ДОНСКОЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

УПРАВЛЕНИЕ ДИСТАНЦИОННОГО ОБУЧЕНИЯ И ПОВЫШЕНИЯ КВАЛИФИКАЦИИ

Кафедра «Иностранные языки»

Учебно-методическое пособие

по профессионально-ориентированному чтению текстов для самостоятельной работы обучающихся по дисциплине

«Английский язык»

Автор
Щербакова И.В.

Ростов-на-Дону, 2017

Аннотация

Пособие предназначено для обучающихся 1 курса по направлению подготовки 09.03.02 «Информационные системы и технологии». Методические указания включают 5 разделов, состоящих из нескольких тем и разнообразных типов заданий, направленных на развитие навыков профессионально-ориентированной устной и письменной речи. Рассчитаны на самостоятельную работу студентов, продолжающих изучать английский язык, рекомендуются для практических занятий в неязыковом вузе.

Автор

преподаватель кафедры «ИЯ» Щербакова И.В.

Оглавление

UNIT 1. COMPUTER

1. Read the text.

Words and word combinations:

1. electronic device — электронное устройство
2. to receive — получать, принимать
3. set of instructions — набор/свод инструкций
4. to carry out — выполнять
5. society — общество
6. storage — хранение
7. handling — обработка
8. transaction — операция
9. to enhance — повышать, увеличивать
10. essential — существенный
11. tool — инструмент, орудие
12. network — сеть
13. source — источник
14. analog — аналоговый
15. digital — цифровой
16. ability — способность, возможность
17. to determine — определять
18. voltage — напряжение
19. discrete operation — дискретное действие
20. to perform — выполнять, осуществлять
21. defense — оборона, защита
22. to attain — достигать
23. amount of data — объем данных
24. except — за исключением, кроме
25. processing unit — вычислительное устройство

Computer

Computer is an electronic device that can receive a set of instructions called program and then carry out them. The modern world of high technology could not be possible without computers. Different types and sizes of computers find uses throughout our society. They are used for the storage and handling of data, secret governmental files, information about banking transactions and so on.

Computers have opened up a new era in manufacturing and they have enhanced modern communication systems. They are essential tools in almost every field of research, from constructing

models of the universe to producing tomorrow's weather reports. Using of different databases and computer networks make available a great variety of information sources.

There are two main types of computers, analog and digital, although the term computer is often used to mean only the digital type, because this type of computer is widely used today. That is why I am going to tell you about digital computers.

Everything that a digital computer does is based on one operation: the ability to determine: on or off, high voltage or low voltage or — in the case of numbers — 0 or 1 or do-called binary code. The speed at which the computer performs this simple act is called computer speed. Computer speeds are measured in Hertz or cycles per second. A computer with a «clock speed» of 2000 MHz is a fairly representative microcomputer today. It is capable of executing 2000 million discrete operations per second. Nowadays microcomputers can perform from 800 to over 3000 million operations per second and supercomputers used in research and defense applications attain speeds of many billions of cycles per second.

Digital computer speed and calculating power are further enhanced by the amount of data handled during each cycle. Except two main types of computers, analog and digital there are eight generations of digital computers or processing units. The first generation was represented by processing unit Intel 8086.

The second generation central processing unit was represented by processing unit Intel 80286, used in IBM PC AT 286. The third generation is Intel 80386, used in IBM PC AT 386. The microprocessors of the fourth generation were used in computers IBM PC AT 486. There are also central processing units of the fifth generation, used in Intel Pentium 60 and Intel Pentium 66, central processing units of the sixth generation, used in computers Intel Pentium 75, 90,100 and 133. Few years ago appeared central processing units of seventh and eighth generations. They are much more powerful and can perform from 2000 to over 3000 million operations per second.

2. Read the text again and find out if the following statements are true or false:

1. The modern world of high technology could be possible without computers.
2. Few years ago appeared central processing units of seventh and eighth generations.

