Сборник текстов для чтения и заданий по английскому языку для студентов 1 курса магистратуры Института экономики и предпринимательства, обучающихся по направлению подготовки «Прикладная информатика»

Практикум

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Настоящий практикум предназначен для студентов 1 курса магистратуры, обучающихся по направлению «Прикладная информатика», и является специализированным дополнением к общему базовому курсу английского языка. Пособие включает в себя 5 модулей, каждый модуль разделён на 5 секций: getting started, reading, word study, grammar и writing. Все тексты, включённые в пособие, связаны с информационными технологиями, предлагают студентам специализированную лексику и выражения. Грамматические разделы имеют своей целью повторение некоторых правил английского языка с рядом упражнений, в то время как задания на письмо позволяют студентам развивать навыки написания разного типа писем и эссе.

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Module 1: Computers

1.1 Getting started

I. Work in groups. Share information on how you use computers in your free time. Compare answers with other groups and make a list of uses for your class.

II. How do you think these professions might use computers? Compare your answers with others in your group.

Architects   interior   designers
Farmers   landscape gardeners
Musicians   rally drivers   sales people

1.2 Reading

Find the answers to these questions in the following text:
1 Name some types of devices that use 'computers on a chip'.
2 What uses of handheld computers are mentioned in the text?
3 What are the benefits of using computers in security systems, cars and phones?
4 What smart devices are mentioned in the text?
5 What are smart cards used for?
6 What are the advantages of multimedia?
7 What can medical expert systems do?
8 How can computers help the disabled?
9 What types of computing systems are made available to people in remote locations using electronic classrooms or boardrooms?
10 What aspects of computing can people determine?

The ability of tiny computing devices to control complex operations has transformed the way many tasks are performed, ranging from scientific research to producing consumer products. Tiny 'computers on a chip' are used in medical equipment, home appliances, cars and toys. Workers use handheld computing devices to collect data at a customer site, to generate forms, to control inventory, and to serve as desktop organizers.

Not only is computing equipment getting smaller, it is getting more sophisticated. Computers are part of many machines and devices that once required continual human in supervision and control. Today, computers in security systems result in safer environments, computers in cars improve energy efficiency, and computers in phones provide features such as call forwarding, call monitoring, and call answering.

These smart machines are designed to take over some of the basic tasks previously performed by people; by so doing, they make life a little easier and a little more pleasant. Smart cards store vital information such as health records, drivers'

licenses, bank balances, and so on. Smart phones, cars, and appliances with built in computers can be programmed to better meet individual needs.

A smart house has a built-in monitoring system that can turn lights on and off, open and close windows, operate the oven, and more.

With small computing devices available for performing smart tasks like cooking dinner, programming the DVD recorder, and controlling the flow of information in an organization, people are able to spend more time doing what they often do best – being creative. Computers can help people work more creatively.

Multimedia systems are known for their educational and entertainment value, which we call 'edutainment'. Multimedia combines text with sound, video, animation, and graphics, which greatly enhances the interaction between user and machine and can make information more interesting and appealing to people. Expert systems software enables computers to 'think' like experts, so medical diagnosis expert systems, for example, can help doctors pinpoint a patient's illness, suggest further tests, and prescribe appropriate drugs.

Connectivity enables computers and software that might otherwise be incompatible to communicate and to share resources. Now computers are proliferating in many areas and networks and are available for people to access data and communicate with others, personal computers are becoming interpersonal PCs. They have the potential to significantly improve the way we relate to each other. Many people today telecommute – that is, use their computers to stay in touch with the office while they are working at home. With the proper tools, hospital staff can get a diagnosis from a medical expert hundreds or thousands of miles away. Similarly, the disabled can communicate more effectively with others using computers.

Distance learning and videoconferencing are concepts made possible with the use of an electronic classroom or boardroom accessible to people in remote locations. Vast databases of information are currently available to users of the Internet, all of whom can send mail messages to each other. The information superhighway is designed to significantly expand this interactive connectivity so that people all over the world will have free access to all these resources.

People power is critical to ensuring that hardware, software, and connectivity are effectively integrated in a socially responsible way. People – computer users and computer professionals – are the ones who will decide which hardware, software, and networks endure and how great an impact they will have on our lives. Ultimately people power must be exercised to ensure that computers are used not only efficiently but in a socially responsible way.
(See references 1)

1.3 Word Study

I. Find in the text English equivalents for the following words and expressions:
Крошечный, сложный, перенимать/брать на себя, встроенный, поток информации, точно диагностировать, удалённые территории.

