire	весь, целый
to issue	посылать (сигнал), выводить
to interpret	переводить
input-output ports	порт ввода-вывода
to make up	составлять

УПРАЖНЕНИЯ

I. Переведите предложения, обращая внимание на функцию инфинитива.

1. Web designers use HTM (Hyper Text Makeup) language to create and format Web pages.

2. To make computers more reliable was the purpose of great importance.

4. You don t need to learn HTM language to make a Web page.

5. It is difficult to read a multi-colored text.

6. Digital computers use numbers to simulate real-time processes.

7. To use advanced technology is to reduce communicational time.

8. It is important to make computers as small as possible.

9. Analytical engine was invented to store data.

10. Computers were designed to perform thousands of computations per second.

11. To process data is to perform a series of operations to covert input into output. 12. Hollerith built a machine to punch holes.

II. Переведите предложения, обращая внимание на слово order.

1. In order to achieve our purpose we provide contact for researches, scientists and managers.

2. Software is some instructions made in a particular order for changing the state of computer.

3. Our computer was out of order, so we had to call the Help Desk.

4. In order to avoid astronomical figures in the calculation of bytes, we use units such as kilobytes, megabytes and gigabytes.

5. Music shop should arrange their recordings in simple alphabetical order.

6. You must work hard in order to achieve good results.

7. In order to make computers more reliable transistors were used.

8. Order is the situation when people obey law.

III. Заполните пропуски подходящим словом.

1. apply, applying, applicant, application, applicable

    a) We have interviewed five ….. for the new position.

    b) The last part of the form is not …. to foreign students.

    c) My student is thinking of …. for a grant to continue his research.

    d) The new book uses business …. to teach computer studies.

2. explain, explained, explaining, explanation, explanatory

    a) The package includes an …. booklet.

    b) The instructions are very clear and do not require any further …. .

    c) This is very …. equipment. We have never had a serious breakdown.

    d) If you are new to the system, almost everything will have to be …. .

3. generate, generated, generative, generation

    a) Exercises can be quickly …. using this program.

    b) Our company is working on a new …. of software products.

    c) No doubt this development will …. great interest.

IV. Найдите соответствие между словами и их объяснением.

1. mainframe	a) the set of software that controls a computer system
2. mouse	b) a very small piece of silicon carrying a complex electrical circuit
3. icon	c) a big computer system used for large-scale operations
4. operating system	d) the physical part of a computer system
5. software	e) a device moved by hand to indicate position on the screen
6. hardware	f) a visual symbol used in a menu instead of natural language

7. microchip   g) data, programs, etc., not forming part of a computer
                      but used when operating it.

V. Раскройте скобки, употребляя глагол в действительном или страдательном залоге (повторение пройденного материала).
1. Computers (applied, are applied, are applying) for automatic piloting and navigation.
2. The programs (write, have written, are written) to help people in the use of the computer systems.
3. As digital computers (count, counted, are counted) quickly, they widely (use, used, are used) in business.
4. If data (entered, have entered, have been entered) correctly into the data processing system, the possibility of error (reduced, is reduced, are reduced).
5. It is known that an analyst (use, uses, is used) a computer to solve specific problems.

VI. Переведите предложения, содержащие неличные формы глагола.
1. That was the machine provided with the necessary facts to solve the problem.
2. The computers designed to use integrated circuits were called third generation computers.
3. To solve mathematical problems was the main task of Mark I.
4. To control electric signals, vacuum tubes were invented by Neumann.
5. Neumanns machine was designed to store both data and instructions.
6. It was necessary to perform calculations for military and scientific purposes, so computers were developed.
7. It is not good to use slang on your site, people may not understand you.
8. It is bad to use much bright colors on Web pages, as these colors can cause headache.

КОНТРОЛЬНЫЕ РАБОТЫ

ВАРИАНТ 1

Functional Units of Computers

A standard computer system consists of three main sections: the central processing unit (CPU), the main memory and peripherals. CPU controls and manipulates data to produce information. Its function is to execute program

instructions and coordinate the activities of other units. The main memory holds the instructions and data that are processed by CPU.

The peripherals are the physical units attached to the computer. They include storage devices and input/output devices. Storage devices are located outside the central processing unit, although they may be built into system unit cabinet.

Input devices enable data to go into the computer memory. The most common input devices are the mouse and the keyboard. Output devices enable a user to receive the finished product from the system.

ВАРИАНT 2

Units of Memory

Bits are basic units of memory. Information is processed and stored in computers as electrical signals. A computer contains thousands of electronic circuits connected by switches that can only be in one of two possible states: ON (the current is flowing through the wire) or OFF (the current is not flowing through the wire). To represent these two conditions we use binary notation in which 1 means ON and 0 means OFF. This is the only way a computer can "understand" anything. Each 1 or 0 is called binary digit or bit.

Data in the form of coded characters are stored in adjacent storage locations in main memory in two principal ways: 1) as "strings" of characters – in bytes, and 2) within fixed-size "boxes" – words. A fixed number of consecutive bits that represent a character is called a byte. The most common byte size is 8-bit byte. Words are usually 1 or more bytes in length.

ВАРИАНT 3

Firmware

Firmware* is a term which is commonly used to describe certain programs stored in ROM. Firmware often refers to a sequence of instructions (software) that is substituted for hardware. For example, at the time when cost is more important than the performance, the computer system architect might decide not to use special electronic circuits (hardware) to multiply two numbers but instead of writing instructions (software) to cause the machine to perform the same function by repeated use of circuits already designed to perform addition.

*Firmware - встроенное программное обеспечение.

ВАРИАНТ 4

Some Security Techniques

Computer security techniques were developed to protect single computers and network-linked computer systems from accidental and deliberate harm including destruction of computer hardware and software, loss of data, invasion of data bases by unauthorized individuals.

Some techniques can prevent computer crimes by protecting computer screens from observations, keeping printed information and computers in locked cabinets. Passwords are confidential sequences of characters giving users access to computers. Passwords must be difficult to guess. Another way to protect a computer is to use token (plastic cards with microprocessor chips containing a password which can be easily changed). But more sophisticated methods are necessary to prevent computer crimes.

TEXT 1

LINUX

Linux has its roots in a student project. In 1992, an undergraduate called Linus Torvalds was studying computer science in Helsinki, Finland. Like most computer science courses, a big component of it was taught on Unix. Unix was the wonder operating system of the 1970s and 1980s: both a textbook example of the principles of operating system design, and sufficiently robust to be the standard OS in engineering and scientific computing. But Unix was a commercial product, and cost more than a student could pay. Annoyed by the shortcomings of Minix (a compact Unix clone written as a teaching aid by Professor Andy Tannenbaum) Linus set out to write his own "kernel" – the core of an operating system that handles memory allocation, talks to hardware devices, and makes sure everything keeps running. He used the GNU programming tools developed by Richard Stallman's Free Software Foundation, an organization of volunteers dedicated to fulfilling Stallman's ideal of making good software that anyone could use without paying. When he had written a basic kernel, he released the source code to the Linux kernel on the Internet.

Source code is important. Its the original from which compiled programs are generated. If you dont have the source code to a program, you cant modify it to fix bugs or add new features. Most software companies won't sell you their source code, or will only do so for an eye-watering price, because they believe that if they make it available it will destroy their revenue stream. What happened next was astounding, from the conventional, commercial software industry point of view – and utterly predictable to anyone who knew about the Free Software Foundation. Programmers began using Linux. They found that it didn't do things they wanted it to do –so they fixed it. And where they improved it, they sent the improvements to Linus, who rolled them into the kernel. And Linux began to grow. There's a term for this model of software development; it's called Open Source. Anyone can have the source code – its free - and can contribute to it.

As more and more people got to know about Linux, some of them began to port the Linux kernel to run on non-standard computers. Because its free, Linux is now the most widely-ported operating system.

