**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**



 **ІНОЗЕМНА МОВА ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ**

Методичні вказівки до виконання практичних робіт

для здобувачів освітньо-кваліфікаційного рівня «молодший спеціаліст»

освітньо-професійна програма «Комп’ютерна інженерія»

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Голова навчально-методичної ради Луцького НТУ **\_\_\_\_\_\_\_\_\_\_** В.І. Талах

Електронна копія друкованого видання передана для внесення в репозитарій Луцького НТУ

Директор бібліотеки **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** С.С. Бакуменко

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Голова навчально-методичної ради ТК ЛНТУ \_\_\_\_\_\_\_\_\_\_\_ Т.П. Радіщук

Розглянуто і схвалено на засіданні циклової комісії словесних і суспільних дисциплін ТК Луцького НТУ,

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Голова ЦК \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ В.П. Cафатюк

Укладач: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ І.М. Лавринюк, викладач Технічного коледжу Луцького НТУ

Рецензент: \_\_\_\_\_\_\_\_\_\_\_ А.М. Циплюк, кандидат педагогічних наук, викладач Луцького педагогічного коледжу

Відповідальний за випуск: \_\_\_\_\_\_\_\_\_\_\_\_\_\_В.П. Сафатюк, голова ЦК словесних і суспільних дисциплін Технічного коледжу Луцького НТУ

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| I-57  | **Іноземна мова за професійним спрямуванням[текст]:** методичні вказівки до виконання практичних робіт для здобувачів освітньо-кваліфікаційного рівня «молодший спеціаліст освітньо-професійної програми «Комп’ютерна інженерія»галузі знань 12 Інформаційні технології,спеціальності 123Комп’ютерна інженерія денної форми навчання /уклад. І. М. Лавринюк –Луцьк:Технічний коледж Луцького НТУ,2020.– 52с. |

Методичне видання складене відповідно до робочої програми курсу «Іноземна мова за професійним спрямуванням» для здобувачів освітньо-кваліфікаційного рівня «молодший спеціаліст» з метою визначення завдань практичної роботи студентів та надання методичної допомоги у процесі їх виконання.

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**ЗМІСТ**

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**ВСТУП**

Пропоноване виданняпризначенедляздобувачів освітикомп’ютерних спеціальностей, яківолодіютьосновамиграматикианглійськоїмови, лексичниммінімумомвобсязіпрограмизагальноосвітньоїшколитанавичкамиусногомовлення. Посібникпокликанийпоповнитизнанняпрофесійною лексикою, збагатитисловниковий запас та підготувати до подальшоговивченняадаптованої та оригінальноїлітератури за фахом.

Вказівки складені на основікомунікативного принципу вивченняіноземноїмови і мають на меті:

* об’єднати лексику таграматику за тематичним принципом;
* розвиватинавичкичитання та перекладу фаховоїлітератури;
* контролюватизасвоєннямовногота мовленнєвого матеріалу та запобігатитиповимграматичнимпомилкам.

Посібникскладається з модулів, кожний з якихмістить декілька тем, які включають в себе базовий текст (призначений для закріпленняактивної лексики певної теми) з активнимтематичним словникомта післятекстові завдання для самостійного опрацювання, якінаочноілюструютьфункціонування у мовілексичниходиниць, щовивчаються тавправи для засвоєння лексики та граматики активного словника.

Мета видання – збагатитисловниковий запас здобувачів освітикомп’ютернихспеціальностейпрофесійноюлексикою. Посібниксконцентрованийнавколо таких основнихпунктів: читання, граматика, щодозволяєсформуватисистемнізнання і підготуватиздобувачів освіти до подальшогоопрацюваннятехнічноїпрофесійноїлітератури.

Вказівкипризначені для здобувачів освіти спеціальності “Комп’ютерна інженерія”.

**Module I**

**Unit 1**

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Society, arithmetics, quickly, efficiently, requirements, either, existing, compile, retrieving, through, vehi­cles, throughout, irreverently, societies.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Potential, privileged, bank credit card, clerk, detailed, packages, specification, to adapt, logical, modifying.

***II. Reading***

***Read the text and make notes about main responsibilities of jobs in computing***

**Computer Literacy**

Informed citizens of our information-dependent society should be computer-literate, which means that they should be able to use computers as everyday problem-solving devices. They should be aware of the potential of computers to influence the quality of life.

There was a time when only privileged people had an oppor­tunity to learn the basics, called the three R's: reading, writing, and arithmetics. Now, as we are becoming an informa­tion-becoming society, it is time to restate this right as the right to learn reading, writing and computing. There is little doubt that computers and their many applications are among the most sig­nificant technical achievements of the century. They bring with them both economic and social changes. "Computing" is a con­cept that embraces not only the old third R, arithmetics, but also a new idea — computer literacy.

In an information society a person who is computer-literate need not be an expert on the design of computers. He needn't even know much about how to prepare programs which are the instructions that direct the operations of computers. All of us are already on the way to becoming computer-literate. Just think of your everyday life. If you buy something with a bank credit card or pay a bill by check, computers help you to process the information. When you check out at the counter of your store, a computer assists the checkout clerk and the store manager. Many actions that you have taken or observed have much in common. Each relates to some aspect of a data processing system.Here is the description of jobs in computing.

**System analyst** studies methods of working within an organization to decide how tasks can be done efficiently by computers. He makes a detailed analysis of the employer's requirements and work patterns to prepare a report on different options for using information technology. This may in­volve consideration of the hardware as well as software. He either uses standard computer packages or writes a specification for program­mers to adapt existing software or to prepare new software. He may over­see the implementation and testing of the system and acts as a link between the user and the programmer.

**Software Engineer/Designer** produces the programs which control the internal operations of computers. He converts the system analyst's specification to a logical series of steps. Software Engineer translates these into the appropriate computer lan­guage. He often compiles programs from libraries or sub-programs, com­bining them to make up a complete systems program. He designs, tests, and improves programs for computer-aided design and manufacture, business applications, computer networks and games.

**Computer Systems Support Person.**Systems support people are analyst programmers who are respon­sible for maintaining, updating and modifying the software used by a company. Some of them specialize in software which handles the basic opera­tion of the computers. This involves the use of machine codes and specialized low-level computer languages. Most of them handle application software. They may sort out problems encountered by users. Solving prob­lems systems support people may involve amending an area of code in the software, retrieving files and data lost when asystem crashes and a basic knowledge of hardware.

C**omputer System Analyst Programmer** creates the software programs used by computers. He may specialize in the internal operating systems using low level computer language or in application programs. He also may specialize in one aspect of the work, e.g. programming, systems design, systems analysis or cover them all. He may support the system through advice and training, pro­viding user manuals and by helping users with any problems that arise.

**Hardware Engineer** researches designs and develops computers, or parts of comput­ers and the computerized element of appliances, machines and vehi­cles. He also involves in their manufacture, installation and testing.

**Professions and organizations.**As the use of computers has spread throughout society, there are an increasing number of careers involving computers. Following the theme of hardware, software and firmware, the brains of people who work in the industry are sometimes known irreverently as wetware or ”meatware”.

**Computer-related professions.**Hardware-related: Electrical engineer-ing, Electronics engineering, Computer engineering, Telecommunications en­gineering, Optical engineering, Nanoscale engi­neering.

Software-related: Human-computer interaction, Information tech­nology, Software engineering, Scientific compu­ting, Web design, Desktop publishing.

The need for computers to work well together and to be able to exchange information has spawned the need for many standards or­ganizations, clubs and societies of both a formal and informal nature.

Vocabulary Notes

**Computer literacy** — комп’ютерна грамотність

**be aware of** — розуміти, усвідомлювати

**basics** — основи

**torestate**['rJ'steit] — переглянути, переосмислити

**significant** [sIg'nIfIkqnt]— значний

**computing** — обрахування; рахунок; робота на комп’ютері

**toembrace** [Im'breIs] — охоплювати

**dimension**[dI'menSqn] — вимір

**todirecttheoperation** — направляти роботу

**subscription**[sqb'skrIpSqn] **magazine** — журнал по підписці

**storemanager** — директор магазину

**systemanalyst**—системний аналітик

**consideration** [kqn"sIdq'reIS(q)n]— аналіз, розгляд

**computerpackage**—комплект обчислювального обладнання

**softwaredesigner**[dI'zaInq]—розробник програмного забезпечення

**tocompile**[kqm'paIl] —компілювати

**computer-aideddesign**— автоматизоване проектування

**businessapplication**— прикладна система для підприємств, торгівельної сфери; застосування комп’ютерів для вирішення економічних та комерційних завдань

**computersystemsupportperson**— спеціаліст з підтримки комп’ютерної системи

**toencounter**[In'kaVntq] — зіткнутися з труднощами

**computersystemanalystprogrammer**— системний програміст

**hardwareengineer**— спеціаліст з розробки апаратного забезпечення

**irreverently**[I'rev(q)rqntlI] — неввічливо

**wetware/ ”meatware”** — забезпечення користувача

**engineering**["endZI'nIqrIN] — проектування, конструювання

**tospawn** [spLn] — породжувати

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) Informed citizens of our information-dependent society should be computer-literate, which means that they should be able to use computers as everyday problem-solving devices. 2) There was a time when only poor people had an oppor­tunity to learn the basics, called the three R's: reading, writing, and arithmetics. 3) "Computing" is a con­cept that embraces not only the old third R, arithmetics, but also a new idea — computer literacy. 4) All of us are not already on the way to becoming computer-literate. 5) Software Engineer produces the programs which control the external operations of computers.

***2. Choose the right answer:***

1) Informed citizens of our information-dependent society should be … .

*a) computer-literate;*

*b) illiterate;*

*c) polite.*

2) If you buy something with a bank credit card or pay a bill by check, … help you to process the information.

*a) a store manager;*

*b) computers;*

*c) policeman.*

3) Many actions relate to some aspect of … system.

*a) computer;*

*b) application;*

*c) a data processing.*

4) System analyst studies methods of working within an organization to decide how tasks can be done efficiently by … .

*a) a store manager;*

*b) computers;*

*c) policeman.*

5) Software Engineer/Designer produces the programs which control the … operations of computers.

*a) internal;*

*b) external;*

*c) local.*

6) Some of computer system support people specialize in … which handles the basic opera­tion of the computers.

*a) hardware;*

*b) software;*

*c) firmware.*

7) Computer System Analyst Programmermay specialize in the internal operating systems using … or in application programs.

*a) high-level computer language;*

*b) low-level computer language;*

*c)different kinds of computer languages.*

8) Hardware Engineer researches designs and … computers.

*a) trades with;*

*b) assesses;*

*c) develops.*

***3. Complete the sentences:***

1) Informed citizens of our information-dependent society should be computer-literate, which means that they should be able to use computers as … . 2) There was a time when only privileged people had an oppor­tunity to learn the basics, called the three R's: … . 3) "Computing" is a con­cept that embraces not only … . 4) All of us are already on the way to becoming … . 5) System analyst makes a detailed analysis of … . 6) Software engineer designs, tests, and … .

***4. Answer following questions.***

1) What does "a computer-literate person" mean? 2. Why should we be aware of the potential of computers? 3) What do the people mean by "the basics"? 4) What is the role of computers in our society? 5) What changes do computers bring? 6) What is ’’computing’’? 7) What does system analyst use?

