

Министерство науки и высшего образования Российской Федерации

федеральное государственное бюджетное образовательное учреждение
высшего образования
РОССИЙСКИЙ ГОСУДАРСТВЕННЫЙ ГИДРОМЕТЕОРОЛОГИЧЕСКИЙ
УНИВЕРСИТЕТ

Кафедра Прикладной информатики

Фонд оценочных средств дисциплины

Б1.О.02 Иностранный язык (продвинутый уровень)

Основная профессиональная образовательная программа
высшего образования по направлению подготовки

09.04.03 Прикладная информатика

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Уровень:

Магистратура

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Очная

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1. Паспорт Фонда оценочных средств по дисциплине

«Иностранный язык (продвинутый уровень)»

Таблица 1. Перечень оценочных средств текущего контроля

| № | Раздел\Тема дисциплины | Формируемые компетенции | Формы текущего контроля успеваемости |
|--|---|-------------------------|---|
| 1 семестр | | | |
| 1 | Раздел 1: Этические вопросы. Тема 1: Вопросы этики в ИТ. | УК-4 | Устный перевод. Моделируемая ситуация: «Проведение собеседования». |
| 2 | Раздел 1: Этические вопросы. Тема 2: Профессиональная этика в ИТ. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Аннотация статьи. |
| 3 | Раздел 2: Анализ задач. Тема 3: Анализ задач. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Аннотация статьи. |
| 4 | Раздел 2: Анализ задач. Тема 4: Важная роль анализа задач и проектного решения функционального наполнения. | УК-4 | Тестирование Контрольная работа: письменный перевод текста Аннотация статьи |
| 5 | Раздел 2: Анализ задач. Тема 5: Роль анализа задач в проектировании. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Устный перевод. |
| Форма промежуточной аттестации: | | | Зачет |
| 2 семестр | | | |
| 6 | Раздел 3: Операционная система. Тема 6: Особенности операционной системы первых компьютеров. | УК-4 | Аннотация статьи. Моделируемая ситуация: «Конференция». |
| 7 | Раздел 3: Операционная система. Тема 7: Разработка операционной системы. | УК-4 | Аннотация статьи. Моделируемая ситуация: «Конференция». |
| 8 | Раздел 4: Виртуальная реальность. Тема 8: Виртуальная реальность. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Устный перевод. Аннотация статьи. |
| 9 | Раздел 4: Виртуальная реальность. Тема 9: Виртуальная реальность в ГИС. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Устный перевод. Аннотация статьи. |
| 10 | Раздел 5: Интернет. Тема 10: Характеристики интернет. | УК-4 | Тестирование. Контрольная работа: письменный перевод текста. Устный перевод. Моделируемая ситуация: «Конференция». |
| Форма промежуточной аттестации: | | | Экзамен |

2. Перечень компетенций, с указанием этапов их формирования в процессе освоения дисциплины

Процесс изучения дисциплины направлен на формирование компетенций: УК-4.

Таблица 2. Перечень компетенций, формируемых в процессе освоения дисциплины

| Формируемые компетенции | Планируемые результаты обучения по дисциплине, характеризующие этапы формирования компетенций | Виды оценочных средств |
|-------------------------|---|---|
| УК-4 | Знать: <ul style="list-style-type: none"> — особенности системы изучаемого иностранного (английского) языка в его фонетическом, лексическом и грамматическом аспектах; — социокультурные и языковые нормы профессионального общения, а также правила речевого этикета, позволяющие специалисту эффективно использовать иностранный язык как средство общения в современном поликультурном мире. | Задания репродуктивного уровня: тестирование |
| | Уметь: <ul style="list-style-type: none"> — читать и переводить литературу по специальности без словаря с целью поиска необходимой информации; — переводить литературу по специальности со словарем; — составлять аннотации научных статей; — участвовать в дискуссиях профессионального характера; — выступать с докладом на иностранном языке на конференциях, семинарах с использованием мультимедийной презентации. | Задания реконструктивного уровня: контрольная работа (письменный перевод текста); устный перевод; комплект экзаменационных билетов |
| | Владеть: <ul style="list-style-type: none"> — навыками и умениями общения посредством языка, т.е. передавать мысли и обмениваться ими в различных ситуациях в процессе взаимодействия с другими участниками общения, правильно использовать систему языковых, социокультурных и речевых норм; — способностью выбирать способы коммуникативного поведения, адекватные аутентичной ситуации общения; — умениями построения целостных, связанных и логичных высказываний разных функциональных стилей речи; — умениями перевода научной литературы, подготовки устного выступления. | Задания практико-ориентированного: моделируемая ситуация «Проведение собеседования»; моделируемая ситуация «Конференция»; написание аннотации статьи |

3. Балльно-рейтинговая система оценивания

Таблица 3. Распределение баллов по видам учебной работы — 1 семестр

| Вид учебной работы, за которую ставятся баллы | Баллы |
|---|--------------|
| Текущий контроль успеваемости | 0-70 |
| Промежуточная аттестация | 0-30 |
| ИТОГО | 0-100 |

Таблица 3.1. Распределение баллов по текущему контролю успеваемости

| № | Практические работы | Баллы |
|---|---|-------------|
| 1 | Практическая работа №1. Вопросы этики в ИТ. | 0-14 |
| 2 | Практическая работа №2. Профессиональная этика в ИТ. | 0-14 |
| 3 | Практическая работа №3. Анализ задач. | 0-14 |
| 4 | Практическая работа №4. Важная роль анализа задач и проектного решения функционального наполнения. | 0-14 |
| 5 | Практическая работа №5. Роль анализа задач в проектировании. | 0-14 |
| - | ИТОГО | 0-70 |

Таблица 3.2. Конвертация баллов в итоговую оценку

| Оценка | Баллы |
|-----------|--------|
| Зачтено | 40-100 |
| Незачтено | 0-39 |

Таблица 4. Распределение баллов по видам учебной работы — 2 семестр

| Вид учебной работы, за которую ставятся баллы | Баллы |
|---|--------------|
| Текущий контроль успеваемости | 0-70 |
| Промежуточная аттестация | 0-30 |
| ИТОГО | 0-100 |

Таблица 4.1. Распределение баллов по текущему контролю успеваемости

| № | Практические работы | Баллы |
|---|---|-------------|
| 1 | Практическая работа №6. Особенности операционной системы первых компьютеров. | 0-14 |
| 2 | Практическая работа №7. Разработка операционной системы. | 0-14 |
| 3 | Практическая работа №8. Виртуальная реальность. | 0-14 |
| 4 | Практическая работа №9. Виртуальная реальность в ГИС. | 0-14 |
| 5 | Практическая работа №10. Характеристики интернета. | 0-14 |
| - | ИТОГО | 0-70 |

Таблица 4.2. Конвертация баллов в итоговую оценку

| Оценка | Баллы |
|---------------------|--------------|
| Отлично | 85-100 |
| Хорошо | 65-84 |
| Удовлетворительно | 40-64 |
| Неудовлетворительно | 0-39 |

4. Содержание оценочных средств текущего контроля.

Перечень учебно-методического и информационного обеспечения самостоятельной работы обучающихся по дисциплине, в том числе по подготовке к текущему контролю и промежуточной аттестации представлены в рабочих программах и методических рекомендациях для обучающихся по освоению дисциплины.

Перечень практических работ (практические работы включают в себя контрольные, тестирования, доклады, аннотации статей, устные переводы, моделируемые ситуации исходя из темы самой работы), методика выполнения и критерии оценивания по темам дисциплины:

**Тест текущего контроля
1 вариант (осень)**

I. Выберите правильную глагольную форму:

| | | |
|--|--------------------|------------------|
| 1. In recent time the ability of tiny computing devices to control complex operations ... the way many tasks are performed, ranging from scientific research to producing consumer products. | | |
| A) has transformed | B) is transforming | C) transforms |
| 2. Computers are part of many machines and devices that once ... continual human supervision and control | | |
| A) require | B) required | C) have required |
| 3. Many people today telecommute that is, use their computers to stay in touch with the office while they ... at home. | | |
| A) are working | B) will work | C) work |
| 4. In the short term, computers are certainly going to become more powerful and they ... also ... cheaper. | | |
| A) were getting | B) will get | C) have got |
| 5. After he ... a basic kernel, he released the source code to the Linux kernel on the Internet. | | |
| A) had written | B) wrote | C) has written |

II. Выберите правильную глагольную форму:

| | | |
|--|----------------------|--------------------------|
| The problem upon in 1998. | | |
| A) dealt | B) was dealt | C) has been dealt |
| 2. In future super intelligent machines to do only the work useful to mankind, but not dangerous for it. | | |
| A) will be allowed | B) have been allowed | C) are allowed |
| 3. Much attention ... nowadays to moral aspects of Artificial Intelligence. | | |
| A) was given | B) is given | C) will be given |
| 4. Automation is often referred to as a new subject and its various aspects ...yet all ...adequate attention to. | | |
| A) have ... been paid | B) are ... paid | C) have not ...been paid |

III. Преобразуйте следующие предложения, используя страдательный залог.

1. A special set of programs provides an interface for the user.
An interface for the user.....
2. Common applications programs include word processors, spreadsheets and databases.
Word processors, spreadsheets and databases
3. A computer receives instructions in the form of a program.
Instructions in the form of a program
4. A computer will follow special instructions.
Special instruction.....
5. They installed the computers yesterday.
The computers

IV. Укажите, какой частью речи являются подчёркнутые формы:

- A) Gerund B) Participle I
1. Following this new method they achieved good results.
 2. There are typically two or one hundred registers depending on the type of computer.