3. Digital computer speed and calculating power are not further enhanced by the amount of data handled during each cycle.

4. Different types and sizes of computers find uses throughout her society.

5. The first generation is Intel 80386, used in IBM PC AT 386.

6. Using of different databases and computer networks make available a great variety of information sources.

3. Answer the following questions:

1. What is computer?
2. What is the main purpose of all computers?
3. Where are computers used?
4. What is the index of computer speed?
5. What speeds do modern computers have?
6. How many generations of digital computer are there?
7. What is the first generation processing unit?

4. Give the English equivalents for:

Компьютеры открыли новую эру, цифровая вычислительная машина, объем данных, второе поколение, центральные вычислительные устройства шестого поколения, процессор, микрокомпьютер, высокое напряжение, цифровые вычислительные машины.

5. Match the English words to their Russian meanings:

1. digital computer speed	a) центральные блоки обработки
2. calculating power	b) необходимые инструменты
3. high technology	c) электронное устройство
4. banking transactions	d) секретные правительственные файлы
5. discrete operation	e) цифровая вычислительная скорость
6. central processing units	f) тактовая частота
7. essential tools	g) мощность расчета
8. secret governmental files	h) банковские операции
9. clock speed	i) высокая технология
10. electronic device	j) дискретное действие

6. Choose the correct form of the verb:

1) The third generation … Intel 80386.

a) are b) is c) am

2) The modern world of high technology … be possible without computers.

a) could not b) could c) can not

3) That is why I … you about digital computers.

a) is going to tell b) am going to tell

c) am going to telling

7. Translate the sentences from English into Russian.

Digital computer speed and calculating power are further enhanced by the amount of data handled during each cycle. Except two main types of computers, analog and digital there are eight generations of digital computers or processing units. The first generation was represented by processing unit Intel 8086.

UNIT 2. THE USE OF COMPUTERS

1. Read the text.

Words and word combinations:

1. to extend – продлевать, расширять
2. existing – существование
3. within – в пределах
4. to utilize – использовать, перерабатывать
5. to replace – ставить, заменять

The use of computers

Just as television has extended human sight across the barriers of time and distance, so the computers extend the power of the human mind across the existing barriers.

They save a lot of time. They seldom make mistakes. It's much faster and easier to surf the Internet than to go to the library.

In the last 10 years or so, most large businesses have become completely depended on computers for storing and looking information, for writing and calculating financial and mathematical information.

Computers within a single office or building may be connected, and they there fore form a network. Users of computers on a network can send messages to each other utilizing the same collections of data or information. In many offices and organizations computer message have replaced messages written on paper, and they are now called e-mail or electronic mail.

E-mail is a great invention, too. It's faster than sending a letter and cheaper than sending a telegram.

E-mail saves paper and the work of moving paper from one place to another. Workers can send and receive e-mail without leaving their desks and their desktop computers. But computers have some disadvantages. Computers can get viruses. Sometimes the wrong people can make use of the information available in the wrong way. Computers become out of date very quickly, they need to be replaced.

2. Read the text again and find out if the following statements are true or false:

1. In many organizations computer message have replaced messages written on paper, and they are called e-mail or electronic mail.

2. Computers can not get viruses.
3. They save a little time.
4. Computers become out of date very quickly, they need to be replaced.
5. Users of computers on a network can send messages to each other utilizing the same collections of data or information.
6. E-mail does not save paper and the work of moving paper from one place to another.

3. Answer the following questions:

1. What advantages of computer do you know?
2. Why have most large businesses become completely depended on computers?
3. How do we use the e-mail?
4. What disadvantages of computers do you know?

4. Give the English equivalents for:

Расширять способности человеческого мозга, существующие барьеры, экономить время, делать ошибки, полностью зависит от компьютера, просматривать информацию, посылать сообщения, заменять сообщения, великое изобретение, не покидая своего места, посылать и получать электронную почту, использовать информацию неправильно, устаревать, нуждаться в замене.