**Unit 2**

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Durations, occupied, generally, onslaught, distinguishing, origi­nally.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Interactive, hobbyists, technicians, productivity, company, microprocessor.

***II. Reading***

 ***Read, translate the text and point out the main characteristics of PC.***

**Personal Computers**

Personal computers are supposed to appear in the late 1970s. The capabilities of a personal computerhave changed greatly since the introduction of electronic computers. By the early 1970s, people in academic or research institutions had the opportunity for single person use of a computer system in interactive mode for extended du­rations, although these systems would still have been too expensive to be owned by a single individual. The introduction of the microproces­sor, a single chip with all the circuitry that formerly occupied large cabinets, lead to the proliferation of personal computers after 1975.

Early personal computersgenerally called microcomputers, sold often in kit form and in limited volumes and were of interest mostly to hobbyists and technicians. By the late 1970s, mass-market pre-assembled computers allowed a wider range of people to use com­puters, focusing more on software applications and less on develop­ment of the processor hardware. Throughout the 1970s and 1980s, home computers were developed for household use, offering some personal productivity, programming and games, while somewhat larger and more expensive systems (although still low-cost compared with minicom­puters and mainframes) were aimed for office and small business use.

One of the first and most popular personal computers was the Apple II, introduced in 1977 by Apple Computer. During the late 1970s and early 1980s, new models and competitive oper­ating systems seemed to appear daily. Then, in 1981, IBM en­tered the fray with its first personal computer, known as the IBM PC. The IBM PC quickly became the personal computer of choice, and most other personal computer manufacturers fell by the way-side. One of the few companies to survive IBM's onslaught was Apple Computer, which is sure to remain a major player in the personal computer marketplace. In less than a decade the microcomputer has been transformed from a calcula­tor and hobbyist's toy into a personal computer for almost everyone.

What is a personal computer? How can this device be char­acterized?

— First, a personal computer being microprocessor-based, its central processing unit, called a microprocessor unit, or MPU, is concentrated on a single silicon chip.

— Second, a PC has a memory and word size that are small­er than those of minicomputers and large computers. Typical word sizes are 8 or 16 bits, and main memories range in size from 16 К to 512 K.

— Third, a personal computer uses smaller, less expensive, less powerful input, output and storage components than do large computer systems. Most often, input is by means of a keyboard, soft-copy output being displayed on a screen. Hard-copy output is produced on a printer.

A PC employs disks and USB flash drive as the principal online and offline storage devices and also as input and output media.

— Finally, a PC is a general-purpose, stand-alone system that can begin to work when plugged in and be moved from place to place.

Probably the most distinguishing feature of a personal com­puter is that it is used by an individual, usually in an interactive mode. Eventually the market segments lost any technical distinction; busi­ness computers acquired color graphics capacity and sound, and home computers and game systems used the same processors and operating systems as office-bound computers. Even local area networking, origi­nally a way to allow business computers to share expensive mass storage and peripherals, became a standard feature of a home computer.

Regardless of the purpose for which it is used, either for leisure activities in the home or for business applications in the office, we can consider

it to be a personal computer.

Vocabulary Notes

**circuitry**['sWkItrI] **—**схеми

**competitive operating systems** — конкуруючі операційні системи

**IBM (InternationalBusinessMachine)** — фірма, яка виробляє комп’ютери

**to enter the fray** — встрянути у бійку

**computer of choice** — кращий комп’ютер

**to fall by the wayside** — залишитись збоку, уступити дорогу

**tosurviveonslaught**[sq'vaIv 'OnslLt] — витримати конкуренцію

**wordsize** — розмір слова

**soft-copyoutput** — недокументальні вихідні дані (зображені на екрані)

**hard-copyoutput** —друковані копії вихідних даних

**onlinestorage**['stLrIdZ] — неавтономне зберігання даних

**offlinestorage** — автономне зберігання даних окремо від комп’ютера

**inputmedia** — носій для вхідних даних

**outputmedia** — носій для вихідних даних

**toemploy**[Im'plOI]**—**використовувати

**general-purpose** — універсальний, загального призначення

**stand-alone** — автономний

**toplugin** [plAgIn] — підключати; під’єднувати

**office-bound**['OfIsbaund]**computer—** комп’ютер призначений лише для офісної роботи

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) The capabilities of a personal computerhave changed greatly since the introduction of electronic computers. 2) Then, in 1981, IBM en­tered the fray with its first personal computer, known as the IBM PC. 3) Third, a personal computer uses smaller, less expensive, less powerful input, output and storage components than do large computer systems. 4) Eventually the market segments lost any technical distinction.

2***. Choose the right answer:***

1) Personal computers are supposed to appear in … .

*a) the early 1970s;*

*b) the late 1970s;*

*c) 1990.*

2) The introduction of the … lead to the proliferation of personal computers after 1975.

*a) laptop;*

*b) computers;*

*c) microproces­sor.*

3) Early personal computersis generally called … .

*a) computer;*

*b) microcomputers;*

*c) mainframe*.

4) By the late 1970s, … pre-assembled computers allowed a wider range of people to use com­puters.

*a) mass-market;*

*b) special;*

*c) general.*

5) One of the first and most popular personal computers was … .

*a) the Apple;*

*b) the Apple I;*

*c) the Apple II.*

6) IBM en­tered the fray with its first personal computer, known as … .

*a) the IBM PC;*

*b) software;*

*c) firmware.*

7) A microprocessor unit, or MPU, is concentrated on … .

*a) disk;*

*b) a single silicon chip;*

*c) CD.*

***3. Complete the sentences:***

1) The capabilities of a personal computerhave changed greatly since … . 2) By the early 1970s, people in academic or research institutions had the opportunity for single person use of a computer system in … . 3) Early personal computersgenerally called microcomputers, sold often in … . 4) By the late 1970s, mass-market pre-assembled computers allowed a wider range of people to use com­puters, focusing more on … . 5) During the late 1970s and early 1980s, new … and competitive … seemed to appear daily.

**Unit 3**

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

View, primary, keyboard, delicate, punctuation, surface, smooth, rough, twice, quick, succession.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Monitor, metal, electronics, stereo, pixels, position, microphone, modem, port.

***II. Reading***

***Read, translate the text and mind the PC configuration.***

**PC Configuration**

Meet the PC Configuration.

*1. The main part of the system.* An exploded view of modern personal computer: 1. Monitor; 2. Motherboard; 3. CPU (Microprocessor); 4. Primary storage (RAM); 5.Expansion cards; 6.Power supply; 7.Optical disc drive; 8.Secondary storage (Hard disk); 9.Keyboard; 10. Mouse

*2. The case.* The large metal box that is the main part of the computer is called the case. The case and its contents (power supply, system board, etc.) are called the system unit. The case has several functions:

- it protects the delicate electronics inside;

- it keeps electromagnetic emissions inside, so your TV, cordless phone and stereo don't go haywire when you power up the computer;

- it can also hold the monitor.

Don't remove the case's cover unless you need to do something inside the unit and always replace the cover when you are done.

*3. The keyboard.* You communicate with your computer with the keyboard. Using it you type instructions and commands for the computer and information to be processed and stored. Many of the keys on the keyboard are like those on a typewriter, letter keys, punctuation keys, shift keys, tab and spacebar. Your keyboard also has many specialized keys. The instruction manuals for most software applications contain a section describing the functions of each key or combination of keys.

*4. The mouse.* The mouse works by sliding it around (ball down) on a flat surface. The mouse does not work if you hold it in the air like a remote con­trol. The desktop is fine, but a ready-made mouse pad is the best sur­face to roll the mouse on. You will see the arrow on your screen moving in unison. The arrow is called a pointer and the most important part is the very top of its point. That is the only part the computer pays attention to. To use the mouse, slide it on the mouse pad until the pointer's point is on something, like a button or an icon.

Click - position the mouse pointer over an element and press and re­lease the left mouse button once.

Double-click - same as above except press the mouse button twice in quick succession without moving the mouse.

*5. The monitor.* Your computer is not complete without a monitor, a TV-like de­vice. Most computers still use CRT (cathode-ray tube) monitors but in recent years flat screen based on LCD (liquid-crystal display) technology have become increasingly popular. The monitor displays text characters and graphics. It allows you to see the results of the work going on inside your system unit. The image you see is made up of tiny dots called pixels. The sharpness of the picture depends on the number and size of these pixels. The more pixels the sharper the image. This is called resolution.

A display adapter card is actually what builds the video images, the monitor simply displays them. The display adapter for your system is either built onto the system board or is an expansion card plugged into your system board.

6. *The floppy drive*. Floppy drives provide a way to pass data from and to the hard drive or another computer. The drives can read and write on floppy dis­kettes (3.5 inch, usually drive A). If you put a new diskette into the drive you have to format it first.

*7. The hard drive.* Unlike the floppy drive the hard disk drive is inside the compu­ter's case and you cannot see it. Usually it is referred to as drive C, D or F.

*8. The optical drive.* The optical drive is similar to the one you might have in your car or at home. It can play DVDs, music CDs as well as read software program CDs and the new Kodak photo CDs.

To operate the drive, press the eject button to open the tray. Put a CD in the tray (label side UP) and gently start to push the tray in.

*9. Removable media devices*

**CD** - the most common type of removable media, inexpensive but has a short life-span.

**CD-ROM Drive** - a device used for reading data from a CD.

**CD Writer** - a device used for both reading and writing data to and from a CD.

**DVD** - a popular type of removable media that is the same di­mensions as a CD but stores up to 6 times as much information. It is the most common way of transferring digital video.

**DVD- ROM Drive** - a device used for reading data from a DVD.

**DVD Writer** - a device used for both reading and writing data to and from a DVD.

**DVD- RAM Drive** - a device used for rapid writing and reading of data from a special type of DVD.

***Blu-ray*** - a high-density optical disc format for the storage of digital information, including high-definition video.Currently a rival of HD-DVD.

**BD-ROM Drive** - a device used for reading data from a Blu-ray disc.

**BD Writer** - a device used for both reading and writing data to and from a Blu-ray disc.

**HD DVD -** a high-density optical disc format and successor to the standard DVD. Currently a rival of

**USB flash drive** - a flash memory data storage device integrated with a USB interface, typically small, lightweight, removable and re­writable.

**Tape drive** - a device that reads and writes data on a magnetic tape, usually used for long term storage.

*10. Sound card*

Enables the computer to output sound to audio devices, as well as accept input from a microphone. Most modem computers have sound cards built - in to the motherboard, though it

is common for a user to install a separate sound card as an upgrade.