3. The great advantage of the so-called graphic computers lies in solving design problems.
4. Backups are a way of securing information
5. One can also reduce the damage done by viruses by making regular backups of data

V. Выберите правильный вариант перевода подчёркнутых форм:

1. We were all for starting the production of new hardware at once.
 A) начиная
 B) начало
 C) начинающий
2. We succeeded in building flexible systems.
 A) строительство
 B) строя
 C) строящие
3. Operating with graphical interface people usually use such manipulators as a mouse and a track-ball.
 A) операционный
 B) работая
 C) работа
4. Software written in a machine language is known as "machine code".
 A) написанный
 B) написавший
 C) написав

VI. Выберите подходящий по смыслу модальный глагол или его заменитель:

| | | |
|--|-------------|-------------|
| 1. No part of this publication ... be reproduced. | | |
| A) could not | B) may | C) must not |
| 2. If you wish to have cheap and fast correspondence, you ... use e-mail. | | |
| A) must | B) may not | C) should |
| 3. There are some diseases when only computed-tomography scanners ... save lives for patients. | | |
| A) should | B) can | C) must |
| 4. The ethics is the study of what is right to do in a given situation, or what we ... do. | | |
| A) could | B) ought to | C) need |
| 5. Computers ... do anything until you tell it what to do. | | |
| A) will | B) cannot | C) might |

**Тест текущего контроля
2 вариант (осень)**

I. Выберите правильную глагольную форму:

| | | |
|--|-----------------|---------------------|
| 1. In 1992 Linus Torvalds ... computer science in Helsinki. | | |
| A) is studying | B) has studied | C) was studying |
| 2. After he had written a basic kernel, he ... the source code to the Linux kernel on the Internet. | | |
| A) releases | B) released | C) had released |
| 3. Scanners ... an important part of the home office over the last few years. | | |
| A) have become | B) will become | C) were becoming |
| 4. Many people today ... that is, use their computers to stay in touch with the office while they are working at home. | | |
| A) telecommute | B) telecommuted | C) will telecommute |
| 5. Aiken was not familiar with the Analytical Engine when he ... the Mark I. | | |
| A) design | B) is designing | C) was designing |

II. Выберите правильную глагольную форму:

| | | |
|---|-----------------|----------------------|
| 1. Computers for automatic piloting and navigation | | |
| A) applied | B) are applied | C) are applying |
| 2. The programs to help people in the use of the computer systems. | | |
| A) write | B) have written | C) are written |
| 3. If data correctly into the data processing system, the possibility of error is reduced. | | |
| A) entered | B) have entered | C) have been entered |
| 4. As digital computers count quickly, they ... widely in business. | | |
| A) are ... using | B) are ... used | C) will ... use |

III. Преобразуйте следующие предложения, используя страдательный залог.

1. You have sent us the wrong documents again.
The wrong documents
2. Someone broke two monitors during transportation.
Two monitors
3. A faulty connection will cause the problems with the hard disk.
The problems
4. You delivered the printers three weeks late.
The printers
5. We are returning the goods because we are not satisfied with them.
The goods

IV. Укажите, какой частью речи являются подчёркнутые формы:

- A) Gerund B) Participle I
1. Packet filters act by inspecting the "packets" which transfer between computers on the Internet.
 2. Success depends on being in the right place at the right time.
 3. Depending on context, cyberterrorism may overlap considerably with cybercrime, cyberwar or ordinary terrorism.
 4. Electronic computers, using either relays or valves, began to appear in the early 1940s.
 5. The calculations following the experiment gave accurate results.

V. Выберите правильный вариант перевода подчёркнутых форм:

1. The first computers used two electrical compounds connected together with wires.
A) использованный
B) используя
C) использовали
2. In the late 1940s computers were made using vacuum tubes, resistors and diodes.
A) использованный
B) используя
C) используют
3. UV radiation is artificially made by passing an electric current through a gas or vapor, such as mercury vapor.
A) проходящая
B) путем прохождения
C) проходит
4. Computers using transistors were called second generation computers.
A) названный
B) называются
C) назывались

VI. Выберите подходящий по смыслу модальный глагол или его заменитель:

| | | |
|---|-----------------|-------------|
| 1. Internet ... be available to any schoolchild in Russia. | | |
| A) need | B) must | C) couldn't |
| 2. There are operating systems which you ... control by voice. | | |
| A) should | B) can | C) may |
| 3. Old-fashioned people ... accept the reality of the Internet world. | | |
| A) are able to | B) will have to | C) could |
| 4. Foreign language translation ... be a bit more complicated than a computer can handle. | | |
| A) may | B) must | C) should |
| 5. X-rays are potentially dangerous and be used on pregnant women. | | |
| A) won't | B) shouldn't | C) couldn't |

Тест текущего контроля
1 вариант (весна)

I. Раскройте скобки, употребляя глагол в нужной видовойременной форме действительного залога:

1. In 1890 John Loud (to create) the first ballpoint pen.
2. In future people (to have) easy access to virtual reality system.
3. At the moment we (to reach) a point when the simulations are so realistic.
4. Teenagers (to play) computer games for years.
5. By the end of the 20th century scientists (to replace) metal wires by fiber-optic ones.

II. Раскройте скобки, употребляя глагол в нужной видовойременной форме страдательного залога:

1. The equipment ... (to know) as the hardware. (Present Simple)
2. A number of programming tools are commercially available now and excellent results ... (to obtain) by several of these. (Present Perfect)
3. The problem ... (to deal upon) in 1998. (Past Simple)
4. In future super intelligent machines ... (to allow) to do only the work useful to mankind, but not dangerous for it. (Future Simple)
5. The results ... (to affect) by many factors. (Past Simple)

III. Образуйте общий вопрос к каждому предложению.

1. Business microcomputers can perform 100 operations per second.
2. He is able to install server on the computer.
3. You still have to input data with a keyboard.
4. The schoolchildren may work with computers at the lessons.
5. They are allowed to run the application.

IV. Укажите буквой, какую функцию выполняет инфинитив в данном предложении:

- A подлежащее
- B обстоятельство
- C определение
- D входит в состав оборота «сложное дополнение»
- E входит в состав оборота «сложное подлежащее»

1. The problem to be solved is important for development of the industry.
2. Even the more sophisticated computational systems are unlikely to substitute the human brain.
3. One way to think of computer security is to reflect security as one of the main features.
4. Analytical engine was invented to store data.
5. To use the Internet to conduct a real business has become every businessperson's need.
6. Everybody knows the computer networks to become more and more a part of professional and personal lives.

V. Укажите буквой, чем является подчеркнутая глагольная форма в данном предложении:

- A Participle II
- B Past Simple

1. Invented by Babbage in 1842 and called by its inventor "analytical engine" this machine became the first home computer.
2. The problem concerned complicated processes taking place on the computer market.
3. Computers using transistors were called second generation computers.
4. A database is an organized collection of data.
5. They delivered the equipment last week.

VI. Укажите буквой, чем является подчеркнутая глагольная форма в данном предложении:

- A Gerund
- B Participle I

1. Loading into memory non-resident programs as required is one task of the supervisor program.
2. Communicating directly with the hardware is the role of the operating system.
3. The calculations following the experiment gave accurate results.
4. Following this new method they achieved good results.
5. Supporting multiple programs and users is part of the work of mainframe operating systems.

VII. Укажите буквой независимый причастный оборот:

- A если он стоит в начале предложения
- B если он стоит в конце предложения
- C если он отсутствует в предложении

1. The new technique being worked out, the yields rose.
2. The reaction must have taken place, with the data showing a change in the infrared region.
3. The session was over, with many aspects of the problem left unsolved.
4. Having been asked to translate into Chinese "out of sight – out of mind", the machine replied by a row of Chinese hieroglyphs.
5. Based on the storage and processing technologies employed, it is possible to distinguish four distinct phases of IT development.

VIII. Укажите номера предложений, в которых сказуемое переводится на русский язык с частицей "бы" (как признак сослагательного наклонения):

1. If the evolution of AI (Artificial Intelligence) proceeds so rapidly, it will be able to solve almost any problem arisen.
2. If we asked the computer to estimate possible results of our activity, it would give us a reliable answer.
3. Surely, they would have done much more, if they had used the last model of computers.
4. If you use a lot of graphics, your Web page will be too busy.
5. If you asked what a software is, I would note it as "an applied thought".

Тест текущего контроля
1 вариант (весна)

I. Раскройте скобки, употребляя глагол в нужной видовойременной форме действительного залога:

1. After people (to tell) him about Babbage's work, Aiken was surprised at his genius.
2. Aiken was not familiar with the Analytical Engine when he (to design) the Mark I.
3. In 1970s computers (to be) massive machines.
4. Since that time computers (to become) popular in most aspects of our life.
5. Now computers (to get) smaller and smaller in size.

II. Раскройте скобки, употребляя глагол в нужной видовойременной форме страдательного залога:

1. Anti-virus programs ... (to use) to detect and remove viruses. (Future Simple)
2. Handheld computers ... (to carry) around by the user. (Present Simple)
3. This computer ... (to equip) with the most advanced memory chips. (Past Simple)
4. Data and instructions ... (to process) by the CPU. (Past Simple)
5. A program ... (to write) in one of several computer languages. (Present Perfect)

III. Образуйте общий вопрос к каждому предложению.

1. Storage devices must have capacities for the input, output data and programs.
2. We have to improve the program for better results in computing.
3. The rate of data transmission can be large on this pipe.
4. The computing machine should be numerical.
5. A user at his computer is allowed to make a query against a central databank.

IV. Укажите буквой, какую функцию выполняет инфинитив в данном предложении:

- A подлежащее
- B обстоятельство
- C определение
- D входит в состав оборота «сложное дополнение»
- E входит в состав оборота «сложное подлежащее»

1. The Web is stated to have created a standard that everybody could – and did – follow.
2. The aim was to have all the nets integrated in one system.
3. To write computer programs, to work out data to be processed is a very time-consuming job.
4. The information to be given in the next journal will surprise you.
5. Digital computers use numbers to simulate real-time processes.
6. We know the first computers to have represented a mass of vacuum tubes, transistors and integrated circuits.

V. Укажите буквой, чем является подчеркнутая глагольная форма в данном предложении:

- A Participle II
- B Past Simple

1. The problems studied helped us understand many things.
2. The results obtained are particular important.
3. A program designed to perform a specific task is called an application program.
4. It is necessary to keep buttons depressed.
5. A program written in a high-level language must be interpreted into machine

VI. Укажите буквой, чем является подчеркнутая глагольная форма в данном предложении:

- A Gerund
B Participle I

1. The Internet providing a new method of doing business must be capable of providing the reliability for the user.
2. High-level languages are translated, using compilation or interpretation or combination of the two, into machine language.
3. Design and implementation of software varies depending on the complexity of the software.
4. Establishing a user interface is one of the key functions of the operating system.
5. Providing services for applications software is an additional role.

