**INFORMATION-DEPENDENT SOCIETY**

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| **Texts**: Computer Literacy. What Is a Computer? Application of Computers.  **Grammar:** Past Simple Tense.  **Tests** |
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**1.Прочитайте текст і скажіть, як ви розумієте терміни “інформаційне суспільство” та “комп’ютерна грамотність”.**

**COMPUTER LITERACY**

Informed citizens of our information-dependent society shoud be computer-literate, which means that they should be able to use computers aseveryday problem-solving devices. They should be aware of the potential ofcomputers to influence the quality of life.  
 There was a time when only priviliged people had an opportunity tolearn the basics, called the three Rs: reading, writing, and arithmetics. Now,as we are quickly becoming an information-dependent society, it is time torestate this right as the right to learn reading, writing, and *computing.* There islittle 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 receive a subscription magazine in the post office, it is probably addressed to you by a computer. If you buy something with a bank credit card or pay a bill by check, computers help you process the information. When you check out at the counter of your store,  
a computer assists the checkout clerk and the store manager. When you visit your doctor, your schedules and bills and special services, such as laboratory tests, are prepared by computer. Many actions that you have taken or observed have much in common. Each relates to some aspect of a data processing system.

**2.Перегляньте текст ще раз. Дайте відповіді на питання і виконайте завдання, використовуючи інформацію з тексту.**  
1. What does “a computer-literate person” mean?

2. Are you awareof the potential of computers to influence your life?

3. What do the people mean by “the basics”?

4. What is the role of computers in our society?  
5. What is “computing”?

6. What is a program?

7. Prove that we all are on the way to becoming computer-literate.

8. Give examples of using computers in everyday life.

**3.Прочитайте і перекладіть слідуючі вирази.**

An information-dependent society; a computer-literate citizen; an everyday problem-solving device; to be aware; to influence the quality of life; to have an opportunity; to learn the basics; to learn computing; the most significant technical achievements; to embrace computer literacy; to prepare programs; to direct the operations of a computer; to be on the way of becoming computer-literate; to process information; to have much in common; a data processing system.

**4.Побудуйте речення в Past Simple.**

1. Many people have an opportunity to use computers. 2. There is no doubt that computers solve problems very quickly. 3. Instructions direct the operation of a computer. 4. Computers bring with them both economic and social changes. 5. Computing embraces not only arithmetics, but also computer literacy. 6. It is well-known that computers prepare labotratory tests. 7. Those persons are computer literate and think of buying a new computer. 8. They receive a subscription magazine once a month. 9. My mother is ill and visits her doctor every other day. 10. Experts know much about how to prepare programs.

**5. Вставте необхідні слова замість пропусків.**  
1. Information is given into the computer in the form of\_\_\_\_\_.  
a) ideas; b) characters; c) rules  
2. The basic function of a computer is\_\_\_\_\_ information.  
a) to switch; b) to keep; c) to process  
3. The data needed for solving problems are kept in the \_\_\_\_\_ .  
a) memory; b) input device; c) output device  
4. Inputting information into the computer is realized by means of\_\_\_\_\_ .  
a) printer; b) letters; c) diskettes  
5. A computer can carry out arithmetic-logical operations\_\_\_\_\_ .  
a) quickly; b) instantaneously; c) during some minutes  
6. Computers have become\_\_\_\_\_ in homes, offices, research institutes.  
a) commonwealth; b) commonplace; c) common room  
7. Space\_\_\_\_\_ uses computers widely.  
a) information; b) production; c) exploration  
8. Computers are used for image\_\_\_\_\_.  
a) processing; b) operating; c) producing  
9. Computers help in \_\_\_\_\_ of economy.  
a) environment; b) management; c) government  
10. Air traffic control depends on computer-\_\_\_\_\_ information.  
a) generated; b) instructed; c) combined.