II. Give Russian equivalents for the following words and expressions from the text and use them in the sentences of your own:
Consumer products, desktop organisers, energy efficiency, meet individual needs, enhance, incompatible, distance learning.

III. Paraphrase or explain in your own words the meaning of the following words and expressions:
Collect data, continual human supervision, vital information, smart tasks, interaction, telecommute, impact.

1.4 Grammar

I. Revise the usage of Past Simple and Present Perfect. Study the table.

Present Perfect	Past Simple
Study these examples: - I'*ve organized* the photos into themes. - I'*ve just added* a sound track. We use the Present Perfect to describe past actions with present relevance. The focus is on the result. It is often used with expressions such as *just, yet, already, ever* etc.	Study these examples: - I *made* one CD for Mary's birthday *last* week. - We *tried* it out a month *ago*. We use the Past Simple to describe completed actions in the past. The focus is on WHEN the action was done. It is often used with time expressions such as *last, ago, in 2000* etc.

II. Put the tenses in this dialogue in the correct form: Past Simple or Present Perfect.
A: What (do) today?
B: I (work) on my project. I (search) the Web for sites on digital cameras.
A: (find) any good ones?
B: I (find) several company sites – Sony, Canon,… but I (want) one which (compare) all the models.
A: Which search engine (use)?
B: MyWeb mostly. (ever use) it?
A: Yes, I (try) it but I (have) more luck with AskReeves. Why don't you try it?
B: I (have) enough for ony night. I (spend) hours on that project.
A: I (not start) on mine yet.
B: Yeah? I bet you (do) it all.

III. Use the dialogue above as a model to discuss how you used your computer the last time.

IV. Work in pairs. Find out this information from your partner. Make sure you use the correct tense in your questions. For example:

Download music from the Internet   [what site]
A: Have you ever downloaded music from the Internet? What site did you use?
1 Send a video email attachment   [who to, when]
2 Fit an expansion card   [which type]
3 Replace a hard disc   [what model]
4 Fix a printer fault   [what kind]
5 Make your own website   [how]
6 Have a virus   [which virus]
7 Watched TV on the Internet   [which station]
8 Write a programme   [which language]

1.5 Writing

I. Write three more questions on the text in the module to ask in the class.

II. Write a letter to your friend about how you use computers in your study and in your free time.

Module 2: People Who Work With Computers

2.1 Getting started

I. In pairs make a list of professions which require computer work.

II. What do the following people in computing do? Discuss with your partner.
Webmaster   Help-desk troubleshooter
Applications programmer   Security specialist
Systems programmer

2.2 Reading

Find the answers to these questions in the following text:
1 What advice is given for someone who is stuck in a computing support job?
2 What questions should you ask yourself if you are thinking of getting extra training?
3 What computer programme is mentioned in the text?
4 Name two ways of studying that are mentioned in the text?
5 What two factors will be affected by your level of experience?
6 Why is it important to become used to answering exam questions?
7 What factors help you decide whether the course will be suitable or cost effective?
8 What happens if you don't upgrade your certification?

Suppose you're a support engineer. You're stuck in a job you don't like and you want to make a change. One way of making that change is to improve your marketability to potential employers by upgrading your skill-set. If you're going to train yourself up however, whose training should you undertake? If you need certificates, whose certificates should they be? Even if you get those certificates, how certain can you be that your salary will rise as a result? One solution is the range of certifications on offer from Microsoft.

Microsoft offers a large array of certification programmes aimed at anyone from the user of a single program such as Microsoft Word, to someone who wants to become a certified support engineer. There are a myriad of certificates to study for too. If you're the proud holder of any of those qualifications, then you're entitled to call yourself a Microsoft Certified Professional (MCP).

Once you've decided which track you want to take, you should consider just how qualified you already are in terms of experience and knowledge. Will you need to go and take some courses with a training company, or are you the type who can make good use of self-study materials? How much time do you genuinely have to devote towards this? Will your employer pay for your course? Will it grant you leave to go and do the course – assuming you can find one – on either a full-time or part-time basis?

The key question here is experience. This will not only influence the amount of work you'll have to do to get up to speed for the exams, it could also mean the difference between passing or failing the exam.