VII. Укажите буквой независимый причастный оборот:

- A если он стоит в начале предложения
B если он стоит в конце предложения
C если он отсутствует в предложении

1. The idea of machine-aided calculus having survived numerous ups and downs over the years of its life has only now become a world-wide reality.
2. Computers using binary language represented by a single binary digit (1 or 0), one of the earliest sections of the Internet was called Bitnet.
3. A high-speed network connection having been established between five computing centres, they in turn made their facilities available to the local universities.
4. Network is a system of computers connected together to share programs, data, etc., the Internet being effectively a worldwide network of networks.
5. The cost of local phone calls being not so high, using e-mail becomes the most spread use of the Internet.

VIII. Укажите номера предложений, в которых сказуемое переводится на русский язык с частицей "бы" (как признак сослагательного наклонения):

1. If there is no printer when you run the program, the computer will produce a system error message.
2. If a program contains a logic error, it will run but won't work properly.
3. If I had enough money, I would buy the newest model of computers.
4. Should I be late, begin the negotiations without waiting for me.
5. If you use a lot of animation, your Web page will take a long time to download.

Таблица 5. Критерии оценивания результатов тестирования в 1 семестре

| Критерий | Результат |
|------------------------------|-----------------|
| 90%-100% правильных ответов; | 20 баллов |
| 80%-89% правильных ответов | 15 баллов |
| 60%-79% правильных ответов | 10 баллов |
| менее 60% правильных ответов | Менее 10 баллов |

Максимальное количество баллов – 20 (1 семестр).

Таблица 5.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|----------|--------------|---------------------|
| 1 | менее 10 | неудовлетворительно |
| 2 | 10 | удовлетворительно |
| 3 | 15 | хорошо |
| 4 | 20 | отлично |

Таблица 5.2. Критерии оценивания результатов тестирования во 2 семестре

| Критерий | Результат |
|------------------------------|------------------|
| 90%-100% правильных ответов; | 10 баллов |
| 80%-89% правильных ответов | 8 баллов |
| 60%-79% правильных ответов | 5 баллов |
| менее 60% правильных ответов | Менее 5 баллов |

Максимальное количество баллов – 10 (2 семестр).

Таблица 5.3. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|----------|--------------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 8 | хорошо |
| 4 | 10 | отлично |

Контрольная работа

1 вариант (осень)

Переведите текст письменно:

Transmission Control Protocol and the Internet Protocol

A series of rules known as computer communication protocols specify how packet headers are formed and how packets are processed. The set of protocols used for the Internet are named TCP/IP after the two most important protocols in the set: the Transmission Control Protocol and the Internet Protocol. Hardware devices that connect networks in the Internet are called IP routers because they follow the IP protocol when forwarding packets. A router examines the header in each packet that arrives to determine the packet's destination. The router either delivers the packet to the destination computer across a local network or forwards the packet to another router that is closer to the final destination. Thus, a packet travels from router to router as it passes through the Internet.

TCP/IP protocols enable the Internet to automatically detect and correct transmission problems. For example, if any network or device malfunctions, protocols detect the failure and automatically find an alternative path for packets to avoid the malfunction. Protocol software also ensures that data arrives complete and intact. If any packets are missing or damaged, protocol software on the receiving computer requests that the source resend them. Only when the data has arrived correctly does the protocol software make it available to the receiving application program, and therefore to the user.

Контрольная работа

1 вариант (осень)

Переведите текст письменно:

Computer-Based Global Information System.

The Internet is composed of many interconnected computer networks. Each network may link tens, hundreds, or even thousands of computers, enabling them to share information with one another and to share computational resources such as powerful supercomputers and databases of information. The Internet has made it possible for people all over the world to effectively and inexpensively communicate with one another. Unlike traditional broadcasting media, such as radio and television, the Internet does not have a centralized distribution system. Instead, an individual who has Internet access can communicate directly with anyone else on the Internet, make information available to others, find information provided by others, or sell products with a minimum overhead cost.

The Internet has brought new opportunities to government, business, and education. Governments use the Internet for internal communication, distribution of information, and automated tax processing. In addition to offering goods and services online to customers, businesses use the Internet to interact with other businesses. Many individuals use the Internet for shopping, paying bills, and online banking. Educational institutions use the Internet for research and to deliver courses to students at remote sites.

Контрольная работа

1 вариант (весна)

Переведите текст письменно:

Cache

When a web browser downloads a web page, it stores that web page in a special location on the computer called the cache. Storing web pages and the content inside them allows the browser to skip re-downloading that content if the web page have not been changed on the web server. This speeds up the web browsing experience, particularly when hitting the back button to return to the previous web page. The cache contains all the files you have pulled and viewed in your web browser. In most cases, web pages and files are left on your computer until a certain size limit is reached. At that point, the browser will delete older files from previous web sessions and replace them with newer files from whatever web server you are browsing.

If your caching functions are set to the defaults, you will have difficulty with dynamically generated pages. Sites such as CNN and CNBC change the content of their web pages several times a day. The default settings in the web browser will result in your seeing the first web page you browse to for as long as the browser is open. You can change these settings so that in just a minute past when the content changed at the site, your web browser will pull the new web page.

Контрольная работа

2 вариант (весна)

Переведите текст письменно:

Web Browsers

A web browser is a special software program (application) used to retrieve files from remote web servers. A web browser can open Web-based HTML files, FTP connections, graphic images and other files. The browser application is smart enough to be able to tell the difference between these files and display them properly. Browsers are also created to be 'intelligent' enough to be able to 'learn' to handle even more types of files using 'plug-ins'.

Web browsers are software. They run on your computer and do not connect you to the Internet. You use a web browser after you connect to your Internet Provider. A browser is not an online service like America Online, MSN or Compuserve. The online service provider provides telephone numbers and dial up connections. A web browser uses that connection to reach across the Internet and download files and information.

Now, you should know that America Online purchased the organization that produced the Netscape browser. Because there was great confusion about what the Internet and Internet Service Providers are, the online service "Netscape" was created to take advantage of the confusion between web browsers and the Internet.

Netscape and Microsoft Internet Explorer are applications, not Internet Service Providers. There now exists a "Netscape" Internet Service Provider.

Таблица 6. Критерии оценивания результатов выполнения контрольной работы

| Критерий | Результат |
|--|-----------------|
| Общая адекватность перевода текста в полном объеме. Отсутствие смысловых искажений. Русский текст грамматически корректен, лексико-терминологические единицы и синтаксические структуры, характерные для научного стиля речи, соответствуют норме и узусу языка перевода | 25 баллов |
| Перевод выполнен в полном объеме, но встречаются лексические, грамматические и стилистические неточности, которые не препятствуют общему пониманию текста, однако не согласуются с нормами литературного языка и стилем научного изложения | 15 баллов |
| Переведено ($2/3 - 1/2$) текста с многочисленными лексическими, грамматическими и стилистическими ошибками, которые затрудняют общее понимание текста. | 10 баллов |
| Неполный перевод (менее $1/2$). Непонимание содержания текста магистрантом. | менее 10 баллов |

Максимальное количество баллов – 25 (1 семестр).

Таблица 6.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|----------|---------------------|
| 1 | менее 10 | неудовлетворительно |
| 2 | 10 | удовлетворительно |
| 3 | 15 | хорошо |
| 4 | 25 | отлично |

Таблица 6.2. Критерии оценивания результатов выполнения контрольной работы

| Критерий | Результат |
|--|----------------|
| Общая адекватность перевода текста в полном объеме. Отсутствие смысловых искажений. Русский текст грамматически корректен, лексико-терминологические единицы и синтаксические структуры, характерные для научного стиля речи, соответствуют норме и узусу языка перевода | 15 баллов |
| Перевод выполнен в полном объеме, но встречаются лексические, грамматические и стилистические неточности, которые не препятствуют общему пониманию текста, однако не согласуются с нормами литературного языка и стилем научного изложения | 10 баллов |
| Переведено ($2/3 - 1/2$) текста с многочисленными лексическими, грамматическими и стилистическими ошибками, которые затрудняют общее понимание текста. | 5 баллов |
| Неполный перевод (менее $1/2$). Непонимание содержания текста магистрантом. | менее 5 баллов |

Максимальное количество баллов – 15 (2 семестр).

Таблица 6.3. Шкала перевода баллов в оценки Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|---------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 10 | хорошо |
| 4 | 15 | отлично |

Комплект заданий для устного перевода

Задание для устного перевода

В рамках данной программы самостоятельной работой студентов является подготовка устного перевода (домашнего чтения). Домашнее чтение представляет собой аутентичные тексты научных статей для перевода с английского языка на русский, которые могут выбираться студентами самостоятельно.

Студент подбирает материал в виде научных статей, монографий, учебных пособий по актуальным проблемам экологии, готовит полный перевод данного материала, используя англо-русские словари, грамматические справочники и материалы занятий, а также составляет список слов, которым может пользоваться во время сдачи.

Слова следует выписывать по каждому абзацу отдельно для облегчения перевода при опросе. Источником поиска материала может быть Интернет или библиотека. Уровень выбранного текста должен соответствовать лексико-грамматическому уровню изучаемого материала. Тематически статьи для домашнего чтения должны соответствовать пройденным текстам профессионального характера (тематика: Экология) или подбираются студентами, исходя из темы научного исследования.

По объему домашнее чтение составляет 60 страниц формата А4 (шрифт 14). На занятии в аудитории выполняется устный перевод отрывков текста по выбору преподавателя. Важнейшим требованием конечной адекватности перевода является его соответствие исходному тексту, отвечающее требованиям норм и правил построения текста в языке перевода.

Таблица 7. Критерии оценивания результатов выполнения устного перевода

| Критерий | Результат |
|--|----------------|
| Общая адекватность перевода текста в полном объеме. Отсутствие смысловых искажений. Русский текст грамматически корректен, лексико-терминологические единицы и синтаксические структуры, характерные для научного стиля речи, соответствуют норме и узусу языка перевода | 15 баллов |
| Перевод выполнен в полном объеме, но встречаются лексические, грамматические и стилистические неточности, которые не препятствуют общему пониманию текста, однако не согласуются с нормами литературного языка и стилем научного изложения | 10 баллов |
| Переведено ($2/3 - 1/2$) текста с многочисленными лексическими, грамматическими и стилистическими ошибками, которые затрудняют общее понимание текста. | 5 баллов |
| Неполный перевод (менее $1/2$). непонимание содержания текста магистрантом. | менее 5 баллов |

Максимальное количество баллов – 15.