Vocabulary

undergraduate	студент
to fulfil	выполнять
source code	исходный код
operating system	операционная система
sufficiently	достаточно
compiled	составленный, компилированный
robust	крепкий, устойчивый
bug	дефект, ошибка, сбой
utterly	весьма, чрезвычайно
to handle	управлять
shortcoming	недостаток, изъян
programming	программирование
aid	помощь, помощник
revenue	доход
kernel	ядро
astounding	изумительный, поразительный
conventional	обыкновенный, традиционный
computing	информационные технологии, вычисления
GNU	проект по свободному распространению программного обеспечения

УПРАЖНЕНИЯ

I. Выберите правильную форму глагола:

1. In recent time the ability of tiny computing devices to control complex operations …. the way many tasks are performed, ranging from scientific research to producing consumer products.

a) has transformed   b) is transforming   c) transforms

2. Computers are part of many machines and devices that once …. continual human supervision and control.

a) require   b) required   c) have required

3. In 1992 Linus Torvalds ….. computer science in Helsinki.

a) is studying   b) has studied   c) was studying

4. After he …… a basic kernel, he …… the source code to the Linux kernel on the Internet.

a) had written   b) wrote   c) has written
a) releases   b) released   c) had released

5. Many people today ...., that is, use their computers to stay in touch with the office while they ...... at home.
    a) telecommute   b) telecommuted   c) will telecommute
    a) are working   b) will work   c) work
6. In the short term, computers are certainly going to become more powerful and they ..... also ..... cheaper.
    a) were getting   b) will get   c) have got
7. Scanners .... an important part of the home office over the last few years.
    a) have become   b) will become   c) were becoming

II. Переведите предложения на русский язык. Определите граммати-ческие времена английских предложений и поставьте глаголы в вопроси-тельную и отрицательную форму:
1. As these technologies enter mainstream applications, they will have a marked impact on the way we work with personal computers.
2. Cheaper and more powerful personal computers are making it possible to perform processor-intensive tasks on the desktop.
3. As the size of computers has diminished while the power has increased, the term mainframe has fallen out of use in favor of enterprise server.
4. Though the transistor still generated a great deal of heat that subjected the computer to damage, it was a vast improvement over the vacuum tube.
5. Since film still provides better picture quality, digital cameras have not completely replaced conventional cameras.
6. Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.
7. As the Web takes a more prevalent role in computing, the processing requirements for consumer computers become less demanding.
8. So far Asus has not made an official announcement regarding the price of these products.

III. Раскройте скобки, поставив глагол в нужное время. Предложения переведите:
1. Now that computers ..... (to proliferate) in many areas and networks are available for people to access data and communicate with others, personal computers ..... (to become) interpersonal PCs.
2. There ..... (to be) some improvements in interface design since the development of the GUI.

3. In the next few years speech ….. (to become) a major component of user interfaces.

4. By making computers more social, they …… (to hope) to make them easier to use.

5. Computers ….. (to come) from nowhere 50 years ago and are rapidly catching up in capability with the human brain.

6. After the company …. (to launch) a new computer program, its profit ….. (to increase) immensely.

7. Quantum computation and molecular and nanotechnology….. radically …… (to change) the face of computers in years to come.

IV. Заполните пропуски подходящими по смыслу словами:
1. computers, computation(s), to compute, computing.

   a) The ability of tiny ….. devices to control complex operations has transformed the way many tasks are performed.

   b) Analysts aren't able …… their profits accurately without a new program.

   c) A microprocessor is a complete …. engine that is fabricated on a single chip.

   d) All our …… are linked to a main network.

   e) Some additional …… were necessary in order to obtain more accurate data.

2. to operate, operations, operating, operator.

   a) All input and output …… are actually carried out by the operating system.

   b) His job was ….. the telephone switchboard.

   c) In his early thirties he worked as a crane …….. .

   d) An ….. system is a set of programs that lies between applications software and the computer hardware.

3. programs, programmer, to program, programming.

   a) You needn't learn how …… in HTML before designing webpages.

   b) To write his own "kernel" Linus used the GNU …… tools developed by Richard Stallman's Free Software Foundation.

   c) A person who writes computer …….. is called a computer ….. .

Найдите соответствие между словами из левой и правой колонок:

hardware	настольные компьютеры
software	интерфейс

interface	вирус
to click	хранить, запоминать
input device	щёлкать, кликать
virus	аппаратное обеспечение
desktop computers	устройство ввода
to store	программное обеспечение

V. Переведите следующие словосочетания: a student project, computer science, computer science courses, a textbook example, operating system design, engineering and scientific computing, a teaching aid, memory allocation, hardware devices, programming tools, source code, software companies, revenue stream, software industry, software development, open source, non-standard computers, the most widely-ported operating system.

TEXT 2

Structural Parts of a Computer

A computer is a device that processes data according to a set of instructions known as a program. The equipment is known as the hardware and the programs and data are the software. A special set of programs, called an operating system, provides an interface for the user and allows applications programs to communicate with the hardware. Common applications programs include wordprocessors for creating and editing texts, spreadsheets for calculating mathematical formulae and databases for storing data in a way that allows the data to be sorted and searched. Anti-virus programs are used to detect and remove viruses (harmful programs that can reproduce themselves and attach themselves to other programs). Some operating systems have graphical (user) interfaces that allow the computer user to select items from menus (lists of choices) and to start programs using an input device called a mouse. This is done by pressing a button on the mouse, i.e. clicking the mouse. The main device for inputting the data is a typewriter-style keyboard and the output is commonly displayed on a monitor screen that looks like a small television screen.

There is a range of sizes and types of computer. Those designed for use by one person at a time are known as personal computers (PCs) although the term PC is usually only applied to personal computers that are compatible with the standards laid down by the company known as IBM. Personal computers

include desktop computers (for use on an office desk) and handheld computers that can be carried around by the user. Unlike most machines, computers don't have a fixed purpose. They are multi-purpose tools. They can be used in a very wide variety of situations and are found in a wide range of systems including security systems, cars and phones.

Vocabulary

device	устройство
items	пункты
hardware	аппаратное обеспечение
input device	устройство ввода
software	программное обеспечение
keyboard	клавиатура
interface	интерфейс
to display	отображать
wordprocessor	текстовый процессор
compatible	совместимый
spreadsheet	электронная таблица
multi-purpose	многоцелевой
to detect	обнаружить
to attach	привязать
to process	обрабатывать
data	данные
desktop	настольный
handheld	портативный

УПРАЖНЕНИЯ

I. Поставьте глаголы в скобках в форму страдательного залога с учётом указанного времени. Переведите предложения:
1. The equipment ……. (to know) as the hardware. (Present Simple)
2. Anti-virus programs …. (to use) to detect and remove viruses. (Future Simple)
3. Handheld computers ….. (to carry) around by the user. (Present Simple)
4. This computer …..(to equip) with the most advanced memory chips. (Past Simple)
5. Data and instructions …. (to process) by the CPU. (Past Simple)
6. A program … (to write) in one of several computer languages. (Present Perfect)

II. Преобразуйте следующие предложения, используя страдательный залог. Переведите полученные предложения на русский язык:

1. A special set of programs provides an interface for the user.
2. Common applications programs include wordprocessors, spreadsheets and databases.
3. A computer receives instructions in the form of a program.
4. Not all computer systems are compatible, i.e. they cannot use the same programs and data.
5. They installed the computers yesterday.
6. I haven't upgraded the operating system yet.
7. A computer will follow special instructions.

III. Переведите следующие предложения на русский язык, обращая внимание на особенности использования страдательного залога. Поставьте глаголы в отрицательную и вопросительную форму:

1. As computer systems are developed, they are becoming more common and are gradually being used for more and more purposes.
2. How they are developed, and for what purposes they will be actually used in the future, can be influenced by computer users.
3. Before a program or data can be used, it must be transferred from the storage device to the main RAM memory (random access memory).
4. The details were stored on a smart card (a plastic card with a built-in computer system that can store large amounts of data).
5. The ability of tiny computing devices to control complex operations has transformed the way many tasks are performed, ranging from scientific research to producing consumer products.
6. In early 2008, the mobile computer landscape was dominated by laptop computers.
7. Fifth generation computing devices, based on artificial intelligence, are still in development, though there are some applications, such as voice recognition, that are being used today.
8. Each generation of computer is characterized by a major technological development that fundamentally changed the way computers operate, resulting in increasingly smaller, cheaper, more powerful and more efficient and reliable devices.

IV. Переведите следующие словосочетания: operating system, applications programs, mathematical formulae, anti-virus programs, graphical

interfaces, computer user, input device, monitor screen, typewriter-style keyboard, personal computers, desktop computers, office desk, handheld computers, multi-purpose tools, fixed purpose, security systems, computer types.

