

Приложение ПСССЗ/ППКРС по специальности 09.02.07 Информационные системы и программирование 2022-2023 уч.г.: Комплект контрольно-оценочных средств учебной дисциплины  
ОГСЭ.04 Иностранный язык в профессиональной деятельности

МИНИСТЕРСТВО ОБРАЗОВАНИЯ БЕЛГОРОДСКОЙ ОБЛАСТИ  
ОБЛАСТНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ПРОФЕССИОНАЛЬНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ  
«АЛЕКСЕЕВСКИЙ КОЛЛЕДЖ»

**Комплект  
контрольно-оценочных средств**

по учебной дисциплине

**ОГСЭ.04 Иностранный язык в профессиональной  
деятельности**

для специальности

**09.02.07 Информационные системы и программирование**

Алексеевка – 2022

Комплект контрольно-оценочных средств разработан на основе  
Федерального государственного образовательного стандарта среднего  
профессионального образования по специальности 09.02.07  
Информационные системы и программирование

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## 1. Паспорт комплекта оценочных средств

### 1.1 Область применения комплекта оценочных средств

Контрольно-оценочные средства (КОС) предназначены для контроля и оценки образовательных достижений обучающихся, освоивших программу учебной дисциплины ОГСЭ.04 Иностранный язык в профессиональной деятельности. КОС включают контрольные материалы для проведения текущей и промежуточной аттестации в форме дифференцированного зачета.

КОС разработан на основании рабочей программы учебной дисциплины ОГСЭ.04 Иностранный язык в профессиональной деятельности.

### 1.2. Цели и задачи учебной дисциплины – требования к результатам освоения учебной дисциплины:

В результате освоения учебной дисциплины обучающийся должен уметь:

У1 - понимать общий смысл четко произнесенных высказываний на известные темы (профессиональные и бытовые);

У2 - понимать тексты на базовые профессиональные темы;

У3 - участвовать в диалогах на знакомые общие и профессиональные темы

У4 - строить простые высказывания о себе и о своей профессиональной деятельности;

У5 - кратко обосновывать и объяснить свои действия (текущие и планируемые);

У6-писать простые связные сообщения на знакомые или интересующие профессиональные темы правила построения простых и сложных предложений на профессиональные темы.

В результате освоения учебной дисциплины обучающийся должен знать:

З1- правила построения простых и сложных предложений на профессиональные темы;

З2- основные общеупотребительные глаголы (бытовая и профессиональная лексика);

З3- лексический минимум, относящийся к описанию предметов, средств и процессов профессиональной деятельности;

З4- особенности произношения;

З5- правила чтения текстов профессиональной направленности.

Профессиональные (ПК) и общие (ОК) **компетенции**, которые актуализируются при изучении учебной дисциплины:

ОК 1. Выбирать способы решения задач профессиональной деятельности, применительно к различным контекстам

ОК 4. Работать в коллективе и команде, эффективно взаимодействовать с коллегами, руководством, клиентами.

ОК 6. Проявлять гражданско-патриотическую позицию, демонстрировать осознанное поведение на основе традиционных общечеловеческих ценностей.

ОК 10. Пользоваться профессиональной документацией на государственном и иностранном языках.

**Перечень знаний, умений, навыков в соответствии со спецификацией стандарта компетенции Ворлдскиллс Корпоративная защита от внутренних угроз информационной безопасности, которые актуализируются при изучении учебной дисциплины:**

- 1) знать и понимать: важность умения слушать собеседника как части эффективной коммуникации;
- 2) уметь: выстраивать эффективное письменное и устное общение.

**Планируемые личностные результаты освоения рабочей программы**

ЛР 1. Осознающий себя гражданином и защитником великой страны.

ЛР 4. Проявляющий и демонстрирующий уважение к людям труда, осознающий ценность собственного труда. Стремящийся к формированию в сетевой среде лично и профессионального конструктивного «цифрового следа».

ЛР 5. Демонстрирующий приверженность к родной культуре, исторической памяти на основе любви к Родине, родному народу, малой родине, принятию традиционных ценностей многонационального народа России.

ЛР 7. Осознающий приоритетную ценность личности человека; уважающий собственную и чужую уникальность в различных ситуациях, во всех формах и видах деятельности.

ЛР 8. Проявляющий и демонстрирующий уважение к представителям различных этнокультурных, социальных, профессиональных и иных групп. Сопричастный к сохранению, преумножению и трансляции культурных традиций и ценностей многонационального российского государства.

ЛР 10. Заботящийся о защите окружающей среды, собственной и чужой безопасности, в том числе цифровой.

ЛР 11. Проявляющий уважение к эстетическим ценностям, обладающий основами эстетической культуры.