**6. Підберіть до термінів, даним в лівій колонці, відповідності представлені справа.**

1. Computer a) a machine by which information is received from the computer  
2. Data b) an electronic machine that processes data under the control of a stored program  
3. Input device c) a device capable of storing and manipulating numbers, letters and characters  
4. Memory d) a disk drive reading the information into the computer  
5. Output device e) information given in the form of characters

**7. Прочитайте текст і скажіть що таке комп’ютер і його основні функції.**

**WHAT IS A COMPUTER?**

A computer is a machine with an intricate network of electronic circuits that operate switches or magnetize tiny metal cores. The switches, like the cores, are capable of being in one or two possible states, that is, on or off; magnetized or demagnetized. The machine is capable of storing and manipulating numbers, letters, and characters (symbols).  
 The basic idea of a computer is that we can make the machine do what we want by inputting signals that turn certain switches on and turn others off, or magnetize or do not magnetize the cores.  
 The basic job of computers is processing of information. For this reason computers can be defined as devices which accept information in the form of instructions, called a program, and characters, called data, perform mathematical and / or logical operations on the information, and then supply results of these operations. The program, or part of it, which tells the computers what to do, and the data, which provide the information needed to solve the problem, are kept inside the computer in a place called memory.

It is considered that computers have many remarkable powers. However, most computers, whether large or small, have three basic capabilities.  
 First, computers have circuits for performing arithmetic operations, such as: addition, subtraction, division, multiplication, and exponentiation.

Second, computers have a means of communicating with the user. After all, if we couldn’t feed information in and get results back, these machines  
wouldn’t be of much use. Some of the most common methods of inputting information are to use terminals, diskettes, disks, and magnetic tapes. The computer’s input device (a disk drive or tape drive) reads the information into the computer. For outputting information two common devices used are: a printer, printing the new information on paper, and a cathoderay-tube display, which shows the results on a TV-like screen.

Third, computers have circuits which can make decisions. The kinds of decisions which computer circuits can make are not of the type: “Who would win the war between two countries?” or “Who is the richest person in the world?” Unfortunately, the computer can only decide three things, namely: Is one number less than another? Are two numbers equal? and, Is one number greater than another?

A computer can solve a series of problems and make thousands of logical decisions without becoming tired. It can find the solution to a problem in a fraction of the time it takes a human being to do the job.

A computer can replace people in dull, routine tasks, but it works according to the instructions given to it. There are times when a computer seems to operate like a mechanical “brain,” but its achievements are limited by the minds of human beings. A computer cannot do anything unless a person tells it what to do and gives it the necessary information; but because electric pulses can move at the speed of light, a computer can carry out great numbers of arithmetic-logical operations almost instantaneously. A person can do the same, but in many cases that person would be dead long before  
the job was finished.

**8.Перегляньте текст ще раз. Дайте відповіді на питання і виконайте завдання, використовуючи інформацію з тексту.**  
1. What is a computer?

2. What are the two possible states of the switches?

3. What are the main functions of a computer?

4. In what way can we make the computer do what we want?

5. What is the basic task of a computer?  
6. In what form does a computer accept information?

7. What is a program?  
8. What are data?

9. What is memory?

10. What three basic capabilities have computers?

11. What are the ways of inputting information into the computer?

12. What is the function of an input device?

13. What devices are used for outputting information?

14. What decisions can the computer make?  
15. What are the computer’s achievements limited by?

**9. Вставте необхідні слова замість пропусків.**  
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2. The basic function of a computer is\_\_\_\_\_ information.  
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6. Computers have become\_\_\_\_\_ in homes, offices, research institutes.  
a) commonwealth; b) commonplace; c) common room  
7. Space\_\_\_\_\_ uses computers widely.  
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10. Air traffic control depends on computer-\_\_\_\_\_ information.  
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**10. Підберіть до термінів, даним в лівій колонці, відповідності, представлені справа.**

1. Computer a) a machine by which information is received from the computer  
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**DATA PROCESSING CONCEPTS**

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| **Texts:** Data Processing and Data Processing System. Advantages of Computer Data Processing. The First Electronic Computers  **Grammar:** Модальні дієслова і їхні еквіваленти. Безособові форми дієслова: Infinitive, Participle, Gerund |

1. **Прочитайте текст, скажіть як ви розумієте термін “обробка інформації”.**

**DATA PROCESSING AND DATA PROCESSING SYSTEMS**

The necessary data are processed by a computer to become useful information. In fact this is the definition of data processing. **Data** are a collection of facts — unorganized but able to be organized into useful information. **Processing**is a series of actions or operations that convert inputs into outputs.When we speak of data processing, the input is data, and the output is usefulinformation. So, we can define **data processing** as a series of actions or operations that converts data into useful information.  
 We use the term **data processing system** to include the resources that areused to accomplish the processing of data. There are four types of resources:people, materials, facilities, and equipment. People provide input to computers, operate them, and use their output. Materials, such as boxes of paper  
and printer ribbons, are consumed in great quantity. Facilities are required tohouse the computerequipment, people, and materials.