V. Заполните пропуски подходящими по смыслу словами:
1. A computer is an ….. device.
   A) electron   B) electronic
2. A computer can do thousands of … per second.
   A) calculate   B) calculations
3. A computer … difficult operations.
   A) performance   B) performs
4. Some parts of a computer ….and display information.
   A) remove   B) removal
5. At …. incredible speed it can file away a lot of information.
   A) equally   B) equal
6. A computer can … search through all the information.
   A) rapidly   B) rapid

VI. Подберите к терминам из левой колонки определения, данные справа:
1. Device   A) the programs used by computers for doing particular jobs
2. Data   B) a small object that you move in order to do things on a computer screen
3. Software   C) a piece of computer equipment with keys on it, used for putting information into a computer
4. Hardware   D) a machine or piece of equipment that does a particular thing
5. Keyboard   E) information in a form that a computer can use
6. Mouse   F) computer equipment

TEXT 3

Communications Systems

In the short term, computers are certainly going to become more powerful and they will also get cheaper, that means they will become much more commonly available. It is likely they will be integrated with other devices and may even become specialized devices you throw away when they go wrong. Monitors are going to change from cathode ray tube monitors to flat screen

panels because they take up less space and use less power. It is likely there will be devices used for security, biometric devices, for scanning your eye or taking your fingerprints. They will be used instead of passwords. The shape and design of computers may change and become much more varied because we can now construct the motherboards in flexible form. On the software side, companies are trying hard to improve voice control so you will be able to talk to your computer to control it without using a keyboard.

Another development which is going to become more common in the near future is video. You will be able to use your computer as a video-recorder and edit video on your computer. The way the software is sold might change too. Instead of buying individual packages people may rent or hire the components they need – wordprocessor or whatever – and connect to them over the Internet. Service providers will make different components available and you will be charged a fee for the ones you use.

In the longer term they won't be able to make computers any more powerful using electronics so other methods may come in for the data signals in the computer. Computers will probably be integrated more with TV systems and telephony and become much more communication devices. It is likely much smaller devices will be made, probably built into clothing so that you can walk about wearing a computer which will allow you to communicate wherever you go. There may even be devices implanted into our bodies to help people with disabilities and computers might be implanted into the human brain. We might not call them computers in the future but they will be everywhere.

Vocabulary

available	доступный
edit	редактировать
devices	приборы
service	услуга
to charge a fee	взыскивать плату
people with disabilities	инвалиды
provider	провайдер, поставщик
fingerprints	отпечатки пальцев
flat screen	плоский экран
passwords	пароли
varied	различный, разнообразный
flexible	гибкий

motherboard	материнская (системная) плата
voice control	голосовое управление
integrated	интегрированный, объединенный
cathode ray tube	электронно-лучевая трубка, ЭЛТ

УПРАЖНЕНИЯ

I. Образуйте форму сравнительной и превосходной степени от следующих прилагательных и наречий: short, powerful, cheap, good, available, flat, bad, little, flexible, hard, common, near, different, long, many, far, small, compatible, much, fast.

II. Выберите правильный вариант перевода подчеркнутых форм:
1. This computer is equipped with the most advanced memory chips.
    А) самыми передовыми   В) более передовыми
2. Our information is as precise as yours.
    А) более точная, чем   В) такая же точная, как
3. To make a computer smaller it is necessary to use flat chips.
    А) самым маленьким   В) меньше
4. The earliest computers were less intelligent.
    А) более "умные"   В) менее "умные"

5. Computer hardware is useless without software.

    А) менее полезно   В) бесполезно

6. The use of computers doesn't prevent people from being more creative.

    А) самыми креативными   В) более креативными

7. Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.
    А) дешевле   В) дешёвые
8. Most desktops offer more power, storage and versatility for less cost than portable computers.
    А) больше всего   В) больше
    А) меньшая   В) самая маленькая

III. Переведите предложения, обращая внимание на степени сравнения прилагательных и сравнительные конструкции:

1. This method is rarely used with microcomputers because it is more complicated and expensive than asynchronous transmission.
2. Other technicians are called in to identify and repair faults as quickly as possible usually by replacing faulty parts.
3. Not only is computing equipment getting smaller, it is getting more sophisticated.
4. Smart phones, cars, and appliances with built in computers can be programmed to better meet individual needs.
5. The smaller is the computer, the more convenient is to take it with you wherever you go.
6. A laptop, however, is much smaller and lighter than even the most compact PC tower.
7. A laptop hard drive is also physically smaller than that of a desktop.
8. The transistor was far superior to the vacuum tube, allowing computers to become smaller, faster, cheaper, more energy-efficient and more reliable than their first-generation predecessors.
9. The latest trend in computing is wearable computers.
10. The higher the resolution, the more sensitive the mouse is and the less you need to move it to obtain a response.

IV. Найдите продолжение предложения в правой колонке:

1. Computers make the world …	A) on a smart card
2. There is a large number of computer languages ……..	B) responsible for developing and implementing computer software
3. A software designer produces the programs controlling……	C) available for use by programmers
4. An IT systems manager is …	D) smaller and smarter
5. The information is stored ….	E) the internal operations of computers

V. Подберите к терминам из левой колонки определения, приведённые справа:

Link	A) a computer program used for searching for information on the Internet
Webpage	B) a computer system that allows people in different parts of the world to exchange information

Search engine	C) a computer that controls or performs a particular job for all the computers in a Network
Database	D) a connection between one file or section and another, for example on a website
The Internet	E) a page or document that you can read on a website
Server	F) a large amount of information stored in a computer in an organized way that allows individual pieces of information to be found quickly

VI. Переведите следующие словосочетания на русский язык:
specialized devices, cathode ray tube monitors, flat screen panels, biometric devices, voice control, video-recorder, individual packages, service providers, data signals, TV systems, communication devices, human brain.

TEXT 4

Motherboard

The base of operations for the brains of a computer is the motherboard. The motherboard serves as a literal foundation for many of the other elements inside your computer. It is a large printed circuit board. The motherboard provides the connections and sockets that let other components communicate with each other. Motherboards come in different shapes and sizes - a motherboard in a laptop computer might not look like one from a desktop PC.

The computer brain is a microprocessor called the central processing unit (CPU). The CPU is a chip containing millions of tiny transistors. It is the CPU's job to perform the calculations necessary to make the computer work - the transistors in the CPU manipulate the data. You can think of a CPU as the decision maker.

Another critical component in computers is memory. The two most important kinds of memory are read-only memory (ROM) and random access memory (RAM). Computers can read data stored in ROM, but can't write new data to it. With RAM, computers can read from and write to that memory. Without computer memory, every calculation on a computer would be stateless. That means there would be no way to preserve information from one moment to the next and every process would start on a clean slate. That is not useful if you want to create complex programs.

Many desktop PCs have the capacity for additional RAM. The user simply has to open the computer and plug RAM chips into the appropriate sockets on the motherboard. But other computers are sealed systems - you aren't able to open them and make changes.

A chip called the Basic Input/Output System (BIOS) works closely with the CPU. BIOS is a specific kind of ROM. If you think of the CPU as the brain of the computer, then you might consider BIOS to be the spine. It is the job of BIOS to handle interactions between the software running on a computer and the machine's hardware components.

The motherboard, CPU, ROM, RAM and BIOS handle most of the heavy lifting for computer processes. They are in charge of allocating resources to applications so that they run smoothly. They also accept input from devices like keyboards, mice and other computer accessories.

Vocabulary

motherboard	материнская плата
random access memory	оперативная память
literal	буквенный, буквальный
plug	подключать, вставлять в разъём
socket	гнездо, (проф.) сокет, разъём
desktop	настольный
laptop	портативный
spine	позвоночник, основа
sealed systems	замкнутые системы
transistors	транзисторы
in charge of	ответственный за
smoothly	гладко
critical	важный, необходимый
Basic Input/Output System	БИОС, базовая система ввода/вывода
read-only memory	постоянное запоминающее устройство, ПЗУ
printed circuit board	печатная плата
central processing unit	центральный процессор

УПРАЖНЕНИЯ

I. Переведите предложения на русский язык, обращая внимание на употребление модальных глаголов. Поставьте глаголы в вопросительную и отрицательную форму:

1. Although access to the system <u>can be controlled</u>, networks are more vulnerable to viruses.
2. A machine which has been exposed to a moist atmosphere <u>should be given</u> time to dry out before being put into use.
3. Although using the ISP (поставщик интернет услуг) is free, you still <u>have to pay</u> for your online time.
4. With small computing devices available for performing smart tasks like cooking dinner, programming the VCR (видеомагнитофон), and controlling the flow of information in an organization, people <u>are able to spend</u> more time doing what they often do best – being creative.
5. The way the software is sold <u>might change</u> too in the near future.
6. Ultimately people power <u>must be exercised</u> to ensure that computers are used not only efficiently but in a socially responsible way.
7. As laptop technology evolves, manufacturers <u>are able to pack</u> more power into a smaller package.