5. Choose the correct form of the verb:

1) Computers … viruses.
a) can get b) can got c) can getting
2) E-mail … paper and the work of moving paper from one place to another.
a) save b) is saving c) saves
3) Computers ... some disadvantages
a) have b) am having c) haves

6. Translate the sentences from English into Russian.

E-mail saves paper and the work of moving paper from one place to another. Workers can send and receive e-mail without leaving their desks and their desktop computers. But computers have some disadvantages. Computers can get viruses. Sometimes the wrong people can make use of the information available in the wrong way. Computers become out of date very quickly, they need to be replaced.

UNIT 3. INTERNET

1. Read the text:

Words and word combinations:

1. a network – нейронная сеть
2. to embrace – соединять
3. to survive – пережить
4. a nuclear war – ядерная война
5. a path – путь
6. a single route – единственный маршрут
7. a packet switching – пакетная коммутация
8. owing to – вследствие, благодаря
9. a nuclear explosion – ядерный взрыв
10. to knock out – выключать
11. a fairy accurately – сказочно точно
12. an access – доступ
13. a reliable alternative – надежная альтернатива
14. a fee – плата
15. the wireless station – радиостанция
16. drastically – решительно
17. to transmit – передавать
18. constantly – постоянно
19. to intercept – прерывать
20. encoding – зашифрованный
21. to conduct transaction – вести дела
22. host – множество

The Internet

The Internet, a global computer network which embraces millions of users all over the world, began in the United States in 1969 as a military experiment. It was designed to survive a nuclear war. Information sent over the Internet takes the shortest path available from one computer to another. Because of this, any two computers on the Internet will be able to stay in touch with each other as long as there is a single route between them.

This technology is called packet switching. Owing to this technology, if some computers on the network are knocked out (by a nuclear explosion, for example), information will just route around them. One such packet-switching network already survived a war. It

was the Iraq computer network, which was not knocked out during the Gulf War.

Most Internet host computers (more than 50%) are in the United States, while the rest are located in more than 100 other countries. Although the number of host computers can be counted fairy accurately, nobody knows exactly how many people use the Internet. There are millions and their number is growing by thousands each month world-wide.

The most popular Internet service is e-mail. Most of people, who have access to the Internet, use the networks only for sending and receiving e-mail messages. However, other popular services are available on the Internet: reading news, using the World Wide Web, telnet etc.

2. Read the text again and find out if the following statements are true or false:

1. Most of people, who have access to the Internet, don't use the networks only for sending and receiving e-mail messages.
2. Although the number of host computers can be counted fairy accurately, nobody knows exactly how many people use the Internet.
3. There are millions and their number is growing by thousands each week world-wide.
4. The Internet began in the United States in 1969 as a military experiment.
5. The global computer network, which embraces millions of users all over the world, is the Internet.

3. Answer the questions:

1. What is the Internet?
2. Where did the Internet begin?
3. Why was the Internet designed?
4. What is the most popular Internet service?
5. How do people use the Internet?
6. How can the commercial users communicate over the Internet?

4. Give the English equivalents for:

Глобальная компьютерная сеть, ядерная война, самый короткий путь, пакетная коммуникация, выключать, самая популярная служба Интернета, иметь доступ в Интернет, посылать электронную почту, решительное увеличение, передавать сообщение,

постоянно перехватывать, зашифрованные программы, вести сделки по Интернету.