Vocabulary Notes

**motherboard**['mADq"bLd] **—**системна плата

**primary**[praImqrI] **/secondarystorage**['stLrIG] **—** первинна/вторинна пам’ять

**expansioncard**[Iks'pxnS(q)n] **—** плата розширення

**powersupply —** джерело живлення

**case —** корпус

**systemunit—** системний блок

**to go haywire**['heI"waIq] **= out of order —**несправний

**shiftkey—** клавіша переключення регістру

**tab—** клавіша табуляції

**spacebar —** клавіша пробілу

**mousepad —** килим для миші

**sharpness** [SRpnIs] **—** чіткість зображення

**adisplayadapter**[dIs'pleIq'dxptq] **—** адаптер дисплею

**life-span —** термін дії

**high-density**[haI 'densItI] **—** з високою щільністю розміщення

**nullmodem** [nAl 'mqVdqm] **—**безмодемний

**networkcard—** мережевий

адаптер

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) The large metal box that is the main part of the computer is called the case. 2) You communicate with your computer with the keyboard. 3) The mouse works by sliding it around (ball down) on a rough surface. 4) The monitor displays only text characters. 5) Floppy drives provide a way to pass data from and to the hard drive or another computer.6) The hard disk drive is inside the compu­ter's case and you cannot see it. 7) CD-ROM Drive - a device used for reading and writing data from a CD. 8) Tape drive is a device that reads and writes data on a magnetic tape, usually used for short term storage. 9) Most modem computers have sound cards built - in to the motherboard. 10) Network card is used for DS L/Cable internet, and/or connecting to other computers.

***2.Choose the right answer:***

1)The case and its contents (power supply, system board, etc.) are called … .

*a) the mouse;*

*b) the keyboard;*

*c) the system unit.*

2) Using … you type instructions and commands for the computer and information to be processed and stored.

*a) the mouse;*

*b) the keyboard;*

*c) the system unit.*

3) To use … , slide it on the mouse pad until the pointer's point is on something, like a button or an icon.

*a) the mouse;*

*b) the keyboard;*

*c) the system unit.*

4 … allows you to see the results of the work going on inside your system unit.

*a) the mouse;*

*b) the keyboard;*

*c) the monitor*.

5) Usually … is referred to as drive C, D or F.

*a) the hard drive;*

*b) the floppy drive;*

*c) the system unit.*

6) … can play DVDs, music CDs as well as read software program CDs and the new Kodak photo CDs.

*a) the hard drive;*

*b) the floppy drive;*

*c) the optical drive.*

7) … is an outdated storage device consisting of a thin disk of a flexible magnetic storage medium.

*a) Floppy disk;*

*b) Zip drive;*

*c) USB flash drive.*

8) … is an outdated medium-capacity removable disk storage system, first introduced by Iomega in 1994.

Most often, input is by means of … .

*a) Floppy disk;*

*b) Zip drive;*

*c) USB flash drive.*

***3. Complete the sentences:***

1) An exploded view of modern personal computer: … . 2) Many of the keys on the keyboard are like those on … . 3) Click - position the mouse… . 4) A display adapter card is … . 5) To operate the optical drive … . 6) DVD- ROM Drive is … . 7) Blu-ray is … . 8) HD DVD is … . 9) Modem is … .

***4. Answer following questions.***

1) What functions has the case? 2) What contains a section describing the functions of each key or combination of keys? 3) What is the best sur­face to roll the mouse on? 4) What types of screen have become increasingly popular? 5) What is called resolution? 6) What have you do first when you put a new diskette into the drive? 7) What removable media devices do you know? 8) What is the application of networking?

**Unit 4**

Text Study

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

 An abacus, to arrange, a wheel, an engine, the forerunner, binary, bulky, unreliable, thousands, frequently, a core, to squeeze, due to, to etch, launched, fibre.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Calculations, mechanical, programmer, au­tomatically, generation, silicon, integrated, plastic, metal, standard, graphical, optics, experts, molecules.

*II. Reading*

*Read the text and be ready to find in the text the answers to the following questions:*

* *What generations of a computer are given in the text?*
* *What are the characteristic features of the fifth generation?*

**Computer Evolution**

*2000 BC (before Christ)* – The abacus emerged in Asia. It allowed people to make calculations using moving beads arranged on a rack. 1642 – Blaise Pascal invented the first mechanical adding machine, a numerical wheel called Pascaline.

1833 – Charles Babbage started to build his Analytical Engine, the forerunner of the modern computer. He was helped by Augusta Ada Byron, who is considered the first female computer programmer. *1890* – Herman Hollerith used punch cards in a device which au­tomatically read the US census.

1941 – Konrad Zuse built the first programmable computer, called Z3, working on the binary system.

*First generation computers* (1945-1954) – The University of Penn­sylvania designed ENIAC (UNIVersal Automatic Computer), an electronic computer which used vacu­um tubes and was able to calculate at electronic speeds. Those devices were not only bulky, they were also unreliable. The thousands of vacuum tubes emitted large amounts of heat and burned out frequently.

*Second generation computers* (1955-1964) – Computers used tran­sistors instead of vacuum tubes. So-called second generation computers, which used large numbers of transistors were able to reduce computational time from milliseconds to microseconds, or millionths of seconds. Second-generation computers were smaller, faster and more reliable than first-generation computers. Memories were made of magnetiza­ble cores (the IBM 1401).

*Third generation computers* (1965-1973) – The first computers using silicon chips went on sale. Intel released the first microprocessor. They could perform many data processing operations in nanoseconds, which are billionths of seconds.

*Fourth generation computers* (1974 *-2001)* – Computers became smaller as more components were squeezed onto microchips. The integrated circuits that are being developed have been greatly reduced in size. This is due to microminiaturization, which means that the circuits are much smaller than before; as many as 100 tiny circuits are placed now on a single chip. A chip is a square or rectangular piece of silicon, usually from 1/10 to 1/4 inch, upon which several layers of an integrated circuit are etched or imprinted, after which the circuit is encapsulated in plastic or metal.

1975 – Bill Gates and Paul Allen founded Microsoft and wrote a BASIC compiler for the Altair.

1976 – Steve Jobs and Steve Wozniak founded Apple Computer, Inc. The first minicomputer was sold.

1981 – IBM sold the IBM PC, a model that became the standard in personal computers. MS-DOS was the operating system for IBM PCs and compatibles.

1984 – Apple produced the Macintosh, the first computer with a mouse and a graphical user interface (GUI).

1995 – Microsoft launched Windows 95 and Sun Microsystems created Java language.

*2001* – Intel launched the Pentium 4 running at 2G Hz.

*Fifth generation computers* –Fibre optics and optical disks revolu­tionize the world of computers. Artificial Intelligence and voice re­cognition are incorporated into computer applications; experts start making tiny, superfast computers known as nanocomputers. Some are electronics, others are biochemical, working with bio - chips made of millions of molecules.

Vocabulary Notes

an abacus['xbqkqs] –рахівниця

toemerge[I'mWdZ]–виникати, з’являтися

abead[bJd] –буси, кружечки

а rack– рама, вішак

**census** ['sensqs] **–** перепис, збір даних

**vacu­umtubes**['vxkjuqm 'tjub] **–** вакуумні трубки

**bulky** ['bAlkI] **–** великий, об’ємний, гнучкий

**unreliable** ['nrI'laiqbl] **–** ненадійний

**a core**[kL]**–** ядро

**torelease**[rI'lJz]**–** звільняти, полегшувати

**tosqueeze** [skwJz] **–** стискати, здавлювати**rectangular**[rek'txNgjulq] –прямокутний

**а piece**– частинка

**toencapsulate**– герметизувати

**toreduce** – зменшувати

**tiny–** крихітний

**toetch** [etS] – гравірувати, витравлювати (на склі, металі)

**toimprint** – відштамповувати, залишати слід

**tolaunch** [lLntS] – випускати, запускати

**fibre**['faIbq] – волокно, фібра

**incorporate** – з’єднуватись, змішуватись, включати в себе

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) The abacus emerged in Africa and it allowed people to make calculations using moving beads arranged on a rack. 2) Konrad Zuse built the first programmable computer, called Z3, working on the binary system. 3) Second generation computers used tran­sistors instead of vacuum tubes. 4) Second-generation computers were bigger, slower and less reliable than first-generation computers. 5) A chip is a square or rectangular piece of silicon, usually from 1/10 to 1/4 inch.

***2. Choose the right answer:***

1) Ada Byron is considered the first … .

*a) male computer programmer;*

*b) female computer programmer;*

*c) computer user.*

2) Konrad Zuse built the first … .

*a) programmable computer;*

*b)big computer;*

*c) desk computer.*

3) The thousands of … of the first computers emitted large amounts of heat and burned out frequently.

*a) operations;*

*b) functions;*

*c) vacuum tubes.*

4) Third generation computers used … .

*a) silicon chips;*

*b) petrol;*

*c) light.*

5) Bill Gates and Paul Allen founded Microsoft and wrote a BASIC compiler for the Altair in … .

*a) 1965;*

*b) 1975;*

*c) 1955.*

6) … revolutionize the world of computers.

*a) disks;*

*b) fibre elements;*

*c) fibre optics and optical disks*.

***3. Complete the sentences.***

1) In 1941 Konrad Zuse built the first programmable computer, called Z3, working on … . 2) The University of Penn­sylvania designed ENIAC, an electronic computer which used vacu­um tubes and was able to calculate at electronic speeds in … . 3) Second generation computers were able to reduce … from milliseconds to microseconds. 4) The integrated circuits of the fou

rth generation computers have been greatly … in size. 5) Fifth generation computers are characterized by … .

***4. Answer the questions:***

1) When did the abacus emerge? 2) Who designed ENIAC (UNIVersal Automatic Computer), an electronic computer which used vacu­um tubes and was able to calculate at electronic speeds? 3) What did the second generation computers use? 4) What could the third generation computers perfom?

**Unit 5**

Text Study

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Classify, distinction, digital, analog,discrete, occur, measure, circular, variable, smooth, purpose, offer, sufficiently, equipment.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Method, documents, contract, microcomputer, individual, a workstation, model, class of computer, silicon chip, location.

***II. Reading***

*Read the text and be ready to find in the text the answers to the following questions:*

* *What methods of classifying computers are there?*
* *What is the most powerful type of the computer?*

**Types of Computers**

There are several methods of classifying computers. The main distinction is between **digital and analog devices**.

**Digital** computers are so called because they process data that is represented in the form of discrete values (e.g. 0,1,2,3....) by operating on it in steps. Discrete values occur at each step in the operation. Counting on one’s fingers is probably the simplest digital operation we all know.

**Analog** computers are kinds of measuring instruments such as thermometers and voltmeters with pointers on circular dials. They process data in the form of electrical voltages, which are variable like the variable positions of a pointer on a dial. The output from analog computers is often in the form of smooth graphs from which information can be read.

**Hybrid** computers, as their name suggests, are computers that have the combined feature of digital and analog computers.

Digital computers are by far the most widely used.

It is also possible to classify computers **by their use**.

**A Word Processor** is a special purpose computer used in the production of office documents, letters, contracts, etc. Note: a general purpose computer can run a word processor program and hence temporarily become special purpose.

**A Home Computer** is a low-cost microcomputer of limited capability designed for domestic use with programs that typically are used for such things as computer games or controlling family finance.

 **A Personal Computer** is a microcomputer designed for independent use by an individual at work or in the home mainly for business purpose. Some PCs are portable. Many can be connected to minicomputers and mainframe computers so that the PC users can also gain access to the facilities offered by the larger machine.

**A Desktop Computer** is any computer design for use on a desk in an office. Therefore home computers and PCs are types of Desktop computer.

**A workstation** is another kind of desktop computer. Although larger more powerful PCs are sometimes called workstations the term is normally used to imply the presence of advanced features not provided by all PCs.