II. Выберите подходящую форму модального глагола:
1. With a digital camera you ….. transfer images directly to a PC but with a conventional camera you ….. to use a scanner.
    a) can   b) can t   c) is able to
    a) must   b) should   c) need
2. The wire linking a static earthing band to earth …… contain a resistor of at least 1 megohm.
    a) may   b) must   c) have to
3.   Cards …… be removed from their anti-static packing until required.
    a) must   b) arent able to   c) must not
4.   In the early days of computing, mainframes were huge computers that ……fill an entire room or even a whole floor.
    a) were able to   b) can   c) should
5. A chip …. be as large as an inch on a side and …. contain tens of millions of transistors.
    a) had to   b) might   c) needn't
    a) is able to   b)cant   c) isnt able to
6. First generation computers relied on machine language to perform operations, and they ….. only solve one problem at a time.
    a) must   b) are able to   c) could
7. Before a program or data can be used, it ….. be transferred from the storage device to the main RAM memory (random access memory).

a) has to   b) may   c) was to
8. When unplugged, a laptop …… rely on the charge inside the battery for its power needs.
    a) had to   b) has to   c) was able to

III. Найдите продолжение предложения в правой колонке:

1. Adding more memory ……	A) be earthed
2. Computers can help people …..	B) take many forms
3. You can find information on the Internet …..	C) varies between different types of printer
4. This appliance must ….	D) lets your computer work faster
5. The speed, quality and cost of printing ……	E) work more creatively
6. Data can ……..	F) by using a search engine

IV. С помощью:
а) префиксов il, im - образуйте прилагательные с отрицательным значением от следующих слов и переведите их: possible, patient, logical, mature, material, liberal, measurable, legal, memorial, mobile, modest, literate, moral, mortal, perfect, legible, legitimate;
б) префикса dis – образуйте глаголы и существительные от следующих слов и переведите их: abuse, advantage, affection, agree, allow, appear, agreement, appoint, approval, belief, appearance, charge, close.

V. Определите части речи по словообразовательным элементам:
image, important, collection, connector, only, vary, computer, printing, specially, transferred, various, agreement, measurable.

VI. Заполните пропуски подходящими по смыслу словами:
digital, a bus, memory, data, printers, computer, battery, software, size, print.
1. Some types of …. are mono (print in black and white only) and others can …. in colour.
2. Hardware and …… can be shared, however the whole network depends on the central server.
3. ……. cameras store images on …… cards so pictures can be transferred easily to a computer.

4. The job requires basic …… skills.

5. …… is a collection of wires and connectors through which the data is transmitted.

6. The ….. of a bus is important because it determines how much ….. can be transmitted at one time.

7. Computers have a small ……. inside them that's always on, even when you power down the rest of the computer.

TEXT 5

The World Wide Web

The World Wide Web (commonly referred to as WWW or the Web) is a service on the Internet. It consists of a set of linked documents known as webpages which can be viewed using a program called a browser. The links on a webpage (called hyperlinks) contain the Web address of the webpage that will be displayed if the user clicks on the link.

The Web address of a webpage is also known as a URL (Uniform Resource Locator), e.g. http://www.hw.ac.uk/libWWW/irn/irn.html. The URL consists of a number of separate parts divided by forward slashes (/). When a user clicks on a hyperlink on a webpage, the browser program contacts a server computer known as a DNS (Domain Name System) server to look up the IP (Internet Protocol) address (the unique 32-bit binary number) of the remote Web server computer (the computer storing the webpages) given in the URL of the linked webpage. The DNS has a stored table of names and addresses of nodes (a network terminal or point where a computer is connected to a network) on the Internet.

Special websites provide a facility known as a search engine that can be used to search for other websites. A search engine uses special programs to collect information about websites on the World Wide Web and stores the information in a database (a type of applications program used for storing information so that it can be easily searched and sorted). The user can then search the database to obtain a list of links to relevant websites. To search using a search engine, the user types words (known as keywords) into a text box (called a search box). The search engine then displays a list of website links that are relevant to the given keywords.

Vocabulary

World Wide Web	сеть, всемирная паутина
binary number	двоичное число
webpages	веб-страницы
nodes	узлы
browser	браузер, навигатор
facility	возможность, оборудование
link	соединение, ссылка
search engine	поисковая система
hyperlinks	гипертекстовые связи
database	база данных
keywords	ключевые слова
text (search) box	текстовое окно
server	сервер
relevant to	относящийся к
slash	косая черта (слеш)
DNS	служба имён доменов
remote	удаленный
URL	унифицированный указатель информационного ресурса
IP address	IP-адрес

УПРАЖНЕНИЯ

I. Образуйте форму причастия I и причастия II от следующих глаголов, переведите их на русский язык:

to refer, to connect, to link, to divide, to store, to give, to provide, to use, to collect, to search, to obtain, to call, to display.

II. Образуйте форму причастия I или причастия II от глаголов, указанных в скобках. Переведите предложения:
1. Unix is an …… (to operate) system …… (to use) on all sizes of computers, but mostly large ones; available in many versions, such as Linux, HP-UX, Xenix, etc.
2. Some technicians carry out routine servicing of large mainframe systems, ….. (to aim) to avoid breakdowns.
3. Network support maintains the link between PCs and workstations ….. (to connect) in a network.

4. Software engineer produces the programs …… (to control) the internal operations of computers.

5. Some software houses produce specially ….. (to write) applications.

6. The keyboard remains locked …… (to prevent) you from using the PC.

7. HTML (язык разметки гипертекста) is a mark-up language ….. (to use) to describe the structure of a web page.

8. A server is a powerful computer …. (to store) many programs …. (to share) by all the clients in the network.

9. A bridge is a hardware and software combination …… (to apply) to connect the same type of networks.

III. Определите части речи по словообразовательным элементам:
service, user, divided, separate, server, special, facility, easily, information, to search, locator, operating, locked.

IV. Найдите соответствие между словами из левой и правой колонок:

Keyboard	системы центрального процессора
Operating system	главным образом
Available	проводить, осуществлять
Mark-up language	доля возврата
Carry out	доступный
Set	операционная система
Mostly	язык разметки
Mainframe systems	набор
Return rate	клавиатура

V. Замените подчёркнутую часть предложения причастным оборотом. Предложения переведите:

1. A computer is a device that processes data according to a set of instructions known as a program.

2. Some operating systems have graphical (user) interfaces that allow the computer user to select items from menus.

3. A special set of programs, which is called an operating system, provides an interface for the user.

4. Anti-virus programs that are used to detect and remove viruses can be of different efficiency.

5. A search engine uses special programs to collect information about websites on the World Wide Web.

6. A gateway is an interface <u>that enables</u> dissimilar networks to communicate.
7. A client is a network computer <u>that is applied</u> for accessing a service on a server.
8. A router is a special computer <u>that directs</u> messages when several networks are linked.
9. A network is a number of computers and peripherals <u>that are linked</u> together.

VI. Образуйте существительные от глаголов с помощью суффиксов - tion, -ment и переведите их: to operate, to produce, to inform, to equip, to connect, to apply, to prevent, to describe, to select, to provide, to detect, to collect, to divide, to develop.

TEXT 6

Computer Mice

Mice first broke onto the public stage with the introduction of the Apple Macintosh in 1984, and since then they have helped to completely redefine the way we use computers. Every day of your computing life, you reach out for your mouse whenever you want to move your cursor or activate something. Your mouse senses your motion and your clicks and sends them to the computer so it can respond appropriately.

Developed by Agilent Technologies and introduced to the world in late 1999, the optical mouse actually uses a tiny camera to take thousands of pictures every second. Able to work on almost any surface without a mouse pad, most optical mice use a small, red light-emitting diode (LED) that bounces light off that surface onto a sensor. In addition to LEDs, recent innovations are laser-based optical mice that detect more surface details compared to LED technology. This results in the ability to use a laser-based optical mouse on even more surfaces than a LED mouse.

A number of factors affect the accuracy of an optical mouse. One of the most important aspects is resolution. The resolution is the number of pixels per inch that the optical sensor and focusing lens ''see'' when you move the mouse. Resolution is expressed as dots per inch (dpi). The higher the resolution, the more sensitive the mouse is and the less you need to move it to obtain a response. Most mice have a resolution of 400 or 800 dpi. However, mice designed for playing electronic games can offer as much as 1600 dpi resolution. Some gaming mice also allow you to increase the dpi on the fly to make the mouse less sensitive in situations when you need to make smaller, slower movements.