5. Match the English expressions to their Russian equivalents:

1. a nuclear explosion	a) глобальная компьютерная сеть
2. to send a message	b) доступ в Интернет
3. a packet-switching network	c) единственный маршрут
4. owing to	d) надежная альтернатива
5. a global computer network	e) ядерный взрыв
6. a access to the Internet	f) коммутация пакетов сети
7. a reliable alternative	g) вести сделки по Интернету
8. to intercept	h) передавать сообщение
9. to conduct transactions on the Internet	i) прерывать
10. a single route	j) вследствие, благодаря

6. Choose the correct form of the verb:

1) The first "hackers" … students at the Massachusetts Institute of Technology.

a) am b) were c) was

2) Eventually they ... a group and ... the first set of hacker's rules.

a) formed, created b) did not form, created

c) form, create

3) All information ... free.

a) should was b) should not been

c) should be

4) Computers ... your life for the better.

a) can changed b) cannot change

c) can change

7. Translate the sentences from English into Russian.

Most Internet host computers (more than 50%) are in the United States, while the rest are located in more than 100 other countries. Although the number of host computers can be counted fairy accurately, nobody knows exactly how many people use the Internet. There are millions and their number is growing by thousands each month world-wide.

UNIT 4. DEVELOPMENT OF ELECTRONICS

1. Read the text:

Words and word combinations:

1. performance— рабочая характеристика; параметры; производительность; быстродействие
2. to predict — прогнозировать
3. capability — способность; возможность
4. branch of science — область науки
5. to embrace— охватывать
6. circuit assembly — сборка схемы
7. film technique — пленочная технология
8. invisible to unaided eye — невидимый невооруженному глазу
9. to react — реагировать
10. speed of response — скорость реакции (отклика)
11. advantage / disadvantage — достоинство, преимущество / недостаток
12. benefit — выгода, польза; помогать, приносить пользу
13. to result from — возникать, происходить в результате
14. packing density — плотность упаковки
15. small-scale integrated circuit — малая интегральная схема (МИС)
16. medium-scale 1C — средняя интегральная схема (СИС)
17. large-scale 1C — большая интегральная схема (БИС)
18. very-large-scale 1C — сверхбольшая интегральная схема (СБИС)
19. fineline — прецизионный; с элементами уменьшенных размеров
20. transmission line — линия передачи
21. waveguide — волновод
22. to emerge — появляться, возникать
23. to displace — перемещать, смещать
24. mode — вид, метод, способ; режим работы
25. pattern — шаблон, образец; образ, изображение
26. power — мощность, энергия, питание; производительность, быстродействие; способность, возможность

Development of electronics

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

Today it is difficult to imagine our life without electronics. It surrounds us everywhere. Electronic devices are widely used in scientific research and industrial designing, they control the work of plants and power stations, calculate the trajectories of space-ships and help the people discover new phenomena of nature. Automatization of production processes and studies on living organisms became possible due to electronics.

The invention of vacuum tubes at the beginning of the 20th century was, the starting point of the rapid growth of modern electronics. Vacuum tubes assisted in manipulation of signals. The development of a large variety of tubes designed for specialized functions made possible the progress in radio communication technology before the World War II and in the creation of early computers during and shortly after the war.

The transistor invented by American scientists W. Shockly, J. Bardeen and W. Brattain in 1948 completely replaced the vacuum tube. The transistor, a small piece of a semiconductor with three electrodes, had great advantages over the best vacuum tubes. It provided the same functions as the vacuum tube but at reduced weight, cost, power consumption, and with high reliability. With the invention of the transistor all essential circuit functions could be carried out inside solid bodies. The aim of creating electronic circuits with entirely solid-state components had finally been realized. Early transistors could respond at a rate of a few million times a second. This was fast enough to serve in radio circuits, but far below the speed needed for high speed computers or for microwave communication systems.

The progress in semiconductor technology led to the development of the integrated circuit (1C), which was discovered due to the efforts of John Kilby in 1958. There appeared a new field of science — integrated electronics. The essence of it is batch processing. Instead of making, testing and assembling discrete components on a chip one at a time, large groupings of these components together with their interconnections were made all at a time. 1C greatly reduced the size of devices, lowered manufacturing costs and at the same time they provided high speed and increased reliability.

2. Read the text again and find out if the following statements are true or false:

1) Vacuum tubes did not assist in manipulation of signals.