Таблица 7.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|---------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 10 | хорошо |
| 4 | 15 | отлично |

Задание для написания аннотации статьи

Подобрать статью по теме магистерской диссертации. Объем статьи от 3 000 знаков с пробелами. Написать аннотацию, объем 1000-1200 знаков с пробелами.

Пример статьи:

Ambipolar carbon nanotube based field-effect transistors (AP-CNFETs) exhibit unique electrical characteristics, such as tri-state operation and bi-directionality, enabling systems with complex and reconfigurable computing. In this paper, AP-CNFETs are used to design a mixed-signal machine learning logistic regression classifier. The classifier is designed in SPICE with feature size of 15 nm and operates at 250 MHz. The system is demonstrated in SPICE based on MNIST digit dataset, yielding 90% accuracy and no accuracy degradation as compared with the classification of this dataset in Python. The system also exhibits lower power consumption and smaller physical size as compared with the state-of-the-art CMOS and memristor based mixed-signal classifiers.

Power consumption and physical size of integrated circuits (ICs) is an increasing concern in many emerging machine learning (ML) applications, such as, autonomous vehicles, security systems, and Internet of Things (IoT). Existing state-of-the-art architectures for digital classification, are highly accurate and can provide high throughput¹. These classifiers, however, exhibit high power consumption and occupy a relatively large area to accommodate complex ML models. Alternatively, mixed-signal classifiers have been demonstrated to exhibit orders of magnitude reduction in power and area as compared to digital classifiers with prediction accuracy approaching the accuracy of digital classifiers^{2,3,4,5,6,7,8,9}. While significant advances have been made at the ML circuit and architecture levels (e.g., in-SRAM processing², comparator based computing³, and switched-capacitor neurons⁴), the lack of robust, ML-specific transistors is a primary concern in ML training and inference with all conventional CMOS technologies. To efficiently increase the density and power efficiency of modern ML ICs while enabling complex computing, emerging technologies should be considered.

While the non-volatility of memristors has proven quite attractive for storing the weights required for feature-weight multiplication^{10,11,12,13}, field-effect transistors provide several advantages over memristors for ML. First, transistors provide a broader range of linear tuning of resistance, thereby better matching ML models. Second, transistors are not subject to the deleterious aging that deteriorates memristor behavior over time. Finally, the connectivity between feature-weight multiplication layers requires electrical signal gain, which cannot be provided by memristors; transistors can be used for such interlayer connections, thereby enabling a monolithic integrated circuit that can be fabricated efficiently. Of particular interest for on-chip classification are ambipolar devices. Owing to unique electrical characteristics, as described in the next section, ambipolar devices are expected to provide efficient on-chip training and inference solutions and reduce design and routing complexity of ML circuits.

A carbon nanotube (CNT) ambipolar device has been reported as a potential candidate for controllable ambipolar devices because of its satisfying carrier mobility and its symmetric and good subthreshold ambipolar electrical performance¹⁵. Based on the dual-gate CNT device's electrical performance, a library of static ambipolar CNT dual-gate devices based on generalized NOR-NAND-AOI-OAI primitives, which efficiently implements XOR-based functions, has been reported, indicating a performance improvement of $\times 7$, a 57% reduction in power consumption, and a $\times 20$ improvement in energy-delay product over the CMOS library¹⁶.

Existing results exploit the switching characteristics of the AP-CNFETs for enhancing digital circuits^{16,18}. In this work, we repurpose the AP-CNFET device for neuromorphic computing. Owing to the dual gate structure, AP-CNFET significantly increases the overall density of analog ML ICs, simplifies routing, and reduces power consumption. To the best of the authors knowledge, the AP-CNFET based ML framework is the first to demonstrate a multiplication-

accumulation (MAC) operation with single-device-single-wire configuration. Note that in CMOS classifiers at least two sensing lines are required to separately accumulate results of multiplication with positive and negative weights. Furthermore, additional circuitry is required to process the signals from the individual sensing lines into a final prediction. Alternatively, in memristor based classifiers, a crossbar architecture is typically used with a single sensing line per class. With this configuration, only positive (or negative) feature weights are, however, utilized. Thus, additional non-linear thresholding circuits are required for extracting the final decision.

The rest of the paper is organized as follows. The device background and electrical characteristics of AP-CNFET device are presented. The proposed scheme for utilizing AP-CNFETs for on-chip classification is described. The classifier is evaluated based on classification of commonly used Modified National Institute of Standards and Technology (MNIST) dataset and finally, the paper is concluded.

Таблица 8. Критерии оценивания результатов написания аннотации статьи

| Критерий | Результат |
|---|----------------|
| Демонстрирует знание законов композиции и стиля и умение логически верно, аргументированно и ясно строить письменную речь. Стиль полностью соответствует заданному формату речи. Тема раскрыта в полном объёме. Мысли чётко сформулированы, логически оформлены. Богатый и сложный по структуре язык, широкий объём лексики (в соответствии с пройденными разделами грамматики и лексическим материалом). Практически без ошибок. | 15 баллов |
| аргументированно и ясно строить письменную речь. Стиль полностью соответствует заданному формату речи. Тема достаточно хорошо раскрыта. Достаточный для выполнения задачи объём лексики и диапазон грамматических средств. В основном уместное употребление лексических единиц. Небольшое количество ошибок (до 10% высказываний), не препятствующих коммуникации. Простые грамматические структуры не вызывают затруднений. | 10 баллов |
| Демонстрирует знание законов композиции и стиля и умение логически верно, 5 баллов - Вопрос задания понят правильно, тема частично раскрыта. Композиции частично не хватает логики. Возможны стилистические отклонения, отсутствие средств связности при сохранении целостности текста. Некоторые сложности с использованием фактов и проблемных вопросов в качестве смысловой опоры. Небольшое количество серьёзных ошибок (до 25% высказываний), не препятствующих коммуникации. Простые грамматические структуры не вызывают затруднений. | 5 баллов |
| Вопрос задания только частично затронут. Композиции не хватает логики. Значительные сложности с использованием фактов и проблемных вопросов в качестве смысловой опоры. Нарушена логика изложения. Лексика используется в ограниченном объёме, с существенными ошибками. Стиль не всегда соответствует заданному формату речи. Процесс коммуникации частично нарушен из-за значительных ошибок (согласование, временные формы). Однако простые языковые формы используются правильно. | менее 5 баллов |

Максимальное количество баллов – 15 (1 семестр).

Таблица 8.1 Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|---------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 10 | хорошо |
| 4 | 15 | отлично |

Таблица 8.2 Критерии оценивания результатов написания аннотации статьи

| Критерий | Результат |
|---|------------------|
| Демонстрирует знание законов композиции и стиля и умение логически верно, аргументированно и ясно строить письменную речь. Стиль полностью соответствует заданному формату речи. Тема раскрыта в полном объёме. Мысли чётко сформулированы, логически оформлены. Богатый и сложный по структуре язык, широкий объём лексики (в соответствии с пройденными разделами грамматики и лексическим материалом). Практически без ошибок. | 10 баллов |
| аргументированно и ясно строить письменную речь. Стиль полностью соответствует заданному формату речи. Тема достаточно хорошо раскрыта. Достаточный для выполнения задачи объём лексики и диапазон грамматических средств. В основном уместное употребление лексических единиц. Небольшое количество ошибок (до 10% высказываний), не препятствующих коммуникации. Простые грамматические структуры не вызывают затруднений. | 8 баллов |
| Демонстрирует знание законов композиции и стиля и умение логически верно, 5 баллов - Вопрос задания понят правильно, тема частично раскрыта. Композиции частично не хватает логики. Возможны стилистические отклонения, отсутствие средств связности при сохранении целостности текста. Некоторые сложности с использованием фактов и проблемных вопросов в качестве смысловой опоры. Небольшое количество серьёзных ошибок (до 25% высказываний), не препятствующих коммуникации. Простые грамматические структуры не вызывают затруднений. | 5 баллов |
| Вопрос задания только частично затронут. Композиции не хватает логики. Значительные сложности с использованием фактов и проблемных вопросов в качестве смысловой опоры. Нарушена логика изложения. Лексика используется в ограниченном объёме, с существенными ошибками. Стиль не всегда соответствует заданному формату речи. Процесс коммуникации частично нарушен из-за значительных ошибок (согласование, временные формы). Однако простые языковые формы используются правильно. | менее 5 баллов |

Максимальное количество баллов – 10 (2 семестр).

Таблицы 8.3. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|----------|--------------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 8 | хорошо |
| 4 | 10 | отлично |

Комплект заданий для моделируемой ситуации «Проведение собеседования».

Задание 1. Introduction.

A. What kind of job would you prefer field-based survey work, for example collecting information about the numbers and distribution of species, or an office job (analysing and interpreting data, writing reports, etc.)?

B. Certain skills and abilities are important. Which of the following do you think you already have?

- enthusiasm for doing fieldwork in sometimes harsh conditions;
- competence in understanding and using statistics;
- the ability to use computer software for recording, analysing and presenting data and reports;
- research skills;
- excellent written communication and presentation skills;
- experience in report writing;
- confidence in using survey techniques;
- team-working and project-management skills;
- self-motivation, energy and drive.

Задание 2. Talking about experience. Посмотрите на пример и сформулируйте правило: в каких случаях используется Present Perfect и в каких Past Simple.

- How many CVs **have you reviewed**? How many candidates have you interviewed?
- This is a difficult question! It is true that **I have seen** quite a number of applications since **I started** this job in 2007.

Ask and answer questions about the following. Use Present Perfect.

- do fieldwork
- write a CV
- have a job interview
- prepare an environmental survey report
- participate in a conference
- communicate with foreign colleagues in English
- develop or use any software for data analysis

How did you feel? Nervous, excited, interested, or confused by the difficulties?

Задание 3. В объявлениях о приеме на работу найдите и запишите на русском языке информацию о вакансиях.

| | |
|--|--|
| Название компании (организации), отрасль | |
| Должность | |
| Обязанности | |
| Образование | |
| Опыт | |
| Личные качества | |

Vacancy 1. WLUK/WCWF has an excellent career opportunity for a full-time IT Engineer to support the Engineering Department on its daily computer and network operations. This position involves maintaining computers and servers related to television transmission and video automation systems, as well as business-side work stations. The candidate will be directly responsible for hands-on support of modern broadcast and IT equipment.