Historically, corded mice have been more responsive than wireless mice. This fact is changing, however, with the advent of improvements in wireless technologies and optical sensors. Most wireless mice use radio frequency (RF) technology to communicate information to your computer. Being radio-based, RF devices require two main components: a transmitter and a receiver. The transmitter sends an electromagnetic (radio) signal that encodes the information about the mouse's movements and the buttons you click. The receiver accepts the signal, decodes it and passes it on to the mouse driver software and your computer's operating system.

Unlike infrared technology, which is commonly used for short-range wireless communications such as television remote controls, RF devices do not need a clear line of sight between the transmitter (mouse) and receiver. Just like other types of devices that use radio waves to communicate, a wireless mouse signal can pass through barriers such as a desk or your monitor. As with most mice on the market today, wireless mice use optical sensor technology rather than the earlier track-ball system. Optical technology improves accuracy and lets you use the wireless mouse on almost any surface - an important feature when you are not tied to your computer by a cord. In order for the transmitter in the mouse to communicate with its receiver, they must be paired. This means that both devices are operating at the same frequency on the same channel using a common identification code. The purpose of pairing is to filter out interference from other sources and RF devices.

Vocabulary

cursor	курсор, указатель
optical mouse	оптическая мышь
mouse pad	коврик для мыши
light-emitting diode	светодиод, светоизлучающий диод, СИД
to bounce off	отражать, отражаться от чего-либо
accuracy	точность, с которой выполняется измерение или вычисление
resolution	разрешение, разрешающая способность
focusing lens	фокусирующая линза
on the fly	на лету, в спешке, не останавливаясь
corded mouse	проводная мышь
cord	шнур, соединительный кабель, провод
wireless	беспроводной
(RF) technology	радиочастотная технология

transmitter	отправитель, передатчик, трансмиттер
receiver	приёмник, получатель, ресивер
remote control	пульт дистанционного управления, ПДУ
line of sight	прямая видимость, линия визирования, линия прямой видимости
track-ball	шаровой манипулятор (для управления движением курсора)
interference	вмешательство, интерференция, взаимные помехи

УПРАЖНЕНИЯ

I. Образуйте глаголы от следующих существительных и переведите их:
computer, definition, process, operation, development, organization, function, generation, installation, requirement, charge, expression, consideration, storage, modification, performance, representation, package, establishment, reduction.

II. Образуйте инфинитивные формы от следующих форм причастия II и переведите их:
blown, implemented, broken, focused, designed, introduced, sent, developed, compared, taken, detected, seen, expressed, corded, meant, tied, known, brought.

III. Выберите правильный вариант перевода подчёркнутых форм:
1. Some people use the term UMPC in order to describe all small computer devices, including netbooks.
   a) описать   b) чтобы описать   c) в порядке описания
2. This means that anyone wanting to build a whitebook must find: microprocessor, RAM and wireless card.
   a) построить   b) построенный   c) чтобы построить
   3. A touchscreen interface allows you to use the netbook as a tablet PC.
   a) используя   b) чтобы использовать   c) использовать
4. There are still some laptops that are too large to be considered notebooks.
   a) считаются   b) чтобы считаться   c) считаться
5. As smartphones become more powerful, they begin to fill the same niche as netbooks.
   a) заполненный   b) заполнять   c) чтобы заполнять
6. The microprocessor, or CPU, works with the operating system in order to control the computer.

a) чтобы контролировать b) в порядке контроля c) контролировать
7. There are a lot of terms used <u>to describe</u> computers.
    a) описать   b) чтобы описать   c) описывая
8. There's a host (масса) of new terms and categories <u>to take into consideration</u> when shopping for a mobile computer.
    a) которые нужно принимать во внимание
    b) чтобы принимать во внимание
    c) принимать во внимание
9. Smartphones also have the potential <u>to make</u> the mobile computing landscape more confusing.
    a) делающий   b) делать   c) который делает
10. Despite the return rates, the popularity of netbooks and other portable computing devices continues <u>to grow</u>.
    a) рост   b) чтобы расти   c) расти

    IV. Измените предложения по указанному образцу, используя инфинитив. Переведите полученные предложения на русский язык:
    Образец:
    Managing the computer's resources is an important function of the operating system.
    An important function of the operating system is to manage the computers resources.

1. Loading into memory non-resident programs as required is one task of the supervisor program.
……………………………………………………….....................................
2. Communicating directly with the hardware is the role of the operating system.
……………………………………………………………….............................
3. Establishing a user interface is one of the key functions of the operating system.
……..……..……..……..……..……..……..……..……..……..……..……..……..……..……..……..……..……..……..…..
4. Providing services for applications software is an additional role.
…………………………………………………………………………………
5. Supporting multiple programs and users is part of the work of mainframe operating systems.
…………………………………………………………………………….…
6. Facilitating interaction between a single user and a PC is the task in most cases.

…………………………………………………………………………………
7. Processing large amounts of data quickly is one of the most important functions of a computer.

……………………………………………………………………............
8. Allowing the computer to process data faster is the main reason for installing more memory.

…………………………………………………………………………………

V. Переведите предложения на русский язык, обращая внимание на употребление инфинитива:

1. The first computers were very expensive to operate and in addition to using a great deal of electricity, generated a lot of heat, which was often the cause of malfunctions.

2. As these small computers became more powerful, they could be linked together to form networks, which eventually led to the development of the Internet.

3. The use of parallel processing and superconductors is helping to make artificial intelligence a reality.

4. The goal of fifth-generation computing is to develop devices that respond to natural language input and are capable of learning and self-organization.

5. The computer and the operating system work together to reduce the CPU speed when the computer is not in use or when the processor does not need to run as quickly.

6. Laptop computers are often a little slower and have less graphics and sound processing power, although these differences can be too small for most users to notice.

7. It is still difficult to find parts to build a laptop from the ground up, but vendors like ASUS and ECS allow some customers to order blank laptop shells.

8. Gaming enthusiasts and audiophiles can supplement their laptops' sound capabilities with external sound controllers, which use USB or FireWire ports to connect to the laptop.

9. For many years, the prevailing strategy for computer consumers was to find the fastest, most powerful computer in their price range.

IV. Найдите соответствие между словами из левой и правой колонок:

To process	оболочка
Memory	курсор мыши
Laptop	обрабатывать

Wireless	сенсорный экран
Folder	сбой, неисправность
Mouse pointer	память
Mainframe	беспроводной
Malfunction	не марочная сборка (о компьютере)
Shell	планшетный ПК
Whitebook	портативный компьютер
Tablet PC	папка
Touchscreen	универсальная вычислительная машина

VII. Заполните пропуски подходящими по смыслу инфинитивами: to copy, to switch, to type, to work, to get, to display, to use, to operate.

1. The Help facility enables users …….. advice on most problems.
2. Adding more memory lets your computer ……… faster.
3. Windows allows you …….. two different folders at the same time.
4. The Shift key allows you ……… in upper case.
5. The MouseKeys feature enables you …….. the numeric keypad to move the mouse pointer.
6. ALT + TAB allows you ……… between programs.
7. The Sticky Keys feature helps disabled people ……… two keys simultaneously.
8. ALT + PRINT SCREEN lets you ……. an image of an active window to the Clipboard.

VIII. Найдите продолжение предложений среди вариантов данных ниже:
1. Server is a computer that has been optimized ……………
2. Laptops usually have small fans, heat sinks ……………….
3. It is the CPU's job to perform the calculations necessary …………...
4. People want to be able …………………..
5. It is likely that computers will be used ……………….
6. The best way to begin hacking into a system is ……………

A) to try to get hold of a password.
B) to make the computer work.
C) to provide services to other computers over a network.
D) to develop other faster computers.
E) to help dissipate the heat from the CPU.
F) to access applications and data any time and anywhere.

ВАРИАНТ 1

The Anatomy of a Virus

A biological virus is a very small, simple organism that infects living cells, known as the host, by attaching itself to them and using them to reproduce itself. This often causes harm to the host cells. Similarly, a computer virus is a very small program routine that infects a computer system and uses its resources to reproduce itself. It often does this by patching the operating system to enable it to detect program files, such as COM or EXE files. It then copies itself into those files. This sometimes causes harm to the host computer system. When the user runs an infected program, it is loaded into memory carrying the virus. The virus uses a common programming technique to stay resident in memory. It can then use a reproduction routine to infect other programs. This process continues until the computer is switched off. The virus may also contain a payload that remains dormant until a trigger event activates it, such as the user pressing a particular key. The payload can have a variety of forms.