2) Nowadays our life it is difficult to imagine without electronics.

3) The transistor had great advantages over the best vacuum tubes.

4) With the invention of the transistor all essential circuit functions could not be carried out inside solid bodies.

5) There appeared an old field of science — integrated electronics.

6) Early transistors could not respond at a rate of a few million times a second.

3. Answer the questions:

1. What is electronics?
2. Can you imagine modern life without electronics?
3. Where are electronic devices used?
4. What was the beginning of electronics development?
5. What made the progress in radio communication technology possible?
6. What is the transistor?
7. What aim was realized with the invention of the transistor?
8. When were integrated circuits discovered?
9. What advantages did the transistors have over the vacuum tubes?

4. Give the English equivalents for:

Прикладная физика; передача и прием информации; поток электронов; трудно представить; научные исследования; промышленное проектирование; вычислять траекторию космических кораблей; обнаруживать явления природы; благодаря электронике; отправная точка; способствовать управлению сигналами; быстрый рост; разнообразие ламп; создание первых компьютеров; полностью заменил; полупроводниковый кристалл; уменьшить вес; сократить стоимость; потребление электроэнергии; высокая надежность; твердотельные компоненты; довольно быстро... но гораздо ниже; высокоскоростной компьютер; микроволновые системы связи; полупроводниковая технология; область науки; интегральная схема; пакетная обработка; сборка дискрет-

ных компонентов на кристалле; снизить производственные затраты; обеспечить высокую скорость.

5. Choose the correct form of the verb:

1) The program ... by a boy.
a) was write b) was written
c) were written
2) The computer ... to my brother by my mom.
a) were bought b) was buy c) was bought
3) Most of people ... the networks only for sending and receiving e-mail messages.
a) use b) did not use c) uses

6. Match the English words to their Russian meanings:

1. very-large-scale	a) большая интегральная схема
2. integrated electronics	b) сборка схемы
3. film technique	c) невидимый невооруженному глазу
4.large-scale	d) сборка дискретных компонентов на кристалле
5. semiconductor technology	e) интегрированная электроника
6. circuit assembly	f) пленочная технология
7. application of electronic circuits	g) сверхбольшая интегральная схема
8. the Assembly of discrete components on a chip	h) способствовать управлению сигналами
9. invisible to unaided eye	i) применение электронных систем
10. to facilitate the control signals	j) полупроводниковые технологии

7. Complete the following sentences using the text above:

1) It is difficult to imagine... ... .
2) The transistor is ... ...
3) Transistors could respond ....
4) The operation ... ...
5) Electronic devices ... .

8. Translate the sentences from English into Russian.

The invention of vacuum tubes at the beginning of the 20th century was, the starting point of the rapid growth of modern electronics. Vacuum tubes assisted in manipulation of signals. The development of a large variety of tubes designed for specialized functions made possible the progress in radio communication technology before the World War II and in the creation of early computers during and shortly after the war.

UNIT 5. SCIENTIFIC AND TECHNOLOGICAL PROGRESS

1. Read the text:

Words and word combinations:

1. to accelerate – ускорить
2. to investigate – исследовать
3. a universe – вселенная
4. to apply – обращаться
5. to improve – улучшать
6. an ancestor – предок
7. a combustion – сгорание
8. a miracle – чудо
9. rapid – быстрый
10. splitting – сильная
11. a conquest – покорение
12. a mankind – человечество
13. to overcome – преодолеть
14. a gravity – серьезность
15. to reverse – переставлять
16. to arouse – вызывать
17. a concern – интерес
18. a treat – развлечение
19. a courage – смелость
20. to disclose – обнаруживать

Scientific and Technological Progress

It's difficult to overestimate the role of science and technology in our life. They accelerate the development of civilization and help us in our co-operation with nature. Scientists investigate the laws of the universe, discover the secrets of nature, and apply their knowledge in practice improving the life of people.