**A Lap-Top Computer** is a PC sufficiently small and light for its user comfortably to use it on his or her lap.

**An Embedded Computer** is one that is within some other device or system but is not accessed directly. For example, there are embedded computers operating within petrol pumps, watches, cameras, video recorders and many types of domestic and industrial equipment.

It is also possible to classify computers **by their size.**

There are mainframes, minicomputers and microcomputers. However, there are no sharp dividing lines between them. For example, a model at the top of a manufacturer’s range of minicomputers might well be more powerful than the model at the bottom of a range of mainframes.

Thus, computers are classified according to their size, power, and type of processing unit.

The most powerful type of computer is the *mainframe computer.* Only large companies are likely to use a mainframe computer, as these machines are very expensive to buy and run.

A *minicomputer* is the next size down, a sort of ‘small mainframe’. It is a slower, less powerful version of the same class of computer, and is designed for businesses who do not need (or cannot afford) the capacity and speed of the smallest mainframe.

The smallest type of computer is the *microcomputer*. The name derives not from the small size of the machine – although the largest microcomputers can fit comfortably on a desk - but from the fact that the main processing circuits are on a single silicon chip, known as a *microprocessor.*

Vocabulary Notes

**digital –** цифровий

**value**['vxljH]–мат**.** величина

**to occur** [q'kW] –траплятися, мати місце

**circular**['sWkjulq] **–** круговий, круглий

**а dial –** циферблат

**variable**['vFqriqbl] –перемінний

**voltage –**напруга

**smooth –**гладкий, рівний, плавний

**feature –** особливість, (характерна) риса

**apurpose –** ціль

**temporarily –** тимчасово

**limit –** обмежений

**domestic –** домашній

**mainly –** в основному

**although**[Ll'Dqu] **–** хоч

**access**['xkses] –доступ, мати доступ до

**embeddedcomputers** – вмонтований, вкладений

**toimply** [Im'plai] – значити, означати, бути наслідком чогось

**mainframe** – універсальна обчислювальна машина

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) There are two methods of classifying computers. 2) Digital computers are so called because they process data that is represented in the form of discrete values. 3) Analog computers process data in the form of electrical voltages. 4) A home computer is a high-cost microcomputer of unlimited capability. 5) A personal computer is a microcomputer designed for independent use by an individual at work. 6) Computers are classified according to their size and type of processing unit. 7) The most powerful type of computer is the minicomputer.

***2. Choose the right answer:***

1) The output from analog computersis often in the form … .

*a) figures;*

*b) digits;*

*c) of smooth graphs.*

2) A word processor is a special purpose computer used in … .

*a) theproduction;*

*b)the production of office documents;*

*c) the maths.*

3) There are … according to their size.

*a) mainframes, minicomputers and microcomputers;*

*b) large and huge computers;*

*c) small computers.*

4) Only large companies are likely to use a ….

*a) microcomputer;*

*b) mainframe computer;*

*c)embeddedcomputer*

***3. Complete the sentences.***

1) Hybrid computers are computers that … . 2) A word processoris a special purpose computer used in … . 3)A personal computer is a microcomputer designed for … . 4) An embedded computer is one that … . 5) There are … by the size. 6) The microcomputer is the … . 7) The mainframe computer is the … .

***4. Answer the questions:***

1) What is the main distinction between classifications of computers? 2) What is the purpose of digital computers? 3) What are analog computers? 4) What are hybrid computers? 5) Where is a word processor used? 5) Why is a home computer low cost one? 7) What is a personal computer designed for? 8) What kinds of desktop computers do you know?

**Module II**

**Unit 6**

Text Study

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

To engage, commonplace, a research, an insti­tute, widespread, quality, accounting, to withdrawal, current, guidance, environment, recognition, view, schedule, availability, sophisticated, a vehicle, to verify, an employee, society.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Communicating, service, manufacture, financial, terminal, million, operation, terminal, navigation, medicine, image, technician, tomography, scanner, transition, status.

*3. Pay attention to some grammatical points:*

1) At present a great deal of the work force of most coun­tries **is engaged** in **creating, processing, storing, communicating** and just **working** with information. 2) Computer-controlled robots **are able to** improve the quality of manufactured products and to increase the productivity of industry. 3) Computers **can control** the work of power stations, plants and docks. 4) Without the terminals, records of deposits and withdrawals **would be** difficult to maintain, and it **would be** impossible to make inquiries about the current sta­tus of customer accounts. 5) Computers form a part of many military systems **including** communication and fire control. 6) They **are applied** for automatic piloting and automatic navigation. 7) The computer **has changed** the production of copy in the newspaper industry.

***II. Reading***

*Read the text and be ready to be ready to fill in the table:*

|  |  |
| --- | --- |
| Branch | application |
| *medicine* | *valuable medical diagnostic tools* |
|  |  |

**Application of Computers**

At present a great deal of the work force of most coun­tries is engaged in creating, processing, storing, communicating and just working with information. Computers have become commonplace in homes, offices, stores, schools, research insti­tutes, plants. The use of computers in business, industry and communi­cation services is widespread today.

Computer-controlled robots are able to improve the quality of manufactured products and to increase the productivity of industry. Computers can control the work of power stations, plants and docks.

They help in making different decisions and in management of economy. In business, computers are used for financial planning, accounting and specific calculations. The work of banks depends upon computer terminals for millions of daily operations. Without these terminals, records of deposits and withdrawals would be difficult to maintain, and it would be impossible to make inquiries about the current sta­tus of customer accounts.

Computers form a part of many military systems including communication and fire control. They are applied for automatic piloting and automatic navigation. Space exploration depends on computers for guidance, on-board environment and re­search.

For feather prediction macro computers are used to fully describe countless factors such as wind currents, solar effects and even planetary configuration must be calculated, correlated and simulated.

The computer has changed the production of copy in the newspaper industry. There are three steps involved in the process: input, correction, and output.

Almost every medium-sized or large company will use computers to help run the office. You will probably have to work with a computer in your day - to-day duties, so you will need to know something about computers and the way they are used. A computer really does make office life easier because it can so all sorts of different jobs. Computers are used to write letters and keep records of clients, suppliers and employees.

It should be noticed that learning on a computer can be fun. Students spend more time with computer-aided instruction per­forming the assigned task, as compared with conventional classroom.

At last air traffic control is impossible without computer application. It fully depends upon computer-generated informa­tion.

Many other uses of computers that we cannot imagine at present will become commonplace in the transition from an industrial to post industrial, or information society.

Vocabulary Notes

**to engage in** – бути залученим у щось

**commonplace** – банальний, звичайний, неоригінальний

**widespread** – розповсюджений, широко поширений

**а research** [rI'sq:tS]– дослідження

**toimprove** – покращувати

**tomaintainrecords** – вести облік

**deposits**[dI'pOzIts]**andwithdrawal** [wiD'drL(q)l]– вклади та вилучення

**aninquiry** [In'kwaiqrI]– довідка, запит

**guidance** ['gaid(q)ns]– управління; керівництво

**anenvironment** [In'vaIqr(q)nmqnt]– середовище

**freight**[freIt] **/ cargo** ['kQ:gqu]– вантаж, вартість перевезення

**sophisticated** – мудрий

**anemployee** ["emplOi'J]– робітник, службовець

**toassign** [q'saIn]– назначати, встановлювати

**asociety** [sq'saiqtI]– суспільство

**countless** [kauntlIs] – багаточисленний, незчисленний

**toverify** ['verIfaI]– перевіряти, контролювати

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) Computers have become commonplace in homes, offices, stores, schools, research insti­tutes, plants. 2) Computer-controlled robots are not able to improve the quality of manufactured products and to increase the productivity of industry. 3) Space exploration can not depend on computers for guidance, on-board environment and re­search.4) The computer has changed the production of copy in the newspaper industry. There are ten steps involved in the process. 5) Almost every medium-sized or large company will use computers to help run the office.

***2. Choose the right answer:***

1) The use of computers in business, industry and communi­cation services is … today.

*a) seldom;*

*b) widespread;*

*c)interesting.*

2) Computers … control the work of power stations, plants and docks.

*a) can;*

*b)can not;*

*c) could.*

3) In … , computers are used for financial planning, accounting and specific calculations.

*a) home;*

*b) farm;*

*c) business.*

4) … are used to fully describe countless factors.

*a) macro computers;*

*b) minicomputers;*

*c) desk computers*.

5) … use large computer systems to control ticket reservations

*a) institutions;*

*b) universities;*

*c) railway companies*.

6) ... is impossible without computer application.

*a) air traffic control;*

*b) air control;*

*c) water control*.

***3. Complete the sentences.***

1) At present a great deal of the work force of most coun­tries is engaged in … . 2) Computers have become commonplace in … .3) The work of banks depends upon … . 4) There are three steps involved in the process of copy in the newspaper industry: … . 5) People use computers in different branches: …. 6) Students spend more time with … .

***4. Answer the questions:***

1) Where have computers become commonplace? 2) How do computers help in business? 3) What does the work of banks depend upon? 4) Do computers form a part of many military systems? In what way? 5) How are computers used in medicine? 6) Why do Railway companies use a computer? 7) Can police departments work without using sophisticated devices? Why?

**Unit 7**

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Acquainted, proce­dure, architectural, cause, particularly, certain, substituted.

*2. While reading the text you will come across a number of new words. Try to guess what Ukrainian words they remind of you:*

Electronic, mechanical, documentation, data, analysis,to assist, specialists, programmer, inventory.

***II. Reading***

***Read the text and be ready to find in the text the answers to the following questions:***

* *What is the hardware?*
* *What is the software? What is the firmware?*

**Basic Elements of a Computer**

As we know all computer systems perform the functions of inputting, storing, processing, controlling, and outputting. Now we'll get acquainted with the computer system units that per­form these functions.

The electronic and mechanical parts that make up a computer system are called hardware. Thus, the input, storage, processing and control devices are **hardware**. Not visible, the information in the form of data and programs is the **software** — the set of computer programs, proce­dures, and associated documentation that make possible the effective operation of the computer system. Software programs are of two types: systems software and applications software.

*Systems software*are 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 by performing tasks, such as controlling all of the operations required, to move data into and out of a computer all of the steps in executing an application program. The person who prepares systems software is referred to as a systems programmer. Systems programmers are highly trained specialists and important members of the architectural team.

*Applications software*are the programs written to solve spe­cific problems (applications), such as payroll, inventory control, and investment analysis. The word program usually refers to an application program, and the word programmer is usually a person who prepares applications software.

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.