While you're busy learning all you need to know for your certification, the practice exams are an absolute godsend. They show you the type of questions you'll encounter, and they familiarise you with the structure of the exam. This is essential if you want to pass: the exams have time limits, and you need to get used to answering the requisite number of questions within the allotted time. It's as simple as that.

If you decide a training course will help you out, don't let the title of a course alone convince you that it will be suitable or cost effective. Find out exactly what the course offers and whether there are pre-requisites for attendants. You should also find out what the training company is prepared to do if attendants don't have the minimum knowledge necessary to be on the course.

As exams are replaced by 'updated' ones, you need to upgrade your certification to stay current. Ultimately it's your responsibility to make sure you stay up to date. If you don't, you lose your certification until you take an update.

As a support engineer, you get the satisfaction of knowing that you passed a tough test, and the happy knowledge that your network manager is sweating a bit over the fact that you could be head-hunted at any time.

(See references 2)

2.3 Word Study

I. Find in the text English equivalents for the following words and expressions:

Изменить ситуацию, соответствие требованиям рынка, решение, направлен на, в чистом виде, предполагая, столкнуться, привыкать, быть актуальным.

II. Give Russian equivalents for the following words and expressions from the text and use them in the sentences of your own:

Support engineer, upgrade, a large array, to take a track, full-time/part-time, familiarize with, allotted time, upgrage your certification, a tough test.

III. Paraphrase or explain in your own words the meaning of the following words and expressions:

Be stuck in a job you don't like, undertake, range of certifications, be entitled to, make good use of, an absolute godsend, requisite, cost effective, be head-hunted.

2.4 Grammar

I. Look at the list of the professions given. For which of them the following statements are true? More than one career may match each statement.

A. Programming expert	B. Computer Consultant	C. IT Manager

1 You may work for only a few days or a week for a company.

2 It's a good idea to buy books on languages such as C++.

3 You are responsible for developing and implementing the software a company needs to run its operations.

4 You need to be able to break down a problem into a number of smaller tasks.

5 It's worth paying for a training course if you get serious about this career.

6 Microsoft Certified Systems Engineer is a useful qualification for your career.

7 Your objective is to become self-employed.

8 It's important you have the right personality to lead a team.

II. Speaking about requirements (need to, have to, must, be + essential, critical). Study the following notes.

We can describe requirements for particular jobs in several ways:
1 You need to be able to empathise with the person at the other end of the phone.
2 IT managers have to take responsibility for budgets.
3 You must be interested in your subject.
4 You must have worked for at least two years in systems analysis.
5 Experience with mainframes is essential/critical.

Things which are not requirements can be described like this:
6 You don't need to have a degree in computing science.

Need can also be treated as a modal verb and used in the negative:
7 You needn't have a degree in computing science.

Have to is an ordinary verb. Its negative form is made in the usual way:
8 You don't have to be an expert in everything.

Mustn't has a quite different meaning. It means it is important not to do something. It is used for warnings, rules and strong advice:

9 You mustn't make unauthorized copies of software.

III. Fill in the blanks with the appropriate form of the verbs: _need to, have to_ and _must_. The statements should make sense. More than one answer is possible.

1 Technical qualifications ……… to be renewed at intervals to ensure they do not go out of date.
2 You ……… become an expert in too narrow a field.
3 You ……… to have good communication skills to become an IT manager.
4 You ……… be an expert in hardware to become a programmer.
5 You ……… have worked with IBM mainframes for at least two years.
6 You ……… be able to show leadership.
7 You ……… have a degree but it ……… be in computing science.
8 You ……… to have experience in JavaScript.
9 You ……… be able to use C++.
10 These days you ……… study BASIC.

IV. Study the given requirements for different jobs. Use modals and modal-like expressions to describe them.

Webmaster	Programmer	Systems Manager Programmer
- strong Unix experience - able to use HTML, DHTML and Java Script - knowledge of Shell Scripts	- 3 yrs exp. SAP Basic Technical Environment - team player with strong analytical and problem-solving skills - ability to communicate issues anв solutions and manage time effectively	- technical specialist - min. 2 yrs work in systems programming - plus exp. of Netview/ automation design and support
Cisco Technician	**IS Manager**	**Support Analyst**
- CCNA qualified - excellent skills in the surrounding technologies - min. 2 yrs of work in support	- knowledge of NT and Netware - experience of ERP systems implementation - very strong managerial skills	- IBM MVS support technician - 1 yr exp. of VTAM, NCP, SSP, NPM, IBM 3745-900 hardware - authorized to work in the EU

2.5 Writing

I. Write three more questions on the text in the module to ask in the class.

II. Write a letter to your manager asking to allow you leave work an hour earlier for a computer course. Explain that the course will last for two weeks and give your reasons for studying.