Responsibilities include, but are not limited to:

- Provide support in the management of Servers, Network Security and Network Services
- PC/Mac hardware/software support of on-site installing, servicing and repairing workstations
- Provide support for the technical needs of the News Department
- Assist with video equipment set-up and maintenance
- Assist Engineering with Transmitter and Master Control maintenance
- Assist with LAN and WAN related hardware and software maintenance
- Develop knowledge of facility specific IT needs and assist in supporting these systems
- Apply regular security updates
- Perform physical inventory of equipment
- Maintain digital telephone system

Requirements:

- Associates degree or higher in IT, electronics or computer related field
- 2 - 4 years of related broadcast experience
- A great team-oriented attitude and dedication to quality
- Strong familiarity with Microsoft, Mac and Linux operating systems
- Knowledge and competency in core hardware and computer system technologies, including installation, configuration, diagnosing, preventive maintenance and LAN/WAN networking
- Proficiency in troubleshooting problems and responding quickly under pressure
- Excellent communication skills
- Familiarity with Avid related software and hardware products a plus

Physical Demands/Work Environment:

- Must be able to work a flexible schedule
- On-call duty, including weekends and holidays
- Ability to lift computers and equipment generally less than 50 pounds

Vacancy 2. IT Specialist (OS/SYSANALYSIS)

There is one vacancy available at a potential USDA agency duty location per selection. This vacancy is located in the Technical Support Division (TSD), Technical Management Branch, Device Integration Services. Duty location must be in a USDA office.

Responsibilities

As an **IT Specialist (OS/SYSANALYSIS)**, you will:

- Conduct certification, acceptance and interoperability testing of new / updated software and hardware components and validate testing results prior to release to production.
- Develop functional requirements, testing plans, deployment plans and methods, and back-out plans for releases and introductions.
- Develop and update core operating system builds and core software loads for deployed hardware platforms.
- Work with senior specialist(s) in developing processes for requesting, assessing, approving, implementing, deploying, and reviewing changes to the infrastructure (change, release and configuration management processes and procedures).

- Work with senior specialist(s) in the planning, management, and coordinated rollout of software and hardware releases; in communication with assigned change manager; and in analyzing / determining trends or problems occurring as the result

Conditions of Employment

The experience may have been gained in either the public, private sector or volunteer service. One year of experience refers to full-time work; part-time work is considered on a prorated basis. To ensure full credit for your work experience, please indicate dates of employment by month/day/year, and indicate number of hours worked per week on your résumé.

Qualifications

You must meet the following requirements by the closing date of this announcement. Specialized experience for this position includes:

- Installing, troubleshooting and updating certified Commercial-Off-the-Shelf (COTS) and Government-Off-the-Shelf (GOTS) customized software on workstations/servers; AND
- Deploying applications, packages, configuration baselines and security updates to managed endpoints in a large enterprise environment using Microsoft Endpoint Manager (previously referred to as System Center Configuration Manager 2012) in an automated method; AND
- Administering and managing Microsoft Endpoint Manager back-end Infrastructure components; AND
- Supporting and administering various aspects of Microsoft Active Directory

In addition to meeting specialized experience, individuals must have IT-related experience demonstrating each of the four competencies listed below.

- **Attention to Detail-** Is thorough when performing work and conscientious about attending to detail.
- **Customer Service-** Works with clients and customers (that is, any individuals who use or receive the services or products that your work unit produces, including the general public, individuals who work in the agency, other agencies, or organizations outside the Government) to assess their needs, provide information or assistance, resolve their problems, or satisfy their expectations; knows about available products and services; is committed to providing quality products and services.
- **Oral Communication-** Expresses information (for example, ideas or facts) to individuals or groups effectively, taking into account the audience and nature of the information (for example, technical, sensitive, controversial); makes clear and convincing oral presentations; listens to others, attends to nonverbal cues, and responds appropriately.
- **Problem Solving-** Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives, and to make recommendations.

Задание 4.

А) Подготовка к собеседованию. Preparing for an interview. Choose a vacancy (from exercise 3). Prepare to talk about the following. Also prepare some questions that could be asked at an interview.

- Your education.
- Your experience (relevant jobs, apprenticeship, volunteer work).
- Relevant skills.
- Why you might be interested in a job in this sphere (your attitudes, interests and ambitions).

В) Проведение собеседования. В парах проведите собеседование.

Студент 1. Менеджер организации, проводящий собеседование и отбор кандидатов.

Студент 2. Кандидат.

Таблица 9. Критерии оценивания результатов проведения моделируемой ситуации

| Критерий | Результат |
|---|----------------|
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. При проведении интервью понимает задаваемые вопросы, дает уместные, грамотно сформулированные ответы с использованием сложных предложений, всех необходимых в конкретном контексте времен глаголов. Диапазон используемых студентом лексики и грамматических конструкций соответствует уровню. Практически не допускает грамматических ошибок и неточностей использования лексических единиц. Речь беглая, интонационно окрашенная. Неточности произношения отдельных слов не препятствуют пониманию речи слушателем. | 10 баллов |
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. Понимает задаваемые вопросы, дает уместные, грамотно сформулированные ответы с использованием сложных предложений, всех необходимых в конкретном контексте времен глаголов. Диапазон используемых студентом лексики и грамматических конструкций соответствует уровню, однако возможны затруднения в выборе подходящих слов, ошибки в воспроизведении сложных грамматических структур. | 8 баллов |
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. В целом понимает речь собеседника, может переспросить, если вопрос ему не совсем понятен. Диапазон используемых студентом лексики и грамматических конструкций ограничен, однако позволяет в основном выполнить задание. Возможны затруднения в выборе подходящих слов, грамматические ошибки, не затрудняющие понимания. | 5 баллов |
| Обучающийся не демонстрирует способности четко построить речь в соответствии с предложенным планом. Его высказывания односложны. Ошибки грамматического и лексического порядка затрудняют понимание речи. | менее 5 баллов |

Максимальное количество баллов – 10.

Таблица 9.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|---------|---------------------|
| 1 | менее 5 | неудовлетворительно |
| 2 | 5 | удовлетворительно |
| 3 | 8 | хорошо |
| 4 | 10 | отлично |

Комплект заданий для моделируемой ситуации «Конференция».

Моделируемая ситуация «Конференция»

1. Предварительно изучить подготовленные преподавателем методические указания по составлению научного доклада на иностранном языке (цель, структура и содержание доклада), а также лексический материал для написания доклада и его последующего обсуждения на конференции.
2. Составить текст доклада на иностранном языке по одной из тематик, предложенных преподавателем, либо по теме дипломного исследования.
3. Подготовить презентацию на иностранном языке для демонстрации основных положений рассматриваемой проблемы, используя современные технические средства.
4. Выступить перед аудиторией с докладом и презентацией (время выступления – 5-7 минут), принять активное участие в последующем обсуждении доклада на иностранном языке.
5. Подготовить вопросы на иностранном языке для обсуждения докладов других участников конференции. Принимать активное участие в обсуждении докладов.

Примерная тематика докладов:

- 1 Theoretical computer science
 - 1.1 Data structures and algorithms
 - 1.2 Theory of computation
 - 1.3 Information and coding theory
 - 1.4 Programming language theory
 - 1.5 Formal methods
- 2 Computer systems
 - 2.1 Computer architecture and computer engineering
 - 2.2 Computer performance analysis
 - 2.3 Concurrent, parallel and distributed systems
 - 2.4 Computer networks
 - 2.5 Computer security and cryptography
 - 2.6 Databases
- 3 Computer applications
 - 3.1 Computer graphics and visualization
 - 3.2 Human–computer interaction
 - 3.3 Scientific computing
 - 3.4 Artificial intelligence
- 4 Software engineering

Таблица 10. Критерии оценивания результатов проведения моделируемой ситуации

| Критерий | Результат |
|--|-----------|
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. Доклад отличается четкой структурой, присутствуют все необходимые компоненты: приветствие, представление себя, определение актуальности, цели, методов исследования, ожидаемых результатов. Речь обучающегося соответствует жанру научной речи с точки зрения логики аргументации, а также используемых лексических средств. Обучающийся умеет инициировать обсуждение проблемы и результатов исследования со слушателями. Диапазон используемых студентом лексики и грамматических конструкций соответствует уровню. Практически не допускает грамматических ошибок и неточностей использования лексических единиц. Речь беглая, интонационно окрашенная. | 20 баллов |

| Критерий | Результат |
|---|-----------------|
| Неточности произношения отдельных слов не препятствуют пониманию речи слушателем. | |
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. Доклад отличается четкой структурой, присутствуют все необходимые компоненты: приветствие, представление себя, определение актуальности, цели, методов исследования, ожидаемых результатов. Речь обучающегося соответствует жанру научной речи с точки зрения логики аргументации, а также используемых лексических средств. Обучающийся умеет инициировать обсуждение проблемы и результатов исследования со слушателями. Диапазон используемых студентом лексики и грамматических конструкций соответствует уровню, однако возможны затруднения в выборе подходящих слов, ошибки в воспроизведении сложных грамматических структур. | 15 баллов |
| Обучающийся демонстрирует умение логически верно, аргументировано и ясно строить устную речь. Доклад отличается четкой структурой, присутствуют все необходимые компоненты: приветствие, представление себя, определение актуальности, цели, методов исследования, ожидаемых результатов. Речь обучающегося соответствует жанру научной речи с точки зрения логики аргументации, а также используемых лексических средств. Диапазон используемых студентом лексики и грамматических конструкций ограничен, однако позволяет в основном выполнить задание. Возможны затруднения в выборе подходящих слов, грамматические ошибки, не затрудняющие понимания. | 10 баллов |
| Обучающийся не демонстрирует способности четко построить доклад в соответствии с предложенным планом. Его высказывания односложны. Ошибки грамматического и лексического порядка затрудняют понимание доклада. | Менее 10 баллов |

Максимальное количество баллов – 20.