The need for converting facts into useful information is not aphenomenon of modern life. Throughout history, and even prehistory, peoplehave found it necessary to sort data into forms that were easier to understand. For example, the ancient Egyptians recorded the ebb and flow of theNile River and used this information to predict yearly crop yields. Todaycomputers convert data about land and water into recommendations to farmers on crop planting. Mechanical aids to computation were developed andimproved upon in Europe, Asia, and America throughout the 17th, 18th,  
and 19th centuries. Modern computers are marvels of an electronics technology that continues to produce smaller, cheaper, and more powerful components.

**Basic data processing operations**  
 Five basic operations are characteristic of all data processing systems:inputting, storing, processing, outputting, and controlling. They are definedas follows.

*Inputting* is the process of entering data, which are collected facts, intoa data processing system. *Storing* is saving data or information so that theyare available for initial or for additional processing. *Processing* represents performing arithmetic or logical operations on data in order to convert them intouseful information. *Outputting* is the process of producing useful information,such as a printed report or visual display.

*Controlling* is directing the manner and sequence in which all of the  
above operations are performed.  
 **Data storage hierarchy**  
 It is known that data, once entered, are organized and stored in successively more comprehensive groupings. Generally, these groupings are calleda data storage hierarchy. The general groupings of any data storage hierarchyare as follows.

1) *Characters,* which are all written language symbols: letters, numbers,and special symbols. 2) *Data elements,* which are meaningful collections ofrelated characters. Data elements are also called data items or fields. 3) *Records,* which are collections of related data elements. 4) *Files,* which are collections ofrelated records. A set of related files is called a data base or a databank.

**2.Перегляньте текст ще раз. Дайте відповіді на питання і виконайте завдання, використовуючи інформацію з тексту.**

1. What is processing?

2. What is data processing?

3. What does the termof data processing system mean?

4. What basic operations does a data processing system include?

5. What is inputting/storing/outputting information?

6. What do you understand by resources?

7. How did ancient Egyptians convert facts into useful information?

8. When were mechanical aids for computation developed?

9. What does data storage hierarchy mean?

10. What arethe general groupings of any data storage hierarchy?

1. **Перекладіть слідуючі словосполучення.**

Data resource; storage resource; network resource; security resource; system resource.

Communication facilities; data base facilities; display facilities; management facilities.

Distance control; device control; keyboard control; position control; program control.

Computer storage; laser storage; file storage; disk storage; data storage hierarchy.

Character sequence; instruction sequence; message sequence; pulse sequence.

Batch file; catalog file; data file; help file; input file; output file; menu file; user file.

Command input; data input; disk input; file input; keyboard input; program input.

**4. Вставте необхідні слова замість пропусків.**  
1. Computer d a tо \_\_\_\_\_ system frees humans from routine error-prone tasks.  
a) counting; b) computing; c) processing  
2. Computers can store vast amount of information to organize it and  
it.  
a) to travel; b) to retrieve; c) to respond  
3. The entered data can be transmitted by \_\_\_\_\_\_\_\_networks.  
a) communications; b) conversions; c) procession  
4. The possibility of\_\_\_\_\_\_ is reduced if data were correctly put into  
the data processing system.  
a) character; b) access; c) error

5. Computer data processing systems c a n \_\_\_\_\_\_\_at a fraction of  
a second.  
a) receive; b) respond; c) retrieve  
6. Computer systems are vulnerable to the entry of\_\_\_\_\_\_ data.  
a) invalid; b) invariable; c) invisible  
7. As soon as data were entered into the system correctly, the human  
is limited.  
a) computation; b) information; c) manipulation  
8. The amount of data stored on magnetic disks is constantly\_\_\_\_\_\_ .  
a) decreasing; b) increasing; c) eliminating

1. **Перекладіть речення використовуючи безособові форми дієслова.**

Data are processed to become useful information. 2. We use the term data processing to include the resources applied for processing of information. 3. Resources required for accomplishing the processing of data are called data processing system. 4. Processing is a series of operations converting inputs into outputs. 5. Facilities are required to house the computer equipment. 6. Egyptains used the information to predict crop yields. 7. Information to be put into the computer for processing should be coded into ones zeros. 8. Processing is operations on data to convert them into useful information. 9. The first machines designed to manipulate punched card data were widely used for bisiness data processing. 10. Hollerith built one machine to punch the holes and the other to tabulate the collected data.