Module 3: Developments in IT

3.1 Getting Started

I. Discuss in pairs what you think is the most significant development in IT. Explain why.

II. Study these predictions about developments in IT from 1997. Which, if any, have come true? How likely are the others to come true? Discuss in pairs.

2000 – Electronic newspaper
2002 – Multiple channels of more than 100 Gigabits per second on single fibre
2003 – Hydraulic chair for VR games
2005 – Personal wearable health monitor
2005 – Intranets dominate over Internet
2006 – Fire fighting robots that can find and rescue people
2007 – Terabits per second on optical fibres over distance
2008 – Visual computer personalities on screens
2010 – Robotic devices within blood vessels
2012 – Robotic pets
2025 – Artificial brain implants

3.2 Reading

Find the answers to these questions in the following text:
1 What frustrating problem does Bluetooth solve?
2 Who first developed Bluetooth?
3 In what ways is Bluetooth particularly suited to portable systems?
4 What do Bluetooth devices share with microwave ovens?
5 List some devices that are suitable for use with Bluetooth.
6 Why is Bluetooth suitable for use on aeroplanes?
7 What factors provide security for Bluetooth communications?
8 How is the output power level of the transmitter set?
9 Why is there no collision detection in the Bluetooth specification?
10 Why are all devices on a piconet synchronised and controlled by a master device?
11 What are the consequences of Bluetooth having the following characteristics?
    a. It is good at avoiding conflicting signals from other sources.
    b. The transmitter output level is kept as low as possible.
    c. It uses power-saving modes when devices aren't transmitting.

<div align="center">Bluetooth</div>

As portable computing devices get smarter and more capable, connectivity frustrations increase.

This is where Bluetooth comes in. The brainchild of Ericsson, IBM, Intel, Nokia and Toshiba, Bluetooth is a microwave high-speed wireless link system that's

designed to work with portable equipment. To that end, it's low power, very small and very low cost. It uses the same frequencies as existing radio LANs (and, incidentally, microwave ovens) to create a secure 1 Mbit/s link between devices within 10m of each other. These devices can be laptops, PDAs, cellphones, wired telephone access points, even wrist watch devices, headphones, digital cameras and so on. With them, your notebook PC will be able to access your cellular phone and thus the Internet – without your having to take the phone out of your pocket. Files can be exchanged and communications set up tor voice and data between just about any device capable of handling the information.

Bluetooth operates in the unlicensed SM (Industrial, Scientific and Medical) and at 2.45 GHz, which is globally available for products. There's 89 MHz of bandwidth allocated here, and since Bluetooth is very low power, it actually radiates less than most national and international standards allow non-transmitting devices to leak as part of their normal operation. This is key, as it allows the technology to operate without restriction on aircraft.

As befits their status as radio frequency experts, Ericsson and Nokia developed the RF side of Bluetooth. The link works in a similar way to the IFEE 802.11 wireless networking system, with a packet-switching protocol based on fast-frequency hopping direct sequence spread spectrum. In other words, it constantly switches channel to avoid interference. It changes frequency 1,600 times a second through 79 frequency bands. It's expected that this will be so good at avoiding conflicting signals from other sources that the transmission power can be kept very low.

Security is taken care of through the frequency hopping and 40-bit encryption. As the system uses radio, it can work through some barriers – briefcases, shirt pockets and desktops, for example – but it won't carry through office buildings. The power level of the transmitter can be varied, with feedback from the remote side of the link used to set the output to the lowest level commensurate with error-free operation. This saves power and increases the usable density of devices. The device can operate at up to 1mW (an optional power amplifier can increase this to 100 mW) and the whole lot consumes between 8 mA and 30 mA at 2.7 V. Various power saving modes can be used when a device isn't transmitting, trailing oil speed of response for battery life. These work with current levels between 300 pA and 60 pA.

Within the 10m radius of a unit, up to 10 independent full-speed piconets can operate, with bandwidth reduced proportionately if more than this is in use. Each can handle up to eight devices, and can be further subdivided into separate services: 432 Kbit/s full duplex data, 72l/56 Kbit/s asymmetric duplex, or 384 Kbit/s third generation GSM. Each channel can also support three 64 Kbit/s full-duplex voice channels. An optional variation in modulation technique would double the basic data rate to 2 Mbit/s.