Таблица 10.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|----------|---------------------|
| 1 | менее 10 | неудовлетворительно |
| 2 | 10 | удовлетворительно |
| 3 | 15 | хорошо |
| 4 | 20 | отлично |

5. Содержание оценочных средств промежуточной аттестации. Критерии оценивания.

Форма промежуточной аттестации по дисциплине: **зачет (1 семестр), экзамен (2 семестр).**

Форма проведения зачета: устно.

Задание для зачёта (УК-4.4): подготовить устный перевод текста профессионального содержания (домашнее чтение). Домашнее чтение представляет собой аутентичные тексты научных статей для перевода с английского языка на русский, которые могут выбираться студентами самостоятельно.

Студент подбирает материал в виде научных статей, монографий, учебных пособий по актуальным проблемам экологии, готовит полный перевод данного материала, используя англо-русские словари, грамматические справочники и материалы занятий, а также составляет список слов, которым может пользоваться во время сдачи. Слова следует выписывать по каждому абзацу отдельно для облегчения перевода при опросе.

Источником поиска материала может быть Интернет или библиотека. Уровень выбранного текста должен соответствовать лексико-грамматическому уровню изучаемого материала. Тематически статьи для домашнего чтения должны соответствовать пройденным текстам профессионального характера (тематика: Экология) или подбираются студентами, исходя из темы научного исследования.

По объему домашнее чтение составляет 60 страниц формата А4 (шрифт 14). На зачёте выполняется устный перевод отрывков текста по выбору преподавателя. Важнейшим требованием конечной адекватности перевода является его соответствие исходному тексту, отвечающее требованиям норм и правил построения текста в языке перевода.

Таблица 11. Критерии оценивания промежуточной аттестации в форме зачета

| Критерий | Результат |
|--|-----------------|
| Перевод выполнен в полном объеме, либо в объеме не менее 2/3 текста. Обучающийся демонстрирует знание лексико-грамматического материала в объеме, предусмотренном программой, знание стилистических особенностей научного текста, как на английском, так и на родном языке. Владеет способностью с достаточной степенью точности передавать идеи и информацию, содержащуюся в тексте. Текст перевода в целом соответствует нормам литературного языка и стилем научного изложения, хотя могут присутствовать некоторые незначительные отклонения от нормы. Могут встречаться лексические, грамматические и стилистические неточности, которые не препятствуют общему пониманию текста. | Более 12 баллов |
| Неполный перевод: менее 2/3 текста переведено без значительных ошибок и неточностей, которые затрудняют понимание текста. | Менее 12 баллов |

Максимальное количество баллов – 20.

Таблица 11.1. Шкала перевода баллов в оценки

| Оценка | Баллы |
|------------|-------|
| Зачтено | 12-20 |
| Не зачтено | 0-11 |

Форма проведения экзамена: по билетам.
Экзамен включает 3 задания.

Комплект экзаменационных билетов

Задание 1.

Письменно переведите предлагаемый отрывок текста по специальности со словарём.
Время выполнения задания - 45 минут (УК-4.4).

Задание 2.

Реферирование. Передайте содержание предлагаемого отрывка текста по специальности в виде резюме.

Время подготовки — 15 минут (УК-4.4, УК-4.6).

Задание 3.

Просмотровое чтение. Кратко передайте содержание предлагаемого отрывка текста на русском языке.

Время подготовки — 3 минуты (УК-4.4, УК-4.6).

Экзаменационный билет № 1

Задание 1. Письменный перевод текста.

Pascal

Pascal was begun in 1968 by Niklaus Wirth. Its development was mainly out of necessity for a good teaching tool. In the beginning, the language designers had no hopes for it to enjoy widespread adoption. Instead, they concentrated on developing good tools for teaching such as a debugger and editing system and support for common early microprocessor machines which were in use in teaching institutions.

Pascal was designed in a very orderly approach, it combined many of the best features of the languages in use at the time, COBOL, FORTRAN, and ALGOL. While doing so, many of the irregularities and oddball statements of these languages were cleaned up, which helped it gain users (Bergin, 100-101). The combination of features, input/output and solid mathematical features, made it a highly successful language. Pascal also improved the “pointer” data type, a very powerful feature of any language that implements it.

Pascal also helped the development of dynamic variables, which could be created while a program was being run, through the NEW and DISPOSE commands. However, Pascal did not implement dynamic arrays, or groups of variables, which proved to be needed and led to its downfall (Bergin, 101-102). Wirth later created a successor to Pascal, Modula-2, but by the time it appeared, C was gaining popularity and users at a rapid pace

Задание 2. Реферирование.

Operating Systems

Any desktop or laptop PC that you buy normally comes pre-loaded with Windows XP. Macintosh computers come pre-loaded with OS X. Many corporate servers use the Linux or UNIX operating systems. The operating system (OS) is the first thing loaded onto the computer - without the operating system, a computer is useless.

More recently, operating systems have started to pop up in smaller computers as well. If you like to tinker with electronic devices, you are probably pleased that operating systems can now

be found on many of the devices we use every day, from cell phones to wireless access points. The computers used in these little devices have gotten so powerful that they can now actually run an operating system and applications. The computer in a typical modern cell phone is now more powerful than a desktop computer from 20 years ago, so this progression makes sense and is a natural development. In any device that has an operating system, there's usually a way to make changes to how the device works. This is far from a happy accident; one of the reasons operating systems are made out of portable code rather than permanent physical circuits is so that they can be changed or modified without having to scrap the whole device.

For a desktop computer user, this means you can add a new security update, system patch, new application or often even a new operating system entirely rather than junk your computer and start again with a new one when you need to make a change. As long as you understand how an operating system works and know how to get at it, you can in many cases change some of the ways it behaves. And, it's as true of your cell phone as it is of your computer.

The purpose of an operating system is to organize and control hardware and software so that the device it lives in behaves in a flexible but predictable way. In this article, we'll tell you what a piece of software must do to be called an operating system, show you how the operating system in your desktop computer works and give you some examples of how to take control of the other operating systems around you.

Задание 3. Просмотровое чтение.

Computer Crimes

It's easy for computer crimes to go undetected if no one checks up on what the computer is doing. But even if the crime is detected, the criminal may walk away not only unpunished but with a glowing recommendation from his former employers.

Of course, we have no statistics on crimes that go undetected. But it's unsettling to note how many of the crimes we do know about were detected by accident, not by systematic audits or other security procedures. The computer criminals who have been caught may have been the victims of uncommonly bad luck.

For example, a certain keypunch operator complained of having to stay overtime to punch extra cards. Investigation revealed that the extra cards she was being asked to punch were for fraudulent transactions. In another case, disgruntled employees of the thief tipped off the company that was being robbed. An undercover narcotics agent stumbled on still another case. An employee was selling the company's merchandise on the side and using the computer to get it shipped to the buyers. While negotiating for LSD, the narcotics agent was offered a good deal on a stereo!

Экзаменационный билет № 2

Задание 1. Письменный перевод текста.

What Does an Operating System Do?

At the simplest level, an operating system does two things:

It manages the hardware and software resources of the system. In a desktop computer, these resources include such things as the processor, memory, disk space, etc. (On a cell phone, they include the keypad, the screen, the address book, the phone dialer, the battery and the network connection.)

It provides a stable, consistent way for applications to deal with the hardware without having to know all the details of the hardware.

The first task, managing the hardware and software resources, is very important, as various programs and input methods compete for the attention of the central processing unit (CPU) and

demand memory, storage and input/output (I/O) bandwidth for their own purposes. In this capacity, the operating system plays the role of the good parent, making sure that each application gets the necessary resources while playing nicely with all the other applications, as well as husbanding the limited capacity of the system to the greatest good of all the users and applications.

The second task, providing a consistent application interface, is especially important if there is to be more than one of a particular type of computer using the operating system, or if the hardware making up the computer is ever open to change. A consistent application program interface (API) allows a software developer to write an application on one computer and have a high level of confidence that it will run on another computer of the same type, even if the amount of memory or the quantity of storage is different on the two machines.

Задание 2. Реферирование.

System Bus

The system bus is a communication path between the microprocessor and peripherals; it is nothing but a group of wires to carry bits. In fact, there are several buses in the system that will be discussed in the next chapter. All peripherals (and memory) share the same bus; however, the microprocessor communicates with only one peripheral at a time. The timing is provided by the control unit of the microprocessor.

How Does the Microprocessor Work?

Assume that a program and data are already entered in the R/W memory. (How to write and execute a program will be explained later.) The program includes binary instruction to add given data and to display the answer at the seven-segment LEDs. When the microprocessor is given a command to execute the program, it reads and executes one instruction at a time and finally sends the result to the seven-segment LEDs for display.

This process of program execution can best be described by comparing it to the process of assembling a radio kit. The instructions for assembling the radio are printed in a sequence on a sheet of paper. One reads the first instruction, then picks up the necessary components of the radio and performs the task. The sequence of the process is *read*, *interpret*, and *perform*. The microprocessor works the same way. The instructions are stored sequentially in the memory. The microprocessor fetches the first instruction from its memory sheet, decodes it, and executes that instruction. The sequence of *fetch*, *decode*, and *execute* is continued until the microprocessor comes across an instruction to *stop*. During the entire process, the microprocessor uses the system bus to fetch the binary instruction and data from the memory. It uses registers from the register section to store data temporarily, and it performs the computing function in the ALU section. Finally, it sends out the result in binary, using the same bus lines, to the seven-segment LEDs.

Задание 3. Просмотровое чтение.

What is WiFi, and where is it used?

The world of modern telecommunication technology is awash with acronyms, long numbers and other weird bits of code that few people understand. The term WiFi should be relatively easy because it's a play on the words 'high-fidelity' or 'hi-fi', which means sound reproduction that is very similar to the original. But 'WiFi' doesn't really stand for wireless fidelity. It's simply a catchy term for equipment using a particular wireless communication standard, or protocol, known as IEEE 802.11 (more about this bit of code later). Using this standard, computers and other devices can link in a wireless local area network (WLAN), which is a number of computers or computer-like devices that can talk to each other using high-frequency radio waves instead of connecting cables. The WLAN can in turn be hooked into the internet, usually with the aid of a cable.

Basically, then, WiFi is a generic name for the main method by which a WLAN is set up. But the term WiFi, as well as the technology itself, has evolved quite a bit since it was first coined in about 2000 and is now used more broadly, particularly by the general public, to mean a wide range of wireless communication technologies.