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

Vocabulary Notes

**inputting** – введення (даних)

**storing** – зберігання (даних)

**processing** – обробка(даних)

**controlling** – керування, управління

**outputting** – вивід

**togetacquainted**[q'kweInt] **–** познайомитися

**proce­dure**[prq'sJdZq]**–** процес, алгоритм

**data**[ 'deItq] **–** дані, інформація

**hardware –** апаратне обладнання, «комп’ютерне залізо»

**software –** програмне забезпечення

**systemssoftware –** системне програмне забезпечення

**applicationsoftware** – прикладне програмне забезпечення

**specificproblems=application** – специфічні (прикладні) задачі (завдання)

**toexecute**['eksIkjHt]**–** виконувати

**an application program –** прикладна програма

**asystemsprogrammer –** системний програміст

**architectural**['RkItekCqrql]**team** – група розробників (проектувальників)

**payroll**– платіжна відомість

**inventorycontrol** – переоблік

**investment analysis** – інвестиційний аналіз

**read-onlymemory (ROM)** – постійна пам'ять

**firmware** – вбудоване/мікропроцесорне програмне забезпечення, «зашиті програми» в ROM

**computersystemarchitect**['R:kItekt] **–** розробник архітектури комп’ютерної системи

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) All computer systems perform the functions of inputting, storing, processing, controlling, and outputting. 2) The electronic and mechanical parts that make up a computer system are called hardware.3) Visible, the information in the form of data and programs is the software.4) Software programs are of two types: systems software and applications software. 5) Applications software are the programs designed to control the operation of a computer system. 6) Systems software are the programs written to solve spe­cific problems (applications).

***2. Choose the right answer:***

1) All computer systems perform the functions of … .

*a) inputting, storing;*

*b) controlling and outputting;*

*c)inputting, storing, processing, controlling, and outputting.*

2) …, the information in the form of data and programs is the software

*a) not visible;*

*b)visible;*

*c) however.*

3) System software do not solve specific problems they are written to assist people in the use of the computer system by … tasks.

 *a) outputting;*

*b) performing;*

*c) storing.*

4) The person who prepares systems software is referred to as … .

*a) a systems programmer;*

*b) architect;*

*c) designer.*

5) Often programs, particularly … , are stored in an area of memory not used for applications software.

*a) application;*

*b) systems software;*

*c) hardware.*

6) Protected programs are stored in an area of memory called … which can be read from but not written on.

*a) computer;*

*b) random access memory(RAM);*

*c)read-only memory(ROM)*

***3. Complete the sentences.***

1) The input, storage, processing and control devices are … . 2) The set of computer programs, proce­dures, and associated documentation that make possible the effective operation of the computer system is called … . 3) Systems software are the programs designed … . 4) Applications software are the programs written … . 5) Firmware often refers to … .

***4. Answer the questions:***

1) What functions do all computer systems perform? 2) What devices are hardware? 3) How many types are software programs? What are they? 4) What is the system software? 5) What is the application software? 6) What does the word program refer to?

**Unit 8**

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Unique, significantly, scientific, previous, numerous, enhancements, reliability, major, wireless, awareness, suspicious.

*2. While reading the text you will come across a number of new words. Try to guess what Ukrainian words they remind of you:*

Menu, dialog, calendar, calculator, card, graphics, strategic, mobile, computing, integrated, cafes, viruses, hackers, debut, music, video.

***II. Reading***

***Read the text in order to fill in the table:***

|  |  |
| --- | --- |
| **The name of OS** | **Distinctive Features** |
|  |  |

**Microsoft Operating Systems**

*MS-DOS.*In 1980 Microsoft focuses on a new operating system—the software that manages, or runs, the computer hardware and also serves to bridge the gap between the computer hardware and programs, such as a word processor. It’s the foundation on which computer programs can run. They name their new operating system "MS‑DOS." MS‑DOS stands for Microsoft Disk Operating System.

In 1985 Windows ships Windows 1.0. It is unique software designed for the serious PC users. There are drop-down menus, scroll bars, icons, and dialog boxes that make programs easier to learn and use. Windows 1.0 ships with several programs, including MS‑DOS file management, Paint, Windows Writer, Notepad, Calculator, and a calendar, card file, and clock to help you manage day-to-day activities.

In 1987 Microsoft releases Windows 2.0 with desktop icons and expanded memory. With improved graphics support, you can now overlap windows, control the screen layout, and use keyboard shortcuts to speed up your work. Windows 2.0 is designed for the Intel 286 processor.

In 1990, Microsoft announces Windows 3.0, followed shortly by Windows 3.1 in 1992. Windows now has significantly better performance, advanced graphics with 16 colors, and improved icons. Program Manager, File Manager, and Print Manager arrive in Windows 3.0. Windows software is installed with floppy discs bought in large boxes with heavy instruction manuals. The popularity of Windows 3.0 grows with the release of a new Windows software development kit (SDK), which helps software developers to focus more on writing programs and less on writing device drivers.

Unlike Windows 3.1, however, Windows NT 3.1 is a 32-bit operating system, which makes it a strategic business platform that supports high-end programs.

In 1995 Microsoft releases Windows 95.This is the era of fax/modems, e‑mail, the new online world, and dazzling multimedia games and educational software. Windows 95 has built-in Internet support, dial-up networking, and new Plug and Play capabilities that make it easy to install hardware and software. The 32-bit operating system also offers enhanced multimedia capabilities, more powerful features for mobile computing, and integrated networking. Windows 95 is the upgrade to the previous Windows and MS‑DOS operating systems. Upgrade versions are available for both floppy disk and CD-ROM formats. In the summer of 1995, the first version of Internet Explorer is released. The browser joins those already vieing for space on the World Wide Web.

Released in 1998, Windows 98 is the first version of Windows designed specifically for consumers. PCs are common at work and home, and Internet cafes where you can get online are popping up. Other improvements include the ability to open and close programs more quickly, and support for reading DVD discs and universal serial bus (USB) devices. Windows 98 is the last version based on MS‑DOS.

Designed for home computer use, Windows Me offers numerous music, video, and home networking enhancements and reliability improvements compared to previous versions. Windows Me was the last Microsoft operating system to be based on the Windows 95 code base.

Windows 2000 Professional is designed to replace Windows 95, Windows 98, and Windows NT Workstation 4.0 on all business desktops and laptops. Built on top of the proven Windows NT Workstation 4.0 code base, Windows 2000 adds major improvements in reliability, ease of use, Internet compatibility, and support for mobile computing. Windows 2000 Professional simplifies hardware installation by adding support for a wide variety of new Plug and Play hardware, including advanced networking and wireless products, USB devices, IEEE 1394 devices, and infrared devices.

In 2001 Windows XP becomes one of the best-selling products in the coming years. It’s both fast and stable. Awareness of computer viruses and hackers increases, but fears are to a certain extent calmed by the online delivery of security updates. Consumers begin to understand warnings about suspicious attachments and viruses. There’s more emphasis on Help and Support. Windows XP Home Edition offers such enhancements as the Network Setup Wizard, Windows Media Player, Windows Movie Maker, and enhanced digital photo capabilities. With a fresh visual design, Windows XP Professional includes features for business and advanced home computing, including remote desktop support, an encrypting file system, and system restore and advanced networking features. Windows XP has several editions during these years: Windows XP 64-bit Edition (2001), Windows XP Media Center Edition, Windows XP Tablet PC Edition (2002).

By the late 2000s, the wireless world has arrived. When Windows 7 is released in October 2009, laptops are outselling desktop PCs and it’s common to get online at public wireless hotspots like coffee shops. Wireless networks can be created at the office or at home. Windows Touch makes its debut, enabling you to use your fingers to browse the web, flip through photos, and open files and folders. You can stream music, videos, and photos from your PC to a stereo or TV. Many laptops no longer have a slot for DVDs and some have solid state drives rather than conventional hard disks. Most everything is streamed, saved on flash drives, or saved in the "Cloud"—an online space for sharing files and storage. Windows Live—free programs and services for photos, movies, instant messaging, e‑mail, and social networking—is seamlessly integrated with Windows so that you can keep in touch from your PC, phone, or the web, extending Windows to the Cloud.

Meanwhile, work is underway for the next version of Windows.

Vocabulary Notes

**tofocuse on** ['fqukqs]**–** зосереджуватися на

**to bridge the gap between –** ліквідовувати розрив між

**toship –** вводити, добавляти

**torelease –** випускати у світ

**tooverlap –** суміщати

**significantly –** багатозначно

**softwaredevelopmentkit (SDK) –** набір інструментальних засобів для розробки програмного забезпечення (включає бібліотеки, *заголовочні*файли, файли допомоги, документацію)

**built-in –** вбудований

**enhanced**[In'hRnst]**–** вдосконалений, розширений

**enhancement –** модернізація, вдосконалення, розширення

**PlugandPlay -** стандарт фірм Microsoft, Intel та ін., що мають на меті спрощення підключення комп’ютера: бере на себе розпізнавання та налаштування периферійного обладнання без подальшого встановлення параметрів користувачем.

**tovie** [vaI]- конкурувати

**theupgrade –** оновлена версія

**topopup –** висвітлитися на екрані

**wireless** - безпровідниковий

**stable –** стійкий, постійний

**awareness**[q'wFqnqs]**–** компетентність, знання

**anencryptingfilesystem –** закодована система файлів

**to restore –**відновлення

**to feature –** характеризуватися

**tostream –** відтворювати

**seamlessly –**  прямо, безперервно

**tokeepintouchfrom -** мати зв'язки, бути в контакті,не відриватися

**meanwhile –** тим часом

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) MS‑DOS stands for Microsoft Disk Operating System. 2) Windows 1.0. is unique software designed for the serious mainframeusers. 3) In 1987 Microsoft releases Windows 2.0 with desktop icons and expanded memory. 4) Program Manager, File Manager, and Print Manager arrive in Windows 2.0. 5) Windows NT 3.1 is a 16-bit operating system. 6) Windows 95 has built-in Internet support, dial-up networking, and new Plug and Play capabilities that make it easy to install hardware and software. 7) Windows 98 is the first version of Windows designed specifically for computer programmers.

***2. Choose the right answer:***

1) … is the foundation on which computer programs can run.

*a) MS-DOS;*

*b) Internet Explorer;*

*c) Telnet.*

2) … is designed for the Intel 286 processor.

*a) MS-DOS;*

*b) Windows 2.0;*

*c) Windows Vista.*

3) The popularity of … grows with the release of a new Windows software development kit (SDK).

*a) MS-DOS;*

*b) Windows 2.0;*

*c) Windows 3.0.*

4) … is the upgrade to the previous Windows and MS‑DOS operating systems.

*a) Windows 95;*

*b) Windows 2.0;*

*c) Windows 3.0.*

5) … simplifies hardware installation by adding support for a wide variety of new Plug and Play hardware.

*a) Windows 95;*

*b) Windows 2000 Professional;*

*c) Windows XP.*

6) With a fresh visual design, … includes features for business and advanced home computing.

*a) Windows XP Professional;*

*b) Windows 2000 Professional;*

*c) Windows 2000.*

7) Using … you can watch television, view and send photographs, and edit videos.

*a) Win RAR;*

*b) Windows Media Player;*

*c) Acrobat Reader.*

8) … can be created at the office or at home.

*a) Wireless networks;*

*b) Wireless beacon;*

*c)Wirelesstelegraphy.*

***3. Complete the sentences.***

1) In 1980 Microsoft focuses on a new operating system which they name … . 2) Windows 1.0 ships with several programs, including … . 3) With improved graphics support in Windows 2.0., you can … . 4) Windows 3.1 has significantly better … . 5) Windows NT 3.1 supports … . 6) Windows 95 also offers … . 7) Windows 98 is the last version … . 8) Windows Me was the last Microsoft operating system to be based … .