Power consumption and cost were very significant factors in Bluetooth's design, and it was decided not to make the system a fully-fledged LAN. As a result, there's no collision detection. All devices on a piconet are synchronized to a master device and are controlled by it to prevent simultaneous so operation on the same

frequency. Any device can be a master, and is elected dynamically when the link starts up.

The standard is open and royalty-free to members of the Bluetooth special interest group.

(See references 3)

3.3 Word Study

I. Find in the text English equivalents for the following words and expressions:
Переносной, кстати, настраивать, функционировать, передатчик, управлять устройствами, одинаковая частота.

II. Give Russian equivalents for the following words and expressions from the text and use them in the sentences of your own:
Get smarter, wireless link, a secure link, globally available, packet-switching protocol, feedback, battery life.

III. Paraphrase or explain in your own words the meaning of the following words and expressions:
Connectivity frustrations, portable equipment, handle the information, switch channel, conflicting signals, usable density, power consumption.

3.4 Grammar

I. Revise the ways to describe ability:
1 Swarming robots can work together to perform searches
2 Washing machines will be able to report any breakdowns for repair
3 Imagine being able to send music files to your MP3 player without a wire connection
4 Professor Warwick had a chip fitted into his arm which could activate sensors in doors and computers as he approached.
5 Marconi was able to send a radio signal from Britain to Newfoundland.
We use can and be able to to describe ability in the present but can is more common. We use could for general abilities in the past but was/were able to describe an ability on a specific occasion. This table summarises their uses:
Ability

Present	can	be able to
Future	x	will be able to
Present perfect	x	has/have been able to
-ing form	x	being able to
Past (specific action)	x	was/were able to
Past (general and with verbs of sensation)	could	x

For past negatives and questions both verbs are possible:

Early computers could not/were not able to operate at high speeds.
Could they/were they able to store much data?

II. Complete the blanks with the correct form of can or be able to. In some cases more than one answer is possible.

Imagine ……… open doors and switch on computers as you approach them. Professor Warwick ……… because he had an electronic chip fitted into his arm for a month. He ……… demonstrate to the press how computers would greet him with, "Good morning, Professor Warwick" as he walked past. Next he wants to record the signals from his brain to his arm to see if he ……… program a computer to operate his arm. In the long term, this may help people who ……… use their limbs. His wife too will have a chip implanted. They hope ……… feed messages into each other's brains. According to the Professor, one day we ……… communicate directly with machines. If he is right, we ……… drive a car from the passenger seat and we ……… operate a computer without using a mouse or keyboard. However, there is also the alarming prospect that someone ……… hack into your brain.

III. Use an appropriate certainty expression (see the table below) to complete these predictions. More than one answer is possible.

1 Barcodes ……… soon be replaced with radio-frequency tags.
2 People are ……… to buy if locked in to Ariston for other networked appliances.
3 If EVAs live up to the developers' claims, they ……… provide the illusion of personal service without the cost.
4 In 20 years time we ……… be seeing shop assistants being replaced by computer-generated images.
5 We ……… soon be driving cars without steering wheels.
6 Professor Warwick is currenty conducting experiments which ……… lead to more of us becoming cyborgs.
7 By mid-21st century, a team of fully autonomous humanoid soccer players ……… win a soccer game against the winner of the most recent World Cup.
8 A virtual world populated by virtual humans ……… become a very tangible reality.

More certain	Verbs	Adverbs	Adjectives
|	will, will not	certainly	certain
|		likely, unlikely	expected
|		probably	probable
Less certain	could, may, might	possibly	possible

IV. In pairs discuss the ideas in the exercise above, express your opinion. Use the expressions of certainty.

3.5 Writing

I. Write three more questions on the text in the module to ask in the class.

II. You have bought a Bluetooth device in an online shop. You are not satisfied with how it works. Write a letter of complaint to the manufacturer.

Module 4: Famous Developers

4.1 Getting started

I. Work in groups. Compare your answers with others in your group.
- Have you ever heard of Norbert Wiener?
- What do you know about cybernetics?