To be a virus, a program only needs to have a reproduction routine that enables it to infect other programs. Viruses can, however, have four main parts. A misdirection routine that enables it to hide itself; a reproduction routine that allows it to copy itself to other programs; a trigger that causes the payload to be activated at a particular time or when a particular event takes place; and a payload that may be a fairly harmless joke or may be very destructive. A program that has a payload but doesnt have a reproduction routine is known as a Trojan.

ВАРИАНТ 2

Operating Systems: Hidden Software

When a brand new computer comes off the factory assembly line, it can do nothing. The hardware needs software to make it work. Are we talking about applications software such as wordprocessing or spreadsheet software? Partly. But an applications software package does not communicate directly with the hardware. Between the applications software and the hardware is a software interface – an operating system. An operating system is a set of

programs that lies between applications software and the computer hardware. The most important program in the operating system, the program that manages the operating system, is the supervisor program, most of which remains in memory and is thus referred to as resident. The supervisor controls the entire operating system and loads into memory other operating system programs (called nonresident) from disk storage only as needed.

An operating system has three main functions: (1) manage the computers resources, such as the central processing unit, memory, disk drives, and printers, (2) establish a user interface, and (3) execute and provide services for applications software. Keep in mind, however, that much of the work of an operating system is hidden from the user. In particular, the first listed function, managing the computers resources, is taken care of without the user being aware of the details. Furthermore, all input and output operations, although invoked by an applications program, are actually carried out by the operating system.

ВАРИАНТ 3

How To Become a Programming Expert

The primary requirements for being a good programmer are nothing more than a good memory, an attention to details, a logical mind and the ability to work through a problem in a methodical manner breaking tasks down into smaller, more manageable pieces.

However, its not enough just to turn up for a job interview with a logical mind as your sole qualification. An employer will want to see some sort of formal qualification and a proven track record. But if you can show someone an impressive piece of software with your name on it, it will count for a lot more than a string of academic qualifications.

So what specific skills are employers looking for? The Windows market is booming and there's a demand for good C, C++, Delphi, Java and Visual Basic developers. Avoid older languages such as FORTRAN and COBOL unless you want to work as a contract programmer.

For someone starting out, the best advice would be to subscribe to the programming magazines such as Microsoft Systems Journal. Get one or two of the low-cost "student" editions of C++, Visual Basic and Delphi. Get a decent book on Windows programming. If you decide programming is really for you, spend more money on a training course.

ВАРИАНТ 4

How To Become an IT Manager

IT managers manage projects, technology and people. Any large organization will have at least one IT manager responsible for ensuring that everyone who actually needs a PC has one and that it works properly. This means taking responsibility for the maintenance of servers and the installation of new software, and for staffing a help-desk and a support group. Medium comhfnies are also likely to have an IT systems manager. They are responsible for developing and implementing computer software that supports the operations of the business. They are responsible for multiple development projects and oversee the implementation and support of the systems. Companies will have two or three major systems that are probably bought off the shelf and then tailored by an in-house development team.

Apart from basic hardware and software expertise, an IT manager will typically have over five years experience in the industry. Most are between 30 and 45. Since IT managers have to take responsibility for budgets and for staff, employers look for both of these factors in any potential recruit. Nearly all IT managers have at least a first degree if not a second one as well. Interestingly, many of them don't have degrees in computing science. In any case, the best qualification for becoming a manager is experience. If your personality is such that you don't like to be asked to take responsibility for a small team or a project, then you can forget being an IT manager. You need to be bright, communicative and be able to earn the trust of your teams. Most of this can't be taught, so if you don't have these skills then divert your career elsewhere.

ВАРИАНТ 5

The Future of Information Technology

We are in the midst of convergence. At the hardware layer, computers, phones and consumer electronics are converging. At the applications layer, we see convergence of information, entertainment, communications, shopping, commerce, and education.

Computers came from nowhere 50 years ago and are rapidly catching up in capability with the human brain. We can expect human - machine equivalence

by about 2015. But after this, computers will continue to get smarter. There is a noticeable positive feedback loop in technology development, with each generation of improved computers giving us more assistance in the design and development of the next. Ultimately, they will design their offspring with little or no human involvement. This technology development will push every field of knowledge forwards, not just computing. It will be almost as though extraterrestrials had landed in 2020 and given us all their advanced technology overnight.

But we will never get far unless we can solve the interface problem. In the near future we may have electronic pets, with video camera eyes and microphone ears, linked by radio to the family computer. With voice and language recognition we will have easy access to all that the Internet can provide. We can tell the pet what we want and it will sort it out for us. It will be impossible to be technophobic about such an interface, and the only IT skill needed will be to speak any major language.

ТЕКСТ 1

Input-Output Environment

Data and instructions must enter the data processing system and information must leave it. These operations are performed by input and output (I/O) units that link the computer to its external environment. The I/O environment may be human-related or human-independent. A remote banking terminal is an example of a human-related input environment and a printer is an example of a device that produces output in a human-readable format. A magnetic tape on which the collected data are stored in binary format is an example of a human-independent output.

Data enter input units in forms that depend on the particular device used. For example, data can be entered from a keyboard in a manner similar to typing. This differs from the way when data are entered by a scanner. But regardless of the input forms, all input devices must provide a computer with data that are transformed into the binary codes that the primary memory of the computer is designed to accept. This transformation is accomplished by units called I/O interfaces. Input interfaces are designed to match the physical or electrical characteristics of input devices to the requirements of the computer system. Similarly, output interfaces must be designed to reverse the process and to adapt the output to the external environment. These I/O interfaces are also called input-output processors.

Vocabulary

to link	связывать, соединять
environment	окружение, среда
external	внешний
remote	удаленный
human-related	связанный с человеком
manner	способ, образ (действия)
regardless of	независимо от
to transform	преобразовывать, превращать
to accomplish	завершать, заканчивать
to match	согласовывать, находить соответствие

requirement	требование
readable	удобный для чтения

УПРАЖНЕНИЯ

I.Заполните пропуски подходящими словами.

1. Input-output devices allow the computer ….with its external environment.

    a) to compute   b) to command   c) to communicate

2. An I/O interface is a special …. that converts input data into the internal codes.

    a) register   b) processor   c) keyboard

3. Data are entered from a ….. in a manner similar to typing.

    a) keyboard   b) printer   c) scanner

4. A remote banking terminal is an example of a …. input environment.

    a) human-dependent   b) human-independent   c) human-related

5. Input …. match the physical or electrical characteristics of input devices to the requirements of the computer system.

    a) interconnections   b) interfaces   c) intercommunications

    6. They …. data into the binary codes.

a) transmit   b) transfer   c) transform

II. Перепишите предложения, используя формы страдательного залога.

1. You have sent us the wrong documents again.

    The wrong documents ………………………………… .

2. Someone broke two monitors during transportation.

    Two monitors ……………………………………………… .

3. Can you solve the problem quickly?

    Can the problem …………………………………………… .

4. A faulty connection will cause the problems with the hard disk.

    The problems ……………………………………………. .

5. You delivered the printers three weeks late.

    The printers …………………………………………… .

6. We are returning the goods because we are not satisfied with them.

    The goods …………………………………………….. .

III. Переведите предложения, содержащие причастие II (Participle II) в различных позициях.

1. The results obtained are particular important.

2. The digital computer properly guided gives answers which have a high degree of accuracy.

3. It is necessary to keep buttons depressed.

4. The problems studied helped us understand many things.

5. The system requirements for running a WWW server are minimal, so administrators with limited funds can become information providers.

6. The operating system is a collection of programs provided by the computer's manufacturer.

7. The program given allows to translate source programs into object programs.

IV. Переведите предложения. Определите, какая неличная форма глагола используется в предложениях.

1. Studying the problem we could find answers for many questions.

2. Scientists studying the problem made a lot of experiments.

3. Digital programming implies the preparation of a problem by putting it in the form which the computer can understand.

4. Programming a computer involves analyzing the problem.

5. Moving a finger along the surface of the touch pad (сенсорная панель) is transformed into the cursor movement across the screen.