Unit 9

Text Study

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Central Processing Unit (CPU), circuit, multiplication, addition, to identify, to execute, to fetch, to load, route.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Data, calculation, electronic, arithmetic, program, instruction, peripheral, printer.

*II. Reading*

*Read the text and be ready to find in the text the answers to the following questions:*

* *What is the structure of a computer?*
* *What is the function of the CPU?*

**The Structure of a Computer**

A computer contains several major subsystems such as the Central Processing Unit (CPU), memory, and peripheral device controllers. These components all plug into a "Bus". The bus is essentially a communications highway; all the other components work together by transferring data over the bus.

The active part of the computer, the part that does calculations and controls all the other parts is the "Central Processing Unit" (CPU). The Central Processing Unit (CPU) contains electronic clocks that control the timing of all operations; electronic circuits that carry out arithmetic operations like addition and multiplication; circuits that identify and execute the instructions that make up a program; and circuits that fetch the data from memory. Instructions and data are stored in main memory. The CPU fetches them as needed.

Peripheral device controllers look after input devices, like keyboards and mice, output devices, like printers and graphics displays, and storage devices like disks. The CPU and peripheral controllers work together to transfer information between the computer and its users. Sometimes, the CPU will arrange for data be taken from an input device, transfer through the controller, move over the bus and get loaded directly into the CPU.

Data being output follows the same route in reverse – moving from the CPU, over the bus, through a controller and out to a device. In other cases, the CPU may get a device controller to move data directly into, or out of, main memory.

VocabularyNotes

**subsystem** – підсистемна частина системи, компонент системи.

**adevice** [dI'vais] – прилад, механізм; апарат, машина

**toplug** – затискати, закупорювати, включать в сіть, вставлять вилку в розетку.

**thebus** – шина

**highway** ['haIweI] – головна лінія зв’язку, основний шлях, магістраль

**totransfer** ['trxnsfq(:)] – переносити, переміщати

**tocontain** – включати в себе.

**circuit** – 1) цикл, сукупність операцій; комплекс вправ 2) електр. схема, коло.

**toidentify** [aI'dentifaI] – 1) встановлювати тотожність, вирізняти 2) розпізнавати; встановлювати особистість 3) співпадати.

**toexecute** ['eksIkju:t] – виконувати, реалізовувати.

**tostore** [stL] – 1) зберігати 2) вміщувати, акумулювати.

**tofetch**– витягати, видобувати (дані), доставляти, приносити.

**input /outputdevice** – пристрої вводу/виводу

**toarrange**[q'reIndZ] – 1) приводити в порядок, розміщати 2) класифікувати, систематизувати 3) організовувати, підготовлювати.

**tomove** – 1) рухатись, пересуватися 2) переїжджати, переселятися.

**aroute**[rHt]– *комп.* траса, дорога; маршрут.

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) A computer contains two major subsystems. 2) The main active part of a computer is CPU. 3) Instructions and data are stored in CPU. 4) Peripheral device controllers look after input devices, output devices and storage devices like disks. 5) The CPU and peripheral controllers work together to transfer information between the computer and its users.

***2. Choose the right answer:***

1) A computer contains several major subsystems such as:

*a) the CPU and peripheral device controllers;*

*b) the Central Processing Unit, memory and peripheral device controllers;*

*c) the Central Processing Unit and memory.*

2) All the components of computer work together by transferring data over …

*a) the CPU;*

*b) the bus;*

*c) the memory.*

3) … fetches instructions and data from the main memory as needed.

*a) the CPU;*

*b) the peripheral controllers;*

*c) the subsystems.*

4) Peripheral device controllers look after input devices … .

*a) like printers and graphics displays;*

*b) like keyboards and mice;*

*c) like disks.*

***3.Complete the sentences:***

1) A computer contains several major subsystems such as … . 2) The bus is … . 3) Central Processing Unit is … . 4) The Central Processing Unit (CPU) contains … . 5) Instructions and data are stored (where?) … .

***4. Answer the questions:***

1) What subsystems does a computer contain? 2) What is the bus? 3) What part does calculations and controls all the other parts? 4) What does the CPU contain? 5) Where are instructions and data stored? 6) What do controllers look after?

Unit 10

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

A keyboard, to coordinate, numerical, advanced, design representation, interface, to simplify, to require, double-click, to issue, application, quality.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

A manipulator, popular, indicators, graphics, representation, display, to control, the cursor, orientation, to press, commands, vertical, horizontal, manuscript, special, photos.

***II. Reading***

*Read the text and be ready to find in the text the answers to the following questions:*

* *What devices are there for inputting information?*
* *Where do graphical plotting tables find their application?*

**Input Devices**

There are several devices used for inputting information into the computer: a keyboard, some coordinate input devices, such as manipulators (a mouse, a track ball), touch panels and graphical plotting tables, scanners, digital cameras, TV tuners, sound cards etc.

When personal computers first became popular, the most common device used to transfer information from the user to the computer was *the keyboard*. It enables inputting numerical and text data. A standard keyboard has 104 keys and three more ones informing about the operating mode of light indicators in the upper right corner.

Later when the more advanced graphics became to develop, user found that a keyboard did not provide the design capabilities of graphics and text representation on the display. There appeared manipulators, a mouse and a track ball, that are usually used while operating with graphical interface. Each software program uses these buttons differently.

*The mouse* is an optic-mechanical input device. The mouse has three or two buttons which control the cursor movement across the screen. The mouse provides the cursor control thus simplifying user's orientation on the display . The mouse's primary functions are to help the user draw, point and select images on his computer display by moving the mouse across the screen.

In general software programs require to press one or more buttons, sometimes keeping them depressed or double-click them to issue changes in commands and to draw or to erase images. When you move the mouse across a flat surface, the ball located on the bottom side of the mouse turns two rollers. One is tracking the mouse's vertical movements; the other is tracking horizontal movements. The rotating ball glides easily, giving the user good control over the textual and graphical images.

In portable computers *touch panels or touch pads* are used instead of manipulators. Moving a finger along the surface of the touch pad is transformed into the cursor movement across the screen.

*Graphical plotting tables (plotters)* find application in drawing and inputting manuscript texts. You can draw, add notes and signs to electronic documents by means of a special pen. The quality of graphical plotting tables is characterized by permitting capacity, that is the number of lines per inch, and their capability to respond to the force of pen pressing .

*Scanner* is used for optical inputting of images (photographies, pictures, slides) and texts and converting them into the computer form.

*Digital videocameras* have been spread recently. They enable getting videoimages and photographs directly in digital computer format. Digital cameras give possibility to get high quality photos.

*Sound cards* produce sound conversion from analog to digital form. They are able to synthesize sounds. Special game-ports and joysticks are widely used in computer games.

VocabularyNotes

**a keyboard –** клавіатура

**a key–**клавіша; кнопка; перемикач; ключовий, основний; головний; переключати; набирати на клавіатурі

**amanipulator–** маніпулятор; блок обробки

**atrackball–**трекбол

**atouch** [tAC] **panel–** сенсорна панель

**graphicplottingtables–** графічні планшети

**asoundcard–** звукова карта (плата)

**toenable–** дозволяти; допускати; робити можливим

**an operatingmode–**режим роботи

**to pressabutton–**натиснути на кнопку

**tokeepbuttonsdepressed –** утримувати кнопки натиснутими

**double-click–** подвійне натискання

**toeraseimages–** видалити, стерти зображення (об’єкт)

**aroller–** ролик

**track–** слідкувати; прослідковувати; проходити; слід; траєкторія; шлях; доріжка

**bymeansof–** за допомогою, за посередництвом

**to simplify** ['sImplIfaI]–спрощувати

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) There are several devices used for inputting information into the computer: a keyboard and sound cards. 2) When personal computers first became popular, the most common device used to transfer information from the user to the computer was the mouse. 3) A standard keyboard has 104 keys. 4) The mouse is an optic-mechanical output device. 5) Software programs require to press one or more buttons, sometimes keeping them depressed or double-click.

***2. Choose the right answer:***

1) The keyboard enables inputting …

*a) numerical and text data;*

*b) the instructions for processing the data;*

*c) numerical data.*

2) The mouse is an … input device.

a*) optic;*

*b) optic-mechanical;*

*c) mechanical.*

3) The mouse's … functions are to help the user draw, point and select images on his computer display by moving the mouse across the screen.

*a) main;*

*b) secondary;*

*c) auxiliary.*

4) In portable computers touch panels or touch pads are used instead of … .

*a) keyboard;*

*b) mouse;*

*c) manipulators*.

***3. Complete the sentences:***

1) There are several devices used for inputting information into the computer: … . 2) The keyboard enables … . 3) The mouse is … . 4) In portable computers touch panels or touch pads are used … . 5) Scanner is used for … . 6) Digital cameras give possibility to get … . 7) Sound cards are able to … .

***4. Answer the questions:***

 1) What devices are used for inputting information into the computer? 2) What was the most common device in early personal computers? 3) What is the function of a keyboard? 4) Why do many users prefer manipulators to keyboard? 5) How does the mouse operate? 6) What is its function?

Unit 11

**Text Study**

*I. Pre-reading Exercises*

*1. Repeat the words in chorus:*

Permanent, human-readable, to identify, a ribbon, requirements, quality, an observer, variety, to create.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

A printer, a component, a design, electromechanical, a mechanism, typically, magnetic, a line, cylindrical, a minute, electro-photographic.

***II. Reading***

*Read the text and be ready to find in the text the answers to the following questions:*

* *What types of printers are there??*
* *What are line printers?*

**Output Devices. Printer**

Printers provide information in a permanent, human-readable form. They are the most commonly used output devices and are components of almost all computer systems. Printers vary greatly in performance and design. We will classify printers as character printers, line printers and page printers in order to identify three different approaches to printing, each with a different speed range. In addition, printers can be described as either impact or nonimpact. Printers that use electromechanical mechanisms that cause hammers to strike against a ribbon and the paper are called impact printers. Nonimpact printers do not hit or impact a ribbon to print.

Character printers print only one character at a time. A typewriter is an example of a character printer. Character printers are the type used with literally all microcomputers as well as on computers of all sizes whenever the printing requirements are not large. Character printers may be of several types. A letter-quality printer is a character printer which produces output of typewriter quality. Letter-quality printers typically have speeds ranging from 10 to 50 characters per second. Dot-matrix printers form each character as a pattern of dots. These printers have a lower quality of type but are generally faster printers than the letter-quality printers — in the range of 50 to 200 characters per second. One of the newest types of character printer is the ink-jet printer. It sprays small drops of ink onto paper to form printed characters. The ink has 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. Their printing speeds are such that to an observer they appear to be printing a line at a time. They are impact printers. The speeds of line printers vary from 100 to 2500 lines per minute. Line printers have been designed to use many different types of printing mechanisms. Two of the most common print mechanisms are the drum and the chain. Drum printers use a solid, cylindrical drum, rotating at a rapid speed. Speeds of drum printers vary from 200 to over 2000 lines per minute. Chain printers have their character set on a rapidly rotating chain called a print chain. Speeds of chain printers range from 400 to 2400 lines per minute.

Page printers are high-speed nonimpact printers. Their printing rates are so high that output appears to emerge from the printer a page at a time. A variety of techniques are used in the design of page printers. These techniques, called electrophotographic techniques, have developed from the paper copier technology. Laser-beam printers use a combination of laser beam and electrophotographic techniques to create printer output at a rate equal to 18000 lines per minute.