Let's compare our life nowadays with the life of people at the 'beginning of the 20th century. It has changed beyond recognition. Our ancestors hadn't the slightest idea of the trivial things created by the scientific progress that we use in our every day life. I mean refrigerators, TV sets, computers, microwave ovens, radio telephones, what not. They would seem miracle to them that made our life easy, comfortable and pleasant. On the other hand, the great inventions of the beginning of the 20th century, I mean radio, aeroplanes,

combustion and jet engines have become usual things and we can't imagine our life without them.

A century is a long period for scientific and technological progress, as it's rather rapid. Millions of investigations, the endless number of outstanding discoveries have been made. Our century has had several names that were connected with a certain era in science and technology. At first it was called the atomic age due to the discovery of the splitting of the atom. Then it became the age of the conquest of space when for the first time in the history of mankind a man overcame the gravity and entered the Universe. And now we live in the information era when the computer network embraces the globe and connects not only the countries and space stations but a lot of people all over the world. All these things prove the power and the greatest progressive role of science in our life.

But every medal has its reverse. And the rapid scientific progress has aroused a number of problems that are a matter of our great concern. These are ecological problems, the safety of nuclear power stations, the nuclear war threat, and the responsibility of a scientist.

But still we are grateful to the outstanding men of the past and the present who have courage and patience to disclose the secrets of the Universe.

2. Give the English equivalents for:

Ускорять развитие цивилизации, исследовать законы вселенной, изменяться до не узнавания, казаться чудом, век завоевании космоса, впервые в истории человечества, выходить во вселенную, пробуждать большое количество проблем, причина интереса, иметь храбрость и терпение, обнаружить секреты.

3. Complete the following sentences using the text above:

1) We live in the information ... ...
2) Scientists investigate the ... ...
3) These are ecological ....
4) It became the age of ... ...
5) We are grateful to ....

4. Answer the questions:

1) What accelerates the development of civilization and helps us in our cooperation with nature?

2) How did our life change from the beginning of the 20th century?

3) What names does our century have?

4) What outstanding discoveries in our century do you know?

5) What are the problems of the rapid scientific progress?

5. Choose the right variant:

1) ... ... a lot of computers all over the world.

a) There were b) There are

c) There is d) There was

2) ... ... ecological problem.

a) There are b) There is

c) There were d) There was

3) ... . refrigerators, TV set, computers, microwave oven, radio telephones.

a) There are b) There is

c) There were d) There was

4) ... . refrigerator, TV sets, computer, microwave ovens, radio telephone.

a) There are b) There is

c) There were d) There was

5) ... . names that were connected with a certain era in science and technology.

a) There are b) There is

c) There were d) There was

6. Match the English words to their Russian meanings:

1. the scientific progress	a) реактивные двигатели
2. the splitting of the atom	b) великие изобретения
3. the conquest of space	c) атомный век
4. the gravity	d) бесконечный ряд
5. investigation	e) человечество
6. a mankind	f) покорение космоса
7. the great inventions	g) научный прогресс
8. the atomic age	h) гравитация
9. jet engines	i) расщепление атома
10. the endless number	j) исследование

7. Translate the sentences from English into Russian.

Let's compare our life nowadays with the life of people at the 'beginning of the 20th century. It has changed beyond recognition. Our ancestors hadn't the slightest idea of the trivial things created by the scientific progress that we use in our every day life. I mean refrigerators, TV sets, computers, microwave ovens, radio telephones, what not. They would seem miracle to them that made our life easy, comfortable and pleasant. On the other hand, the great inventions of the beginning of the 20th century, I mean radio, aeroplanes, combustion and jet engines have become usual things and we can't imagine our life without them.

LIST OF LITERATURE AND THE INTERNET RESOURCES

1. http://festival.1september.ru/articles/212547/
2. http://www.alleng.ru/engl-top/001.htm
3. http://www.interactive-english.ru/testy-po-grammatike/239-continuous-test/