6. Moving the cursor across the screen surface you choose the operation needed.

7. Scanner is used for inputting images and converting them into the computer form.

8. There are several devices for inputting information into the computer.

V. Заполните пропуски подходящим словом.

Instruction, instruct, instructed, instructor

a) Our maths …. explained to us the principles of binary arithmetic.

b) We were ….. to document our programs carefully.

c) Both ….. and data must be changed into machine code before the computer can operate on them.

d) It is necessary to …..students before using this program.

VI. Переведите словосочетания:

a) application environment, communication environment, external environment, hardware environment, management environment, network environment, processing environment, user environment;

b) remote terminal, security terminal, text terminal, terminal adapter, terminal mode, desktop terminal, printer terminal.

ТЕКСТ 2

Printers

Printers provide information in a human-readable form. They are the most commonly used output devices and are components of almost all computer systems. Printers are classified as character printers, line printers and page printers in order to identify three approaches to printing.

Character printers print only one character at a time. Character printers are the type used on computers of all sizes including microcomputers, especially if printing requirements are not large. One of the newest type of character printers is the ink-jet printer. It sprays small drops of ink on paper to form printed characters. The ink has a high iron content which is affected by magnetic fields of the printer. These magnetic fields cause the ink to take the shape of a character as the ink approaches the paper.

Line printers are electromechanical machines used for high-volume paper output on most computer systems. They can print a line at a time. Line printers have been designed to work at the speed of 2500 lines per minute.

Page printers are high-speed printers. Their printing rate is so high that output seems to appear from the printer a page at a time. The technique used in the page printers is called electrophotographic technique. Laser-beam printers are the combination of electrophotographic and laser-beam techniques to create printer output at a rate equal to 1800 lines per minute.

Vocabulary

approach	подход (к проблеме)
character printer	принтер с посимвольной печатью
line (page) printer	принтер с построчной (постраничной) печатью
ink-jet printer	струйный принтер
a drop	капля
iron	железо
to affect	влиять, воздействовать
at a time	за один раз
character	символ, знак, буква
per minute	в минуту
laser-beam printer	лазерный принтер
equal	равный

УПРАЖНЕНИЯ

I. Заполните пропуски подходящими словами.

Identify, identifying, identifiable, identity

a) The computer software immediately …. the letters and numbers written by the stylus.

b) Most computer companies will not allow people without an …. card to enter their offices.

c) A password is a mechanism for …. the computer-user and allowing access.

d) The data often used for the purpose of distinguishing individual identity is called …. information.

II. Переведите словосочетания:

a) black-and-white printer, color printer, character printer, ink-jet printer, laser printer, matrix printer, page printer;

b) advanced technique, computing technique, formatting technique, modeling (simulation) technique, programming technique, testing technique, software technique, hardware technique.

III. Переведите предложения, содержащие инфинитивный оборот "сложное подлежащее"(Complex Subject).

1. Printers are known to vary greatly in design.

2. They are expected to be the most commonly used devices.

3. The ink-jet printer is sure to be one of the newest types of character printers.

4. The most popular printer type used on large systems is likely to be the line printer.

5. The predicted accuracy was found to be difficult to obtain in practice.

6. Light is known to leave a source as an indefinite number of particles travelling in straight lines.

7. The new lasers were expected to work more effectively in comparison with other lasers.

8.Pressure is sure to act equally in all directions.

9. At very low temperatures some metals seem to be insulators.

10. People appear to realize the potential dangers of some scientific discoveries.

11. Nuclear energy is considered to be a high-risk area.

IV. Переведите предложения, содержащие инфинитивные конструкции. Определите функцию инфинитива.

1. It is comfortable to use a printer in order to produce output in a human-readable format.
2. When the output is available, output interfaces must be designed to adapt the output to the external environment.
3. It is difficult to solve the problem at all.
4. It took years to produce high-speed computers.
5. In order to perform any useful work the computer should communicate with its external environment.
6. The purpose of the ALU is to hold the results of the calculation until they can be transferred to the memory.
7. Although personal computers are single-user system it is common to link them together in order to form a network.

ТЕКСТ 3

A Modem

The piece of equipment that allows a computer to communicate with other computers over telephone lines is called a modem. The modem allows the individual to access information from all over the world and use that information in everyday life. Files can be transferred by uploading to another machine or downloading to your own machine within a matter of minutes. The computer modem can be used as a telephone answering system and documents can be faxed from one computer to another assuring fast and easy access to important documents.

A modem takes computer information and changes it into a signal that can be sent over telephone lines. The modem is a bridge between digital and analog signals. The computer is the digital type and the telephone is a device using analog technology. The modem converts the "0"s and "1"s of the computer (off-on switches) into analog signals modulating the frequency of the electronic wave or signal. The modem can do the opposite work. It demodulates the signal back into digital code. The modem gets its name from MOdulate and DEModulate.

Vocabulary

to transfer	передавать, пересылать
to upload	пересылать (файл из одного компьютера в другой)
to download	загружать, скачивать

to assure	гарантировать
to change into	превращать
to convert	преобразовывать
frequence	частота
opposite	противоположный

УПРАЖНЕНИЯ

I. Переведите словосочетания:

to switch between programs, to switch between windows, to switch disks, to switch on, to switch off, to switch over, binary switch, command switch, button switch, reset switch.

II. Переведите предложения. Какие причастия использованы в данных предложениях? Какие еще неличные формы, кроме причастия, встречаются в них?

1. The high-speed devices used as secondary storage are both input and output devices.
2. Operating with graphical interface people usually use such manipulators as a mouse and a track-ball.
3. Programming is the process of preparing coded instructions.
4. The progress of electronics resulted in invention of electronic computers was important for both business and science.
5.The mouse provides the cursor control simplifying users orientation on the display.
6. The data keyed are held in a small memory called buffer.
7. Computers originally designed for arithmetic purposes are used at present for many other tasks.
8. The CPU arranged in one integrated circuit is called a microprocessor.
9. The rotating ball glides easily, giving the user good control over graphical images.
10.Keyboard is used for inputting numerical and text data.
11. A new electronic device constructed recently is used in space exploration.

III. Заполните пропуски подходящими словами.

1. A personal computer is a small relatively inexpensive device designed for an individual …. .

   a) person   b) producer   c) user

2. One of the first and most popular personal computers was …. in 1977.
   a) interpreted   b) introduced   c) integrated
3. All personal computers are based on …. technology, its CPU is called MPU.
   a) microscopy   b) microprocessor   c) microelement
   4. Soon a microcomputer was ….from a calculator into a PC for everyone.
   a) transformed   b) transferred   c) transported
   5. Input in PC is usually performed by …. .
   a) mouse   b) scanner   c) keyboard
6. A personal computer uses …. disks as input and output media.
   a) hard   b) fixed   c) floppy
7. Personal computer have a lot of …. , scientific, engineering, educational are among them.
   a) multiplication   b) application   c) investigation.
8. Personal computers have a great …. on pupils, educators, accountants, stock brokers and others.
   a) influence   b) information   c) environment
9. A word processing program called application …. enables you to modify any document.
   a) hardware   b) software   c) firmware
10. Using a display you can …. mistakes, …. words and replace sentences.
   a) delete   b) dial   c) correct

ТЕКСТ 4

Programming Languages

The computer cannot understand instructions written in just any way. The instructions must be written according to a set of rules. These rules are the foundation of a programming language. This language must convey the logical steps of the program plan in such a way that a control unit of the CPU can interpret and follow the instructions. Programming languages have improved throughout the years. There are over 200 problem-oriented languages. The most common of them are COBOL, FORTRAN, RPG, BASIC, PASCAL.

The language is used depending on the problem to be solved. COBOL was the most widely used business-oriented language. Its name stands for Common Business-Oriented Language. COBOL was designed to solve problems oriented toward data handling and input-output operations. COBOL was also designed as a self-documenting language. Self-documenting languages

are those which do not require much explanation in order to be understood by someone reading the program instructions.

Vocabulary

programming languages	языки программирования
according to	в соответствии с (чем-то)
foundation	основа, основание
to convey	передавать, сообщать
throughout	на протяжении, в течение (времени)
problem-oriented	проблемно-ориентированный
to stand for	означать
to handle	обрабатывать (данные), работать (с данными)

УПРАЖНЕНИЯ

I. Преобразуйте следующие предложения из действительного залога в страдательный.
1. Electronic devices control the work of power stations.
2. They calculate the trajectories of spaceships.
3. People widely use electronic devices.
4. American scientists invented the transistor in 1948.
5. Electronics has increased man's intellectual power.
6. Scientists are looking for new ways to improve modern technologies.
7. Jack Kilby developed the concept of integrating device.
8. He built the first IC in 1958.