VocabularyNotes

**human-readableform –** зручнадля читання форма

**performance** [pq'fLmqns] **–** (робоча) характеристика; продуктивність; швидкість роботи; пропускна здатність

**a characterprinter–** пристрій друку символами

**a lineprinter–** пристрій друку рядками

**apageprinter–** пристрій друку сторінками

**(non) impactprinter–** (без)контактний принтер

**letter-quality**['kwOlItI] **printer–** принтер с топографічною якістю друку

**dot-matrixprinter–** крапково-матричний принтер

**anink-jetprinter–**струйний принтер

**alaser-beamprinter–** лазерний принтер

**anapproach** [q'prqutS] **–** підхід; метод; принцип; наближення

**atatime–**за один раз; одночасно

**tocause–** викликати; змушувати; примушувати

**atypewriter–** пристрій для друкування

**tospraydropsofink–** розпилювати краплі чорнила

**toaffect–** впливати; впливати; виявлятись

**atechnique** [tek'nJk] **–** метод; спосіб; техніка; методика; технологія

**printeroutput–** вивід для друку; дані, що роздруковуються

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) Printers provide information in a permanent, human-readable form. 2) Printers are commonly used input devices. 3) We classify printers as character printers and line printers. 4) A typewriter is an example of a line printer. 5) One of the newest types of character printer is the ink-jet printer that sprays small drops of ink onto paper to form printed characters.

***2. Choose the right answer:***

1) Printers are the most commonly used … devices

*a) input;*

*b) output;*

*c) storage.*

2) Printers that use electromechanical mechanisms that cause hammers to strike against a ribbon and the paper are called … .

*a) impact printers;*

*b) nonimpact printers;*

*c) low-speed printers.*

3) Character printers print only … at a time.

*a)three characters;*

*b) two characters;*

*c) one character.*

4) Line printers are electromechanical machines used for … output on most computer systems.

*a) high-volume paper;*

*b) low-volume paper;*

*c) mid-volume paper.*

***3. Complete the sentences:***

1) There are several kinds of printers … . 2) Printers vary greatly in … . 3) The characteristic features of character printers are … . 4) Character printers may be of several types: … . 5) Line printers are … . 6) Two of the most common print mechanisms are … . 7) Drum printers use … . 8) Speeds of drum printers vary from … to over … lines per minute. 9) Speeds of chain printers range from … to … lines per minute. 10) Page printers are … .

***4. Answer the questions:***

1) What are the three types of printers? 2) What is a letter-quality printer? 3) What is a dot-matrix printer? 4) What type of printer is the most common with microcomputer systems? 5) What is the most common printer type used on large computer systems? 6) What is an impact printer? Give an example. 7) What is a nonimpact printer? Give examples. 8) What are the most widely used printers? 9) How do you distinguish between a letter-quality printer and a dot-matrix printer? 10) Which of these printers is slower?

Unit 12

TextStudy

*I. Pre-readingExercises*

*1. Repeat the words in chorus:*

The essence, equations, errors, flowcharting, pictorial, representation, predefined, guide, a template, pseudocode, the burden, emphasizes, a sequence, decision.

*2. While reading the text you will come across a number of international words. Try to guess what Ukrainian words they remind of you:*

Programming, the process, instructions, specific, algorithms, mathematical, terms, formulae, problem, a phase, a document, a plan, symbols, to illustrate, an operation, basic, structures.

***II. Reading***

*Read the text and be ready to find in the text the answers to the following questions:*

* *What is programming?*
* *What are two common techniques for planning the logic of a program?*

**Computer Programming**

Programming is the process of preparing a set of coded instructions which enables the computer to solve specific problems or to perform specific functions. The essence of computer programming is the encoding of the program for the computer by means of algorithms. The thing is that any problem is expressed in mathematical terms; it contains formulae, equations and calculations. But the computer cannot manipulate formulae, equations and calculations. Any problem must be specially processed for the computer to understand it, that is - coded or programmed.

The phase in which the system's computer programs are written is called the development phase. The programs are lists of instructions that willbe followed by the control unit of the central processing unit (CPU). The instructions of the program must be complete and in the appropriate sequence, or else the wrong answers will result. To guard against these errors in logic and to document the program's logical approach, logic plans should be developed.

There are two common techniques for planning the logic of a program. The first technique is flowcharting. A flowchart is a plan in the form of a graphic or pictorial representation that uses predefined symbols to illustrate the program logic. It is, therefore, a "picture" of the logical steps to be performed by the computer. Each of the predefined symbol shapes stands for a general operation. The symbol shape communicates the nature of the general operation, and the specifics are written within the symbol. A plastic or metal guide called a template is used to make drawing the symbols easier.

The second technique for planning program logic is called pseudocode.

Pseudocode is an imitation of actual program instructions. It allows a program-like structure without the burden of programming rules to follow. Pseudocode is less time-consuming for the professional programmer than is flowcharting. It also emphasizes a top-down approach to program structure.

Pseudocode has three basic structures: sequence, decision, and looping logic. With these three structures, any required logic can be expressed. Vocabulary Notes

**the ess**e**nce** – суть, існування

**a formulae**['fLmjulq]– формула, формулювання

**equation**[I'kweIS(q)n] – вирівнювання, рівність

**a calculation** – обчислення

**to guard**[gRd]– запобігати, охороняти, захищати, контролювати

**an error** – помилка

**flowcharting**['flqVtSRtIN] – складання блок-схем

**predefined symbols** – символи визначені наперед

**a template**['templeIt] – шаблон, трафарет, маска

**a pseudocode**['sjHdqV'kOud] – псевдокод, символічний код

**a burden**['bWdn] – ноша, груз, тяжкість

**toemphasize**['emfqsaiz] – надавати особливого значення, акцентувати

**to perform** – виконувати

**to encode**[In'kqVd] – шифрувати, кодувати

**loopinglogic** – логічне введення циклів в програму

**a top-down approach** – низхідний (зверху вниз) напрямок

***Comprehension***

***1. Tell what sentences are true and what are false.***

1) The essence of computer programming is the encoding of the program for the computer by means of instructions. 2) Any problem must be specially processed for the computer to understand it, that is - coded or programmed. 3) The programs are lists of words that willbe followed by the control unit of the central processing unit. 4) There are several techniques for planning the logic of a program. 5) The first technique is flowcharting which is a plan in the form of a graphic or pictorial representation. 6) The second technique for planning program logic is called pseudocode which is an imitation of actual program instructions. 7) Pseudocode has two basic structures: sequence and looping logic.

***2. Choose the right answer:***

1) Programming is the process of preparing … which enables the computer to solve specific problems or to perform specific functions.

*a) a set of algorithms;*

*b)a set of coded letters;*

*c) a set of coded instructions.*

2) The phase in which the system's computer programs are written is called the … .

*a) development phase;*

*b) development action;*

*c)development system.*

3) The instructions of the program must be … and in the appropriate sequence.

*a) understandable;*

*b) complete;*

*c) interesting.*

4) There are two common techniques for planning the logic of a program: … .

*a) flowcharting and pseudocode;*

*b) pseudocode and representation;*

*c) flowcharting and programming.*

***3.Complete the sentences:***

1) Programming is … . 2) The development phase is … . 3) The programs are … . 4) There are two common techniques for planning the logic of a program: … 5) Pseudocode is … . 6) Pseudocode has three basic structures: … . 7) A flowchart is … .

***4. Answer the questions:***

1) What is computer programming and its essence? 2) What is any problem expressed in? 3) What does it contain? 4) What is the development phase? What are the programs? 5) What are the techniques for planning the logic of a program? 6) What is a flowchart? 7) What is a pseudocode? 8) How many structures does pseudocode have?

# *Self-assessment module I*

***1. Give Ukrainian equivalents of the following.***

An information-dependent society; a computer-literate cit­izen; an everyday problem-solving device; to in­fluence the quality of life; to learn the basics; the most significant technical achievements; to be on the way of becoming computer-literate; to have much in common; to bring both economic and social changes; the employer's requirements; work patterns; to prepare a report on different options; to oversee the implementation and testing of the system; to act as a link; to control the internal operations of computers; to convert the system analyst's specification to a logical series of steps; to handle the basic opera­tion of the computers; the use of machine codes; to pro­vide user manuals.

***2. Give English equivalents of the following.***

Стежити за виконанням та випробовуванням системи; керувати операціями комп’ютера; інформаційно-залежне суспільство; вивчати основи; бути на шляху становлення компю’терно-грамотної особистості; мати багато спільного; приносити як і економічні так і соціальні зміни; принципи роботи; комп’ютерно-грамотний громадянин; вимоги роботодавця; пристрій, що вирішує щоденні проблеми; впливати на якість життя; готувати доповідь з різноманітних питань; перетворювати специфікацію системного аналітика у логічну послідовність дій; використання машинного коду; найбільш значне технічне досягнення; діяти як сполучна ланка*,* керувати внутрішніми операціями комп’ютера;

***3.Fill in the gaps with the words from Vocabulary Notes in the appropriate form.***

*Significant/ computing/ to encounter/ system analyst/ to spawn/*

*software designer*

1… is a necessity for educated citizens. 2) Developing the new hardware they … with difficulties. 3) This error … system crash. 4) The latest application software was … . 5) … studies his employer’s requirements to prepare a report for using new computer technologies. 6) … has developed new business application for their corporation.

***4. Give Ukrainian equivalents of the following.***

The introduction of electronic computers, academic or research institutions, in interactive mode, for extended du­rations, to lead to the proliferation of personal computers, in kit form and in limited volumes, to be aimed for office, to remain a major player in the personal computer marketplace, microprocessor-based, a single silicon chip, to range in size, local area networking, to share expensive mass storage and peripherals, regardless of the purpose.

***5. Give English equivalents of the following.***

Незважаючи на мету, протягом тривалого часу, поява електронних комп’ютерів, вести до збільшення персональних комп’ютерів, сягати у розмірі, у вигляді комплекту та в обмеженій кількості, інтерактивному режимі.

***Self-assessment module II***

***1. Translate sentences into English using words and word combinations from the Vocabulary Notes.***

1. Комп’ютер складається з багатьох підсистем. 2. Центральний процесор допомагає виконувати обчислення і контролювати всі частини комп’ютера. 3.Центральний процесор вміщує електронну схему, яка виконує операції додавання і множення. 4. Крім центрального процесора комп’ютер складається з додаткових пристроїв управління. 5. Вони відповідають за пристрої вводу, виводу та запам’ятовування.

***2. Give Ukrainian equivalents of the following.***

An assembly plant, independently of human control, telephone equipment, much faster and better, simplification of work, the motions of the worker, both light and heavy workpieces, household thermostat, to indicate the dimensions, input device, to have an influence.

***3. Give English equivalents of the following.***

Автоматичні пристрої, автоматизоване виробництво, виконувати прості задачі, інтегрована система виробництва, принцип зворотного зв’язку, пристрій може розганятися і гальмувати, комп’ютер автоматично посилає команди, високоавтоматизована система, невиробнича система.