Экзаменационный билет № 3

Задание 1. Письменный перевод текста.

WiFi uses

Perhaps the most visible manifestation of WiFi is the coffee-shop laptop tuned cordlessly into a WLAN and hence into the worldwide web, but some phone users might also be doing it by WiFi. VoIP ('voice over the internet protocol') phones enable users to speak to others via the internet. The increasing availability of WiFi means that people with VoIP phones can use them more and more like mobile phones, talking with friends and colleagues over the internet from the same coffee-shop in which they connect their laptops to the worldwide web.

WiFi is used in many other applications as well. Some televisions are going WiFi, allowing viewers to wander about their houses with their own portable screens. One company recently offered a camera that connects to the internet via WiFi, allowing people to email photos to friends and colleagues directly from their cameras. A more mundane but widespread use of WiFi is in communication between computers and peripheral devices such as printers and projectors.

The great advantage of WiFi over wired networks is that it does not require wires to connect it to a network. Potentially, WiFi and other wireless technologies could be made available everywhere to everyone, not only helping a business person on the move but also remote communities that might otherwise wait years for cables to reach them.

Задание 2. Реферирование.

Microprocessor Instruction Set and Computer Languages

Microprocessors recognize and operate in binary numbers. However, each microprocessor has its own binary words, meanings, and language. The words are formed by combining a number of bits for a given machine. The word (or word length) is defined as the number of bits the microprocessor recognizes and processes at a time. The word length ranges from four bits for small, microprocessor-based systems to 64 bits for high-speed large computers. Another term commonly used to express word length is byte. A byte is defined as a group of eight bits. For example, a 16-bit microprocessor has a word length equal two bytes. The term nibble, which stands for a group of four bits, is found also in popular computer magazines and books. A byte has two nibbles.

Each machine has its own set of instructions based on the design of its CPU or of microprocessor. To communicate with the computer, one must give instructions in binary language (machine language). Because it is difficult for most people to write programs sets of 0s and 1s, computer manufacturers have devised English-like words to represent binary instructions of a machine. Programmers can write programs, called assembly language programs, using these words. Because an assembly language is specific to a given machine, programs written in assembly language are not transferable from one machine another. To circumvent this limitation, such general-purpose languages as BASIC and FORTRAN have been devised; a program written in these languages can be machine-independent. These languages are called high-level languages. This section deals with various aspects of these three types of languages; machine, assembly and high-level. The machine and assembly languages are discussed in the context of the 8085 microprocessor.

Задание 3. Просмотровое чтение.

The Bare Bones

Not all computers have operating systems. The computer that controls the microwave oven in your kitchen, for example, doesn't need an operating system. It has one set of tasks to perform, very straightforward input to expect (a numbered keypad and a few pre-set buttons) and simple, never-changing hardware to control. For a computer like this, an operating system would be unnecessary baggage, driving up the development and manufacturing costs significantly and adding complexity where none is required. Instead, the computer in a microwave oven simply runs a single hard-wired program all the time.

For other devices, an operating system creates the ability to:

- serve a variety of purposes
- interact with users in more complicated ways
- keep up with needs that change over time

All desktop computers have operating systems. The most common are the Windows family of operating systems developed by Microsoft, the Macintosh operating systems developed by Apple and the UNIX family of operating systems (which have been developed by a whole history of individuals, corporations and collaborators). There are hundreds of other operating systems available for special-purpose applications, including specializations for mainframes, robotics, manufacturing, real-time control systems and so on.

Экзаменационный билет № 4

Задание 1. Письменный перевод текста.

Where is WiFi heading?

WiFi has become very popular very quickly, to the point that in certain sectors of the economy it is almost a prerequisite for doing business. Some hotels would probably lose custom if they didn't offer WiFi to their guests, who expect to be able to log on before they nod off. WiFi-less coffee shops might be bypassed by laptop-toting latte drinkers wanting to connect while they caffeinate.

The number of uses to which WiFi could be put is almost limitless. In the home, electrical equipment such as the refrigerator, television, lighting system, microwave and stereo equipment could all be linked and regulated by WiFi. The technology also has exciting possibilities in environmental science.

But perhaps the single greatest advantage of wireless networks over wired technologies is that they are more flexible about the infrastructure required to set them up. That's why community groups have latched onto them, and it is also why they are being pursued in developing countries, where they can be used to bypass the very expensive business of laying cables.

WiFi technology is not without problems, security being one of the biggest. But few people think it is a passing fad. So where is WiFi heading?

Predicting the evolution of information technology is not easy, especially given its current extraordinary rate of change: this month's boom product might be next month's landfill. But a few things about WiFi seem certain: speeds will increase, the range of uses to which it is put will broaden and its availability will continue to spread. It will also face more competition.

Задание 2. Реферирование.

Microprocessor Instruction Set and Computer Languages

Microprocessors recognize and operate in binary numbers. However, each microprocessor has its own binary words, meanings, and language. The words are formed by combining a number of bits for a given machine. The word (or word length) is defined as the number of bits the microprocessor recognizes and processes at a time. The word length ranges from four bits for small, microprocessor-based systems to 64 bits for high-speed large computers. Another term commonly used to express word length is byte. A byte is defined as a group of eight bits. For example, a 16-bit microprocessor has a word length equal two bytes. The term nibble, which stands for a group of four bits, is found also in popular computer magazines and books. A byte has two nibbles.

Each machine has its own set of instructions based on the design of its CPU or of microprocessor. To communicate with the computer, one must give instructions in binary language (machine language). Because it is difficult for most people to write programs sets of 0s and 1s, computer manufacturers have devised English-like words to represent binary instructions of a machine. Programmers can write programs, called assembly language programs, using these words. Because an assembly language is specific to a given machine, programs written in assembly language are not transferable from one machine another. To circumvent this limitation, such general-purpose languages as BASIC and FORTRAN have been devised; a program written in these languages can be machine-independent. These languages are called high-level languages. This section deals with various aspects of these three types of languages; machine, assembly and high-level. The machine and assembly languages are discussed in the context of the 8085 microprocessor.

Задание 3. Просмотровое чтение.

Client/Server Architecture

Internet applications, such as the Web, are based on the concept of client/server architecture. In a client/server architecture, some application programs act as information providers (servers), while other application programs act as information receivers (clients). The client/server architecture is not one-to-one. That is, a single client can access many different servers, and a single server can be accessed by a number of different clients. Usually, a user runs a client application, such as a Web browser, that contacts one server at a time to obtain information. Because it only needs to access one server at a time, client software can run on almost any computer, including small handheld devices such as personal organizers and cellular telephones (these devices are sometimes called Web appliances). To supply information to others, a computer must run a server application. Although server software can run on any computer, most companies choose large, powerful computers to run server software because the company expects many clients to be in contact with its server at any given time. A faster computer enables the server program to return information with less delay.

Экзаменационный билет № 5

Задание 1. Письменный перевод текста.

Integrated Circuits

Late in the 1960s the integrated circuit, or IC, was introduced, making it possible for many transistors to be fabricated on the silicon substrate, with inter-connecting wires plated in place.

The IC resulted in a further reduction in price, size, and failure rate. The microprocessor became a reality in the mid-1970s with the introduction of the large-scale integrated (LSI) circuit and, later, the very large-scale integrated (VLSI) circuit (microchip), with many thousands of interconnected transistors etched into a single silicon substrate.

To return, then, to the “switch-checking” capabilities of a modern computer: computers in the 1970s were generally able to check eight switches at a time. That is, they could deal with eight binary digits, or bits, of data at every cycle. A group of eight bits is called byte, each byte containing 256 possible patterns of ONs and OFFs (or 1s and 0s). Each pattern is the equivalent of an instruction, a part of an instruction, or a particular type of datum, such as a number or a character or a graphics symbol. The pattern 11010010, for example, might be binary data-in this case, the decimal number 210- or it might tell the computer to compare data stored in its switches to data stored in certain memory-chip location.

The development of processors that can handle 16, 32, and 64 bits of data at a time has increased the speed of computers. The complete collection of recognizable patterns- the total list of operations- of which a computer is capable is called its instruction set. Both factors- number of bits at a time, and size of instruction sets- continue to increase with the ongoing development of modern digital computers.

Задание 2. Реферирование.

Computer Crimes (1)

More and more, the operations of our businesses, governments, and financial institutions are controlled by information that exists only inside computer memories. Anyone clever enough to modify this information for his own purposes can reap substantial rewards. Even worse, a number of people who have done this and been caught at it have managed to get away without punishment.

These facts have not been lost on criminals or would-be criminals. A recent Stanford Research Institute study of computer abuse was based on 160 case histories, which probably are just the proverbial tip of the iceberg. After all, we only know about the unsuccessful crimes. How many successful ones have gone undetected is anybody's guess.

Here are a few areas in which computer criminals have found the pickings all too easy.

Banking. All but the smallest banks now keep their accounts on computer files. Someone who knows how to change the numbers in the files can transfer funds at will. For instance, one programmer was caught having the computer transfer funds from other people's accounts to his wife's checking account. Often, traditionally trained auditors don't know enough about the workings of computers to catch what is taking place right under their noses.

Business. A company that uses computers extensively offers many opportunities to both dishonest employees and clever outsiders. For instance, a thief can have the computer ship the company's products to addresses of his own choosing. Or he can have it issue checks to him or his confederates for imaginary supplies or services. People have been caught doing both.

Credit Cards. There is a trend toward using cards similar to credit cards to gain access to funds through cash-dispensing terminals. Yet, in the past, organized crime has used stolen or counterfeit credit cards to finance its operations. Banks that offer after-hours or remote banking through cash-dispensing terminals may find themselves unwillingly subsidizing organized crime.

Задание 3. Просмотровое чтение.

Machine Language

The number of bits in a word for a given machine is fixed, and words are formed through various combinations of these bits. For example, a machine with a word length of eight bits can

have 256 (28) combinations of eight bits—thus a language of 256 words. However, not all of these words need to be used in the machine. The microprocessor design engineer selects combinations of bit patterns and gives a specific meaning to each combination by using electronic logic circuits; this is called an instruction. Instructions are made up of one word or several words. The set of instructions designed into the machine makes up its machine language—a binary language, composed of 0s and 1s—that is specific to each computer. In this book, we are concerned with the language of a widely used microprocessor, the 8085, manufactured by Intel Corporation. The primary focus here is on the microprocessor because the microprocessor determines the machine language and the operations of a microprocessor-based system. The 8085 is a microprocessor with 8-bit word length: its instruction set (or language) is designed by using various combinations of these eight bits. The 8085 is an improved version of the earlier processor 8080A.