II. Переведите словосочетания, содержащие инфинитив в функции определения, обращая внимание на пассивные и активные формы инфинитива:
the problem to be solved, the work to be finished, the cards to be punched, calculations to be performed, the device to be provided with the necessary facts, computers to be used for data processing, electronics to connect systems and subsystems, the speed of response to depend on the size of transistor, computers to perform thousands of calculations per second, vacuum tubes to control and amplify electric signals, these are circuits to use a large number of transistors, operations to be performed.

III. Переведите предложения, содержащие инфинитив в функции определения.

1. The problem to be solved is important for development of the industry.
2. The information to be given in the next journal will surprise you.
3. The data to be presented on the paper is quite reliable.
4. The scientific group to do the job is well prepared.
5. The results to be obtained can explain much in particle physics.
6. A printer is a device to produce output in a human-readable format.
7. The memory stores the instructions and the data to be quickly retrieved on demand by CPU.

ТЕКСТ 5

RPG II

It is a business-oriented language. The name comes from Report Program Generator. RPG was originally referred to as a "quick-and-dirty" programming language. This means that it is quick for the programmer to write and relatively inefficient in its use of main storage and processing speed. RPG II is the latest version of RPG. It was greatly improved and acquired additional capacities. Most specialists consider RPG II to have an important advantage over COBOL. It requires less training for a programmer to become proficient in it. For this reason RPG is often used on many smaller computers and in small business.

The language has evolved considerably over time. Originally RPG was developed by IBM in 1959. The purpose was to generate reports from data files and to match record and sub-total reports. RPG III and RPG IV added more enhancements and have been widely used on the AS/400. RPGLE added the "Integrated Language Environment" which enables C, Java and others modules to be integrated into the program.

Vocabulary

report program generator (RPG)	генератор отчетов, генератор программ печати отчётов (язык РПГ)
relatively	относительно
to acquire	приобретать
capacity	возможность
advantage	преимущество
training	обучение
proficient	искусный, умелый
to evolve	эволюционировать, развиваться

sub-total	промежуточный
enhancement	аппаратное или программное средство, обеспечивающее дополнительные возможности
to integrate	интегрировать, соединять, объединять
to enable	давать возможность

УПРАЖНЕНИЯ

I. Переведите предложения. Обратите внимание на принципы перевода предложений в частях a) и b).

a) 1. It is important to repair these devices as soon as possible.

2. It is necessary to obtain the results of the experiment this week.

3. It is comfortable to use a microprocessor for a single task.

4. It is desirable to avoid logic errors when making a program.

b) 1. It is important for you to be careful when you work on computer.

2. It is not difficult for the pupils to understand the function of the mouse in computer operation.

3. It was difficult for the students to translate the text.

4. The text was too difficult for the students to translate it without a dictionary.

5. It is necessary for the data to be translated into binary code before being stored in main storage.

II. Переведите предложения, содержащие сложное дополнение (Complex Object).

1. Specialists want the Internet to share information with trusted parties and in safe way.

2. People find the laser prints to be rather expensive.

3. They expect these systems to be installed in the company in the nearest time.

4. We know the information system to provide information to all levels of management at the relevant time and at economical cost.

5. We found the databases to be useful for many purposes.

6. Everybody knows the computer networks to become more and more a part of professional and personal lives.

7. If you want all READ ME files to be opened by a certain program, click once on any file that has ME as its extension(расширение).

8. Some researchers consider men especially politicians to tell more serious lies such as making a promise they do not intend to keep.

9. Computer users want their computers to be protected from viruses.

III. Переведите предложения.

1. A source program is a program written in one of high-level languages.
2. A program written in a high-level language must be interpreted into machine code before the computer will read and process it.
3. A program designed to perform a specific task is called an application program.
4. The object program, or object module, is the program produced when the original program has been converted into machine code.
5. A compiler is a program that converts a high-level language into machine code.
6. The systems program which fetches required systems routines and links them to the object module is known as the linkage editor.
7. The load module is the program directly executable by the computer.

ТЕКСТ 6

Testing the Computer Program

There are two kinds of errors or bugs with which programmers must deal. The first type is the coding error. Such errors are syntax errors that prevent the language processor from translating the source program to object program code. The language processor identifies the nature and the location of the error on the source program listing, so these errors are relatively easy to find and correct. The second type of bug is the logic error. The computer program can be successfully translated but it does not produce the desired results. These errors are generally much more difficult to find and correct. Logic errors can be avoided through careful planning of the program logic but it is the programmer's responsibility to test thoroughly all of the program's functions in order to verify that the program performs according to specifications.

Vocabulary

error (bug)	ошибка
to deal	иметь дело
source program	исходная программа
object program	объектная программа
to avoid	избегать

program logic	логическая последовательность выполнения программы
thoroughly	тщательно
to verify	проверять, контролировать
specification	(технические) характеристики, требования

УПРАЖНЕНИЯ

I. Переведите словосочетания:
access program, application program, binary program, control/management program, debugging program, free program, educational/training program, off-line program, on-line program, operating-system program, processing program, protected-mode program, running program, self-loading program, support program, utility program, virus-detection program, source program, object program.

II. Заполните пропуски подходящими словами.
1) compilation, compiler, compiles, compiled
   a) Our university computer does not have a PASCAL …. .
   b) Usually a programmer …. his program before he puts in the data.
   c) A source program cannot be directly processed by the computer until it has been …. .
   d)Translation of high-level instructions into machine code is called …. .
2) result, results, resulting
   a) The linkage editor links systems routines (стандартные программы) to the object program. The ….program is directly executable by the computer.
   b) The ….of these mathematical operations were obtained from the university mainframe.
   c) Usually a single instruction transformed into machine code ….in several instructions.

III. Переведите предложения, содержащие неличные формы глагола (Infinitive, Gerund, Participle I, Participle II). Назовите форму и объясните её функцию в предложении.
1. That was the machine provided with the necessary facts of the problem to be solved.
2. The computers designed to use integrated circuits were called third generation computers.

3. Mark I was the first machine to figure out mathematical problems.
4. Early computers using vacuum tubes could perform computation in milliseconds.
5. Vacuum tubes to control and amplify electric signals were invented by Neumann.
6. Neumann's machine called the EDVAC was designed to store both data and instructions.
7. Computers were developed to perform calculations for military and scientific purposes.
8. An American clerk invented a means of punching holes into cards.

КОНТРОЛЬНЫЕ РАБОТЫ

ВАРИАНТ 1

Input-Output Device Speed

Input-output devices can be classified as high-speed, medium-speed and low-speed. It should be noted that the high-speed devices are entirely electronic or magnetic media that can be moved at high speed. These high-speed devices are both input and output devices and are used as secondary storage. The low-speed devices are those with complex mechanical motion or operate at the speed of a human operator. The medium-speed devices are those that tend to have mechanical moving parts which are more complex than high-speed devices but not as complex as the low-speed ones.

ВАРИАНТ 2

Machine Code

Computers can deal with different kinds of problems if they are given the right instructions for what to do. Instructions are first written in one of the programming languages (COBOL, FORTRAN, BASIC, PASCAL) depending on the type of problem to be solved. A program written in one of these languages is often called a source program and it cannot be directly processed by the computer until it has been compiled (interpreted) into machine code. Usually a single instruction written in a programming language and then transformed into machine code results in several instructions.

ВАРИАНТ 3

Networks

Computer networks link computers by communication lines and software protocols, allowing data to be exchanged fast and reliable. Traditionally networks have been divided on wide area networks (WAN) and local area networks (LAN). A WAN is a network connected over long-distance telephone lines and a LAN is a localized network usually in one building or in a group of buildings close together. The difference is becoming indistinct. It is now possible

to connect LANs remotely over telephone lines and they look as they are a single LAN.

ВАРИАНТ 4

Programming Languages

Programming languages and natural languages are similar. Programming languages have rules that need to be learned, just as natural languages do. Computers can understand and communicate with humans through programming languages. But programming languages are data-free and therefore contain no information. The information is contained in the data which is processed but is independent of the language which is used to write the commands for the computer. The purpose of the programming language is to give instructions to a computer which will be executed. A correct statement in a programming language has only one interpretation and you cannot make jokes in computer language.

СОДЕРЖАНИЕ

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