II. Discuss the possibility of creating artificial intelligence in the future. Prove your point of view.

4.2 Reading

Find the answers to these questions in the following text:
1 What is cybernetics?
2 What is the branch of artificial intelligence research based on?
3 What sparked Norbert Wiener's interest in how information was transmitted and processed, both in humans and machines?
4 What, as Norbert Wiener saw it, does pure communication process involve?
5 In what way could both man and machine evolve to higher levels functioning?
6 What is the origin of the term cybernetics?
7 When was Cybernetics by Norbert Wiener published?
8 What future developments did Norbert Wiener manage to predict?
9 What terms were first introduced in Cybernetics by Norbert Wiener?
10 What scientific fields did Norbert Wiener make contributions to?

Norbert Wiener (1894-1960)

Mathematician Norbert Wiener's work in the area of communication theory led to the development of cybernetics, or the study of control and communication in animals and machines. His work also formed the basis for the branch of artificial intelligence research based on the process of the human mind.

The son of a somewhat eccentric professor of Slavic languages and literature American mathematician Norbert Wiener's inherent brilliance set him on intellectual path at an early age. Although his upbringing backfired to a certain degree, leaving him always somewhat skeptical of his abilities, Wiener's work in mathematical theories would lead him to the founding a new discipline – cybernetics, or the study of control and communication in animals and machines.

Wiener's intellectual gifts exhibited themselves at an early age. Born in the college town of Columbia, Missouri, he was quickly recognized as a child prodigy and was reading fluently by age of three. He entered high school at nine, completing the four-year course in just two years, and went on to complete his undergraduate degree at Tufts University at age of 14. The following year, Wiener began postgraduate studies at Harvard University, earning his master's degree in 1912 and his Ph.D. In mathematical logic one year later at the age of 19. He the traveled to England and attended Cambridge University, where he studied logic. Following his studies at Cambridge, Wiener attended the University of Cottingen in Germany.

On his return to the U.S., Wiener taught at Columbia, Harvard and Main Universities. Finding it difficult to focus entirely on academics, he also worked for a year as a staff writer for Encyclopedia America, and for another year as a journalist for the Boston Herald. Although an ardent pacifist, Wiener also worked as a mathematician at the U.S. Army's Ballistic Research Laboratory in Aberdeen, Maryland, where he helped formulate mathematical tables that were used to determine where guns should be aimed before firing. He was appointed professor of mathematics at the Massachusetts Institute Of Technology in 1919, and remained on faculty there until 1960.

His scientific work at MIT sparked his interest in how information was transmitted and processed, both in humans and machines. As Wiener saw it, pure communication process involves similar, definable elements, whether they are conducted by machines or man. If those elements, or messages, once they were defined, could be rigorously controlled, then they could also be used to control both machines and human beings. And, by being able to modify behavior learning from these processes, both man and machine could evolve to higher levels functioning.

As Wiener continued his research, he coined the term cybernetics (from the Greek kybernetes for steersman).

Wiener's work before and during World War 2 led to the publishing of Cybernetics, or control and communication in the animal and machine in 1948. In it he described a new way of looking at how the world functioned, based on his research on the way in which information is transmitted and processed. He saw a world that focused on information, not energy; and on digital or numeric processes. His theories not only laid the foundation for this new field of study, they also largely predicted the future development of computers, The book had an immediate impact; terms such as input, feedback and output, in common use today, were first introduced in Cybernetics. In subsequent books, he would theorize about where machines triumphed over their creators.

Wiener remained an active mathematician throughout his life. Although he is most noted as "the father of cybernetics", he also made many contributions to the fields of pure and applied mathematics, theoretical physics and theoretical engineering. Wiener's work also formed the basis of another scientific field – artificial intelligence – which amplified many of his theories on the relationship between man and machine in its search to develop a machine that could think.

(See references 4)

4.3 Word study

I. Find in the text English equivalents for the following words and expressions:
несколько эксцентричный; привести к созданию новой дисциплины; умственные способности; строить теорию; чистая и прикладная математика; научное направление

II. Give Russian equivalents for the following words and expressions from the text and use them in the sentences of your own:
form the basis; artificial intelligence; backfire; to a certain degree; exhibit oneself; child prodigy; undergraduate degree; postgraduate studies; focus on; staff writer; ardent pacifist; spark one's interest; involve; definable; rigorously, modify, coin a term; lay the foundation; immediate impact; input, feedback, output, be in common use; throughout his life, make contributions.