Экзаменационный билет № 6

Задание 1. Письменный перевод текста.

Network Names and Addresses

To be connected to the Internet, a computer must be assigned a unique number, known as its IP (Internet Protocol) address. Each packet sent over the Internet contains the IP address of the computer to which it is being sent. Intermediate routers use the address to determine how to forward the packet. Users almost never need to enter or view IP addresses directly. Instead, to make it easier for users, each computer is also assigned a domain name; protocol software automatically translates domain names into IP addresses. For example, the domain name `encarta.msn.com` specifies a computer owned by Microsoft (names ending in `.com` are assigned to computers owned by commercial companies), and the corresponding IP address is `207.46.228.91`.

Users encounter domain names when they use applications such as the World Wide Web. Each page of information on the Web is assigned a URL (Uniform Resource Locator) that includes the domain name of the computer on which the page is located. For example, a user can enter the URL

`http://encarta.msn.com/category/physcience.asp`

to specify a page in the domain `encarta.msn.com`. Other items in the URL give further details about the page. For example, the string `http` specifies that a browser should use the `http` protocol, one of many TCP/IP protocols, to fetch the item. The string `category/physcience.asp` specifies a particular document.

Задание 2. Реферирование.

Electronic Computers

During World War II a team of scientists and mathematicians, working at Bletchley Park, north of London, created one of the first all-electronic digital computers: Colossus. By December 1943, Colossus, which incorporated 1500 vacuum tubes, was operational. It was used by the team, headed by Alan Turing, in the largely successful attempt to crack enciphered German radio messages.

Independently of this, in the United States, a prototype electronic machine had been built as early as 1939, by John Atanasoff and Clifford Berry at Iowa State College. This prototype and later research was completed quietly and later overshadowed by the development of the Electronic Numerical Integrator And Computer (ENIAC) in 1945. ENIAC was granted a patent, which was overturned decades later, in 1973, when the machine was revealed to be highly derivative of Atanasoff-Berry Computer (ABC).

ENIAC contained 1800 vacuum tubes and had a speed of several hundred multiplications per minute, but its program was wired into the processor and had to be manually altered. Later machines were built with program storage, based on ideas of the Hungarian-American mathematician John von Neumann. The instructions were stored within so-called memory, freeing the computer from the speed limitations of paper tape reader during execution and permitting problems to be solved without rewiring the computer.

The use for the transistor in computers in the late of 1950s marked advent smaller, faster and more versatile logical elements than were possible with vacuum-tube machines. Because transistors use much less power and have much longer life, this development alone was responsible for the improved machines called second-generation computers. Components became smaller, as did intercomponent spacings, and the system became much less expensive to build.

Задание 3. Просмотровое чтение.

Bandwidth

Computers store all information as binary numbers. The binary number system uses two binary digits, 0 and 1, which are called bits. The amount of data that a computer network can transfer in a certain amount of time is called the bandwidth of the network and is measured in kilobits per second (kbps) or megabits per second (mbps). A kilobit is 1 thousand bits; a megabit is 1 million bits. A dial-up telephone modem can transfer data at rates up to 56 kbps; DSL and cable modem connections are much faster and can transfer at several mbps. The Internet connections used by businesses often operate at 155 mbps, and connections between routers in the heart of the Internet may operate at rates from 2,488 to 9,953 mbps (9.953 gigabits per second) The terms wideband or broadband are used to characterize networks with high capacity and to distinguish them from narrowband networks, which have low capacity.

Экзаменационный билет № 7

Задание 1. Письменный перевод текста.

Other Internet Applications

Although the World Wide Web is the most popular application, other Internet applications are widely used. For example, the Telnet application enables a user to interactively access a remote computer. Telnet gives the appearance that the user's keyboard and screen are connected directly to the remote computer. For example, a businessperson who is visiting a location that has Internet access can use Telnet to contact their office computer. Doing so is faster and less expensive than using dial-up modems.

The Internet can also be used to transfer telephone calls using an application known as IP-telephony. This application requires a special phone that digitizes voice and sends it over the Internet to a second IP telephone. Another application, known as the File Transfer Protocol (FTP), is used to download files from an Internet site to a user's computer. The FTP application is often automatically invoked when a user downloads an updated version of a piece of software. Applications such as FTP have been integrated with the World Wide Web, making them transparent so that they run automatically without requiring users to open them. When a Web browser encounters a URL that begins with ftp:// it automatically uses FTP to access the item.

Задание 2. Реферирование.

Computer Crimes (2)

Theft of Information. Much personal information about individuals is now stored in computer files. An unauthorized person with access to this information could use it for blackmail. Also, confidential information about a company's products or operations can be stolen and sold to unscrupulous competitors. (One attempt at the latter came to light when the competitor turned out to be scrupulous and turned in the people who were trying to sell him stolen information.)

Software Theft. The software for a computer system is often more expensive than the hardware. Yet this expensive software is all too easy to copy. Crooked computer experts have devised a variety of tricks for getting these expensive programs printed out, punched on cards, recorded on tape, or otherwise delivered into their hands. This crime has even been perpetrated from remote terminals that access the computer over the telephone.

Theft of Time-Sharing Services. When the public is given access to a system, some members of the public often discover how to use the system in unauthorized ways. For example, there are the "phone freakers" who avoid long distance telephone charges by sending over their phones control signals that are identical to those used by the telephone company.

Since time-sharing systems often are accessible to anyone who dials the right telephone number, they are subject to the same kinds of manipulation.

Of course, most systems use account numbers and passwords to restrict access to authorized users. But unauthorized persons have proved to be adept at obtaining this information and using it for their own benefit. For instance, when a police computer system was demonstrated to a school class, a precocious student noted the access codes being used; later, all the student's teachers turned up on a list of wanted criminals.

Задание 3. Просмотровое чтение.

Virtual reality

Virtual reality is a new paradigm in computer-human interaction, in which three-dimensional computer-generated worlds are created. They have the effect of containing objects that have their own location in three-dimensional space. The user's perception of this computer-generated world is similar to the perception of the real world.

User perception in virtual reality can be via a variety of senses, including sight, sound, touch, and force. Virtual environments often, but not necessarily, provide the effect of surrounding the user with virtual objects.

The user interacts with the virtual environment using several interaction techniques. In order to create the effect of interactive three-dimensional objects, the virtual environment must be processed and presented at a near-real-time rate of 10 frames/s or greater.

More precisely, we define virtual reality as the use of computer systems and interfaces to create the effect of an interactive three-dimensional environment, called the virtual environment, which contains objects which have spatial presence.

Таблица 12. Критерии оценивания промежуточной аттестации в форме экзамен

| Критерий | Результат |
|--|------------------|
| Общая адекватность перевода текста в полном объеме, высокая степень точности передачи информации и идей, содержащихся в тексте. Обучающийся не испытывает трудностей в понимании и формулировке на русском языке даже сложных концепций. Сложноподчиненные предложения, предложения, содержащие грамматические конструкции высокого уровня сложности (причастия и причастные обороты, цепочки существительных и др.) не вызывают трудностей при переводе. Обучающийся способен | 20 баллов |

| Критерий | Результат |
|---|-----------|
| подобрать наиболее точный перевод многозначных слов, учитывая общий контекст статьи в целом, а также ближайший контекст на уровне словосочетания, предложения. Не испытывает трудностей в переводе специализированных терминов. Демонстрирует высокую степень способности к смысловой контекстуальной догадке. Отсутствуют смысловые искажения. Текст - грамматически корректен, лексико-терминологические единицы и синтаксические структуры, характерные для научного стиля речи, соответствуют норме и узусу языка перевода. При переводе текста без использования словаря (устный реферативный перевод) обучающийся способен передать до 90% текста без смысловых искажений. При выполнении реферативного перевода допускаются неточности перевода лексических единиц, могут быть опущены некоторые детали, особенно в случае перевода предложений с большим количеством второстепенных членов, придаточных предложений, предложений, содержащих длинные цепочки существительных. | |
| Перевод выполнен в полном объеме, но встречаются лексические, грамматические и стилистические неточности, которые не препятствуют общему пониманию текста, однако не согласуются с нормами литературного языка и стилем научного изложения. Обучающийся не испытывает трудностей в понимании и формулировке на русском языке даже сложных концепций. Сложноподчиненные предложения, предложения, содержащие грамматические конструкции высокого уровня сложности в редких случаях вызывают трудности при формулировке перевода. Это приводит к стилистическим недостаткам текста перевода, однако обучающийся не допускает искажения общего смысла высказывания. Обучающийся способен подобрать наиболее точный перевод многозначных слов, учитывая общий контекст статьи в целом, а также ближайший контекст на уровне словосочетания, предложения. Не испытывает трудностей в переводе специализированных терминов. При переводе текста без использования словаря (устный реферативный перевод) способен передать от 70% текста без смысловых искажений. При выполнении реферативного перевода допускаются неточности перевода лексических единиц, могут быть опущены некоторые детали, особенно в случае перевода предложений с большим количеством второстепенных членов, придаточных предложений, предложений, содержащих длинные цепочки существительных. | 15 баллов |
| Переведено более 2/3 текста с многочисленными лексическими, грамматическими и стилистическими ошибками, которые затрудняют общее понимание текста. Не владеет специализированной терминологией в полном объеме, предусмотренном программой. Реферативный перевод выполнен в объеме не менее 50 %. | 10 баллов |
| неполный перевод: менее 2/3 текста переведено без значительных ошибок и неточностей, которые затрудняют понимание текста. При устном реферативном переводе – менее половины текста переведено без искажений. Не владеет специализированной терминологией, включенной в программу. | |

Максимальное количество баллов – 20.

Таблица 12.1. Шкала перевода баллов в оценки

| № | Баллы | Оценка |
|---|----------|---------------------|
| 1 | менее 10 | неудовлетворительно |
| 2 | 10 | удовлетворительно |
| 3 | 15 | хорошо |
| 4 | 20 | отлично |