***4. Match the words in A with their synonyms in B:***

**A B**

To perform to begin

Manufacturing way

Work to do

To design to calculate

Method production

To use to construct

To start job

To count to apply

***5.Fill in the gaps with the words from Vocabulary Notes in the appropriate form.***

*Aid / controllers / sequence / handling / resemble / automated /* feedback / *efficiency*

1) A completely general-purpose machine can carry out any …. of instruction, any program which can be expressed exactly and translated into its command code. 2) Not a single stage or a sequence of operations, but a whole plant is completely. 3) Nature thoughtfully provided our earliest ancestors with a simple …. of computation — a digital computer in the strictest sense of the word — copies of which may be seen in active use in any school-room where the youngest generation is counting on its fingers. 4) A revolution in data …. is taking place.

***6. Translate sentences into English using words and word combinations from the Vocabulary Notes.***

1). Автоматизація широко використовується назаводах по складанню кузовів автомобілів. 2). Обробка важких деталей може виконуватись роботами. 3). Спрощення конструкції призвело до зниження вартості продукції. 4). Комп’ютери можна використовувати щоб контролювати роботу станків. 5). Гнучка автоматизація дозволяє перепрограмовувати обладнання.

***7. Match the words in A with their synonyms in B:***

**A B**

to emerge small

bulky to lessen

core to appear

to release heavy

to squeeze to compress

tiny to free

to reduce heart

***8.Fill in the gaps with the words from Vocabulary Notes in the appropriate form.***

*todesign / rectangular / to imprint /the abacus / bulky / vacu­um tubes / cores / to reduce / to squeeze / launch / to etch*

1) … allowed people to make calculations using moving beads arranged on a rack. 2) ENIAC … at the University of Pennsylvania. 3) It was an electronic computer which used … and was able to calculate at electronic speeds. 4) The devices of first generation computers were not only … , they were also unreliable. 5) Second generation computers were able … computational time from milliseconds to microseconds, or millionths of seconds. 6) Memories of those computers were made of magnetiza­ble… . 7) Fourth generation computersbecame smaller as more components … onto microchips. 8) A chip is a square or … piece of silicon.

***9.Match the words in A with their synonyms in B:***

**А** purpose **В** to hold

ambiguous aim

superficial worthy

to revise to pile up

to compile to check

to retain surface

considerable doubtful

***10.Fill in the gaps with the words from Vocabulary Notes in the appropriate form.***

*general-purpose / high-level / to aim / compiler / to support / source / to depend / to deal with / applications / purpose / data-free / superficial*

1) A computers … different kinds of problems. 2) Instructions … on the type of problem to be solved. 3) A program written in one of the … languages is often called a … program. 4) COBOL is used for commercial … . 5) Programming language I is used for data processing as well as scientific … . 6) C is a highly portable … language.

***Self-assessment module III***

***1. Give English equivalents of the following.***

Команди, які заставляють комп’ютер виконувати ті ж самі функції; апаратне забезпечення; керувати операціями комп’ютерної системи; послідовність команд, які є замінними (замінниками) для апаратного забезпечення; познайомитися з елементами (блоками) комп’ютерної системи; набір комп’ютерних програм та алгоритмів; ціна є важливішою, ніж якісні характеристики; захищені програми; функції вводу (зберігання, управління та виводу); пам’ять; прикладне програмне забезпечення.

***2. Match the words in A with their synonyms in B:***

**A B**

to execute special

to get acquainted to replace

a procedure a case

data a designer

to substitute to accomplish

architect a method

an instance information

to cause to meet

to assist to make

specific to help

***3.Fill in the gaps with the words from Vocabulary Notes in the appropriate form.***

*To execute / hardware/software/ROM/input/output/application software/system software/*

1) Physical parts that make up a computer system is called … . 2) Programs which can be used on a particular computer system is called … . 3) The computer … a sequential set of instructions. 4) By itself, a typical microprocessor IC does not contain the memories and … and … functions. 5) The purpose of … … is to get the computer operating. 6) The purpose … … is to get the computer to do a specific job.

***4. Translate sentences into English using words and word combinations from the Vocabulary Notes.***

1) Базовими елементами комп’ютера є апаратне забезпечення, програмне забезпечення та вбудовані програми. 2) Комп’ютер виконує алгоритм завдяки системному та прикладному програмному забезпеченню. 3) Системний програміст є обов’язковим членом команди розробників. 4) На парі студенти познайомилися з основними функціями комп’ютера, а саме: вводу, виводу, обробки інформації, зберігання та управління. 5) Базовий мікрокомп’ютер потребує постійної пам’яті для зберігання програм та команд.

# ABBREVIATIONS

ADP - automated data processing - автоматизованаобробкаданих

ALU - arithmetic-logical unit - арифметико-логічнийпристрій (блокцентральногопроцесора, якийвиконуєвсідіїмікропроцесоранаосновіматематичнихілогічнихоперацій)

API - Application programming interface - інтерфейсприкладногоуправління

APL - A Programmable language - високорівневамовапрограмування

BASIC - (скор. від Beginner's All-purpose Symbolic Instruction Code) - простийувикористаннімовапрограмуваннявисокогорівня, розробленийв 1964 р.

BDOS - basic disk operating system - базовадисковаопераційнасистема

BIOS - basic input / output system - базовасистемавведення-виводу

b. o.p.s. - Billion operations per second - мільярдопераційвсекунду (одиницявимірюванняшвидкодіїсистеми)

bpi - Bits per inch - числобітнадюйм

b.p.s. - Bits per second - числобітвсекунду (одиницявимірюваннящільностізаписунаносії)

**С**

CAD - computer-aided design - комп'ютернепроектування

CAI - computer-aided instruction - комп'ютерненавчання

CAN - cancel - символскасування

CAT - computer-aided testing - комп'ютернийконтроль (тести ¬ вання)

CD - compact-disk - компакт-диск

CDD - compact-disk drive - дисководдлякомпакт-дисків

CD-DA - compact disk-digital audio - цифровийаудіокомпакт-диск

CD-ROM - compact disk, read only memory – неперезаписуванимйкомпактдиск

CPU - central processing unit - центральнийпроцесор (ЦП)

**D**

DB - database - базаданих

DEL - delete - символвидалення

DVD - digital video disk - цифровийвідеодиск

**E**

ECC - error-correctioncode - кодзвиправленнямпомилок

EDI - Electronic Data Interchange - електроннийобмінданими

ENIAC - Electronic Numerical Integrator and Calculator - електронно-числовийінтеграторікалькулятор

**F**

FCB - file control block - блокуправлінняфайлами

FD - floppy disk - гнучкийдиск

FDD - floppy-disk drive - дисководдлягнучкихдисків

FORTRAN - скор.від fourth generation programming language - Фортран (мовапрограмуваннявисокогорівня, орієнтованийнавирішеннязавданьматематичногохарактеру)

FTR - File Transfer Protocol - протоколпередачіфайлів

**G**

GB, Gb - gigabyte - гігабайтGc - gigacycle - гігацікл

GP - general purpose - загальногопризначення

GUI - Graphical User Interface - графічнийінтерфейскористувача

**H**

HD - high density - високащільність

HDD - hard-diskdrive - дисководдляжорсткогодиска

Hi-Fi - highfidelity - високонадійний; звисокоюточністю

відтворення HF - highfrequency - високочастотний

HW, hw - hardware - апаратура, обладнання; апаратнізасоби

**I**

IAB - InternetActivitiesBoard - КеруючийрадазпитаньдіяльностіInternet

I / О-input / output - пристрійвводу-виводу

Intel - найбільшаусвітікорпораціязвиробництвамікропроцесорів (США)

Internet - IntercontinentalNetwork - системаз'єднанихком'ютернихмережсвітовогомасштабу

IP - InternetProtocol - протоколмаршрутизації

**К**

KB, Kbyte - кілобайт

К / В, KBD, kbd - keyboard - клавіатура

Кс - kilocycle - кілоциклів

KHz - kilohertz - КГц, кілогерц

**L**

LAN - local-area network - локальнамережа

LCD - liquid-crystal display - рідкокристалічнийдисплей

LSI - large-scale integration - високийрівеньінтеграції

**M**

MB, Mb - megabyte - мегабайт

M / В - motherboard - материнськаплата

МСВ - memory control block - блокуправлінняпам'яттю

MIS - management information system - управлінськаінформаційнасистема

MMCD - Multimedia Compact Disk - мультимедійнийкомпакт-диск

**N**

NAK - negative acknowledgement - непідтвердженняприйому (символ)

NetBIOS - Network Basic Input / Output System - базовасистемавводу-виводумережі

**O**

OCR - optical character reader - оптичнийпристрійсчитування (розпізнавання) знаків

OMR - optical mark reader - оптичнийпристрійзчитуваннязнаків

OR - АБО (логічнаоперація)

OS - operating system - операційнасистема

**Р**

PC - personal computer - персональнийкомп'ютер PFM - pulse-frequency

modulation - частотно-імпульснамодуляція

PIF - program information fde - інформаційнийфайлпрограми

PILOT - скор. від Programmed Inquiry Learning Or Teaching - авторізованниймовадлямашинногонавчання, розробленийДж. Старквезером (John Starkweather) вКаліфорнійськомуУніверситетів 1968 р.

**R**

RAM - random-access memory - оперативнийзапам'ятовуючийпристрій

г.с. - Remote control - дистанційнекерування r.mt.

Reverse motion - зворотнийрух ROM - read-only memory – постійнийзапам'ятовуючийпристрій

R / W - read / write - читання - запис

**S**

SATAN - Sequrity Administrator Tool for Analysing Networks - програма, призначенадляоцінкистанубезпечностікомп'ютерааболокальноїмережі, підключеногодо Internet

SCSI - Small Computer System Interface - Інтерфейсмалихкомп'ютернихсистем

SNOBOL - String-Oriented Symbolic Language - мовапрограмуваннявисокогорівня, орієнтованийнаобробкусимвольнихпослідовностей

SOM - start of message - початокповідомлення

SP - space character - символпробілу

SSI - small-scale integration - інтеграціямалогорівня

**Т**

TCP - Transmission Control Protocol - транспортнийпротокол TF - time factor - коефіцієнтчасу Turbo Pascal - швидкодіючийкомпілятордлямови Pascal (1984 р.)

**U**

ULSI - ultralarge-scale integration - інтеграціяультрависокоїрівня

UNIVAC - UNIVersal Automatic Computer - універсальнийкомп'ютер

UNIX - операційнасистема, якавикористовуєтьсявбагатьохкомп’ютера (відперсональнихдомейнфреймів)

UPS - uninterrupted power supply - безперебійнеджерело, харчування

URL - Universal Resource Locator - універсальнийпокажчикресурсів

V

VDT - visual display terminal - відеотермінал v. f. - Video frequency - відеочастоті v. f. - Velocity factor - коефіцієнтшвидкості

VLSI - very large-scale integration - інтеграціянадвисокогорівня

VR - virtual reality - віртуальнареальність v. р. - voltage regulator - регуляторнапруги

VRML - Virtual Reality Modeling Language - мовамоделірова ¬ нявіртуальноїреальності

VT - vertical tabulator - вертикальнийтабулятор

**W**

WAN - wide-area network - глобальнамережа

WWW - World Wide Web - Всесвітняінформаційнамережа

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