III. Paraphrase or explain in your own words the meaning of the following words and expressions:
the process of the human mind; inherent brilliance set him on intellectual path; leaving him always somewhat skeptical of his abilities; completing the four-year course in just two years; sparked his interest.

4.4 Grammar

I. Fill in the blanks with articles if necessary.
1 The son of ... somewhat eccentric professor of Slavic languages and literature ... American mathematician Norbert Wiener's inherent brilliance set him on ... intellectual path at ... early age.
2 Although his upbringing backfired to ... certain degree, leaving him always somewhat skeptical of his abilities, Wiener's work in ... mathematical theories would lead him to the founding ... new discipline - cybernetics, or ... study of control and communication in animals and machines.
3 Although ... ardent pacifist, Wiener also worked as ... mathematician at ... US Army's Ballistic Research Laboratory in Aberdeen, Maryland, where he helped formulate mathematical tables that were used to determine where ... guns should be aimed before firing.

II. Revise the usage of the Passive Voice.

Tenses	Active voice	Passive voice
Simple present	Write/writes	Is/are written
Present continuous	Am/is/are writing	Is/are being written
Simple past	Wrote	Was/were written
Past continuous	Was/were writing	Was/were being written
Future	Will write	Will be written

III. Put the verbs into the Passive Voice.
1 Hard drives_____to store large amounts of information on the computer. (use)
2 The broken disc drive_____by a repairman yesterday. (replace)
3 The joystick_____to play computer games for many years. (use)
4 A new type of motherboard_____by the company at the moment. (design)
5 This application_____by thousands of people since 2014. (download)
6 I didn't get your voice message yesterday because my smartphone_____two days before. (steal)
7 Who_____the mouse (a small device used in computing)_____by? (invent)
8 How many laptops_____every year? (produce)

IV. Rewrite the following sentences with the passive.
1 Robert Wiener coined the term cybernetics.
The term cybernetics_____
2 The company is designing a new computer device.
A new computer device_____
3 The have sold all the smartphones.
All the smartphones_____
4 You can download this program free from the website.
This program_____
5 They will launch this software next year.
This software_____

4.5 Writing

I. Write three more questions on the text in the module to ask in the class.

II. Write a short essay on how the creation of artificial intelligence could affect our lives.

Module 5: Voice Technology

5.1 Getting started

I. Work in groups. Compare your answers with others in your group.
- What do you know about voice technology?
- What voice technology applications do you know?
- Do you often make use of voice technology applications in your everyday life?
- Do you often use voice mail?

II. Discuss the ways of using voice technology. Make a list.

5.2 Reading

Find answers to these questions in the following text:
1 What are desirable capabilities provided by voice technology?
2 Why should you think twice about whether your application needs all those fancy capabilities?
3 What is the next frontier in interface technology for most major computer manufactures?
4 What is the most prevalent use of voice technology in microcomputers?
5 What uses of voice-based technology are mentioned in the text?
6 In what situations can voice technology successfully save labor?
7 Why are several intensive efforts under way to use voice interfaces to aid doctors and nurses?

Computer and spoken word

Current computer insist that you do things their way. Using a computer device requires that you accommodate yourself to how the computer works and constantly monitor the input process. This is quite unnatural and, for most people and applications, requires too much effort.

Useful voice technology is available now, if you are willing to compromise on certain capabilities. When considering products, however, you should remember that almost every desirable capability (e. g., speaker independence, continuous speech, and rejection) degrades the accuracy of the system. You might want to think twice about whether your application needs all those fancy capabilities.

Most major computer manufactures recognize that accessible voice input is the next frontier in interface technology.

The trend in voice interfacing is toward systems that possess more and more of the characteristics of a human listener. These systems will let you realize the full potential of voice-based communication with your computer.

Voice technology is used in microcomputers for purpose other than speech recognition or understanding. Its most prevalent use is for voice annotations and voice mail, as well as for synthesized speech output.

Some systems let you record a spoken message in digitized form on the machine. You can sand your message as E-mail to someone else who has a workstation with playback capability. In that respect, voice mail can function much like an answering machine.

Another use of voice-interface technology currently gaining popularity is voice annotation for documents. This can take the form of spoken comment into the document at text locations you specify.

Voice interfaces are not limited to character-based computers. One interesting application area involves the integration of voice technology with telephones, visual interfaces, fax machines, and voice mail.

Mobile phones can also contain voice-dialing capabilities (such product, for example, is sold by Motorola). In general, these systems are not as sophisticated as

some of workstation-based technologies, but they are perfectly adequate. They let you store a spoken list of names in the phone, each with associated telephone number.