**6.Перебудуйте речення в минулий і майбутній час.**

1. Computers can replace people in dull routine work. 2. The program is a set of instructions that may also include data to be processed. 3. Computer-controlled robots must increase the productivity of industry. 4. They can help in making different decisions. 5. The pupils may work with computers at the lessons. 6. Electric pulses can move at the speed of light. 7. Storage devices must have capacities for the input, output data and programs and for intermediate results. 8. Business minicomputers can perform to 100 million operations per second. 9. In order to solve scientific problems researchers must deal with the language of science – mathematics. 10. Programmers must write application programs in a way that computers can understand.

**7. Підберіть до термінів, даних в лівій колонці, відповідності, представлені справа.**

1. Inputting а) saving information for further processing  
2. Character b) the process of producing useful information  
3. Database с) meaningful collections of related characters  
4. Data elements d) the most common input device  
5. Controlling е) the part of the computer that receives and stores data for processing  
6. Outputting f) directing the sequence of the operations performed  
7. Memory g) a written language symbol  
8. Record h) a collection of related data elements  
9. Keyboard i) a set of related facts  
10. Storing j) the process of entering collected data into a data processing system

**8. Прочитайте текст і скажіть основні переваги комп’ютера.**

**ADVANTAGES OF COMPUTERDATA PROCESSING**

Computer-oriented data processing systems or just computer data processing systems are not designed to imitate manual systems. They should combine the capabilities of both humans and computers. Computer data processingsystems can be designed to take advantage of four capabilities of computers.

1. *Accuracy.* Once data have been entered correctly into the computercomponent of a data processing system, the need for further manipulationby humans is eliminated, and the possibility of error is reduced. Computers,when properly programmed, are also unlikely to make computational errors.Of course,computer systems remain vulnerable to the entry by humans ofinvalid data.  
2. *Ease of communications.* Data, once entered, can be transmittedwherever needed by communications networks. These may be either earthor satellite-based systems. **A** travel reservations system is an example ofa data communications network. Reservation clerks throughout the world  
may make an enquiry about transportation or lodgings and receive an almost instant response. Another example is an office communications system thatprovides executives with access to a reservoir of date, called a corporate database, from their personal microcomputer work stations.  
3. *Capacity of storage.* Computers are able to store vast amounts of information, to organize it, and to retrieve it in ways that are far beyond the capabilities of humans. The amount of data that can be stored on devices such asmagnetic disks is constantly increasing. All the while, the cost per character  
of data stored is decreasing.  
4. *Speed.* The speed, at which computer data processing systems can respond, adds to their value. For example, the travel reservations system mentioned above would not be useful if clients had to wait more than a few seconds for a response. The response required might be a fraction of a second.

Thus, an important objective in the design of computer data processingsystems is to allow computers to do what they do best and to free humansfrom routine, error-prone tasks. The most cost-effective computer data processing system is the one that does the job effectively and at the least cost. Byusing computers in a cost-effective manner, we will be better able to respondto the challenges and opportunities of our post-industrial, information-dependent society.

**9.Перегляньте текст ще раз. Дайте відповіді на питання і виконайте завдання, використовуючи інформацію з тексту.**

1. What capabilities should data-processing systems combine whendesigned?

2. What are the main advantages of computers?

3. What do youknow of computers accuracy?

4. What is the function of communicationsnetworks?

5. Give examples of a data communications network.

6. What doyou understand by capacity storage?

7. What other values of computer dataprocessing systems do you know?

8. What is an important objective in thedesign of computer data processing systems?

9. What is the most effectivecomputer data processing system?

10. What is the best way of responding tothe challenges and opportunities of our post-industrial society?

**10. Вставте необхідні слова замість пропусків.**  
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