Then, using voice commands, the phone will dial the appropriate number based on the spoken name.

Another successful application of voice interfacing is in controlling robotic systems. In hospitals, voice commands can control the position of patient beds.

In laboratories, voice commands can control the magnification and position of large microscopes, scanners, or other optical equipment. In such "eyes busy" situations, voice technology provides a significant edge.

In typical "eyes busy" or "hand busy" situations, voice technology can successfully save labor.

Another area where small time savings translate into dollar amounts is in the medical field. Several intensive efforts are under way to use voice interfaces to aid doctors and nurses. In this case medical reporting follows a highly standardized format, in which a limited vocabulary is sufficient to account for almost all situations.

It's almost impossible to exhaust the question about all the possibilities of voice technology applications. Maybe you'll help us. Stir up your imagination.
(See references 4)

5.3 Word study

I. Find in the text English equivalents for the following words and expressions:
Приспосабливаться (к чему-либо); процесс ввода (данных); прикладная компьютерная программа; распознавание речи; выход синтезированной речи; автоответчик; давать значительное преимущество.

II. Give Russian equivalents for the following words and expressions from the text and use them in sentences of your own:
Computer device; voice technology; speaker independence; continuous speech; rejection; degrade; voice input; voice-based communication; voice annotation; voice mail; spoken message; digitized form; workstation; playback capability; voice interface technology; voice annotation for documents; spoken comment; specify; visual interface; voice command; dial the number; robotic system; sufficient; exhaust the question.

III. Paraphrase or explain in your own words the meaning of the following words and expressions:
compromise on certain capabilities; in typical "eyes busy" or "hand busy" situations; fancy capabilities; gain popularity; character-based computer; small time savings.

5.4 Grammar

I. Fill in the blanks with prepositions.
1 The trend ... voice interfacing is toward systems that possess more and more ... the characteristics ... human listener.
2 Voice technology is used in microcomputers ... purpose other than speech recognition or understanding.
3 Some systems let you record a spoken message ... the machine.
4 Another use ... voice-interface technology currently gaining popularity is voice annotation ... documents.
5 This can take the form ... spoken comment … the document ... text locations you specify.
6 Then, using voice commands, the phone will dial the appropriate number based ... the spoken name.

II. Revise the usage of the gerund and the infinitive.

Uses of the Infinitive	Uses of the Gerund
The infinitive is the base form of the verb. It is often used with to. It can be positive (e.g. to be) or negative (e.g. not to be). Use the infinitive with to: - after a list of verbs (want, need, would like*…) - after adjectives - after question words (e.g. what, where, when etc.) - to say why you do something (I study to know more about this subject)	The gerund is the base form of the verb + ing. It can be positive (e.g. going) or negative (e.g. not going). Use the gerund: - as the subject or object of a sentence - after a list of verbs (like*, love, hate, enjoy…) - after prepositions * like is a verb which is used both with the infinitive and the gerund.

III. Circle the correct form.
1 I've decided to study/ studying informatics.
2 Do we need to buy/ buying this software.
3 You should spend/ spending less time playing computer games.
4 Using/ to use voice-interface technology in voice annotation for documents is gaining popularity.
5 There are several ways of to use/using voice technology applications.
6 It's hardly possible to enumerate/ enumerating all capabilities of voice technology.

IV. Complete with gerund or infinitive.
1 Have you finished_____the application? (download)
2 You can use this program_____the problem. (solve)
3 I've always enjoyed_____films online. (watch)
4 Finally they decided against_____the new computer. (buy)

5 The company stopped_____that model two years ago. (produce)
6 Don't forget_____the computer before you go out. (turn off)
7 The keyboard is used for_____data into computer programs. (input)
8 _____a computer device is up to you. (choose).

5.5 Writing

I. Write three more questions on the text in the module to ask in the class.

II. Write an essay on how voice technology could be used in different application areas.

REFERENCES

1. http://www.rae.ru/monographs/159-5095
2. http://www.rae.ru/monographs/159-5090
3. http://www.rae.ru/monographs/159-5097
4. Турук И. Ф., Кнаб О. Д. Английский язык в компьютерной сфере: учебно-практическое пособие / И. Ф. Турук, О. Д. Кнаб. - М.: Университетская книга. 2015. - 298 с. табл.

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