### 1.3 Результаты освоения учебного предмета, подлежащие проверке

Наименование тем	Коды умений (У), знаний (З), личностных результатов (ЛР), формированию которых способствует элемент программы	Средства контроля и оценки результатов обучения в рамках текущей аттестации (номер задания)	Средства контроля и оценки результатов обучения в рамках промежуточной аттестации (номер задания/контрольного вопроса/ экзаменационного билета)
<b>Раздел 1.</b> Образование в России	<i>ЛР1, ЛР7, У1, У3, У5, 32, 34</i>	Текст №1	Практическое задание №1 Практическое задание №2
<b>Раздел 2.</b> Образование в США и Великобритании	<i>ЛР8, У1, У3, У5, 32, 34</i>	Текст №2	Практическое задание №1 Практическое задание №2
<b>Раздел 3</b> СМИ	<i>ЛР8, У1, У3, У5, 32, 34</i>	Текст №3	Практическое задание №1 Практическое задание №2
<b>Раздел 4</b> Соединенное Королевство и США	<i>ЛР8, У1, У3, У5, 32, 34</i>	Текст №4 Текст №5	Практическое задание №1 Практическое задание №2
<b>Раздел 5.</b> Традиции и обычаи	<i>ЛР8, У1, У3, У5, 32, 34</i>	Текст №6 Текст №7	Практическое задание №1 Практическое задание №2
<b>Раздел 6.</b> Литература и искусство	<i>ЛР5, ЛР11 У1, У3, У5, 32, 34</i>	Текст №8 Текст №9	Практическое задание №1 Практическое задание №2
<b>Раздел 7.</b> Наука и ученые	<i>ЛР10, У1, У3, У5, 32, 34</i>	Текст №10 Текст №11	Практическое задание №1 Практическое задание №2
<b>Раздел 8.</b> Информационное общество	<i>ЛР1, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №12 Текст №13	Практическое задание №1 Практическое задание №2
<b>Раздел 9.</b> Что такое оборудование?	<i>ЛР1, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №14 Текст №15	Практическое задание №1 Практическое задание №2
<b>Раздел 10.</b> Обработка информации	<i>ЛР1, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №16 Текст №17 Текст №18	Практическое задание №1 Практическое задание №2
<b>Раздел 11.</b> Функциональное устройство компьютера	<i>ЛР1, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №19 Текст №20	Практическое задание №1 Практическое задание №2
<b>Раздел 12</b> Устройство ввода и вывода данных	<i>ЛР1, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №21 Текст №22	Практическое задание №1 Практическое задание №2
<b>Раздел 13</b> Эволюция микроэлектроники	<i>ЛР4, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №23 Текст №24	Практическое задание №1 Практическое задание №2
<b>Раздел 14</b> Компьютерные системы	<i>ЛР4, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №25 Текст №26	Практическое задание №1 Практическое задание №2
<b>Раздел 15</b> Информационно-коммуникационные технологии	<i>ЛР4, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №27 Текст №28 Текст №29	Практическое задание №1 Практическое задание №2
<b>Раздел 16</b> Программирование	<i>ЛР4, ЛР10, У1, У2, У3, У4, У6, 31, 32, 33, 34, 35</i>	Текст №30 Текст №31 Текст №32	Практическое задание №1 Практическое задание №2

## 2. Комплект оценочных средств для текущей аттестации

### 2.1. Текстовые задания

- прочтите текст
- сделайте перевод текста
- ответьте на вопросы, выполните задание.

#### Текст №1

##### Education in Russia

Every citizen of our country has the right to education. This right is guaranteed by the Constitution. It is not only a right but a duty, too. Every boy or girl must get secondary education. They go to school at the age of six or seven and must stay there until they are 14-17 years old. At school pupils study academic subjects, such as Russian, "Literature, Mathematics, History, Biology, a foreign language and others.

After finishing 9 forms of a secondary school young people can continue their education in the 10-th and the 11-th form. They can also go to a vocational or technical school, where they study academic subjects and receive a profession. A college gives general knowledge in academic subjects and a profound knowledge in one or several subjects.

After finishing a secondary, vocational, technical school or a college, young people can start working or enter an institute or a university. Institutes and universities train specialists in different fields. A course at an institute or a university usually takes 5 years. Many universities have evening and extramural departments. They give their students an opportunity to study without leaving their jobs. Institutes and universities usually have graduate courses which give candidate or doctoral degrees.

Education in this country is free at most schools. There are some private primary and secondary schools where pupils have to pay for their studies. Students of institutes and universities get scholarships. At many institutes and universities there are also departments where students have to pay for their education.

#### Answer the questions:

1. What does the phrase «the right to education» mean?
2. Why is education a duty, too?
3. What subjects do pupils study at school?
4. What can young people do after finishing the 9th form?
5. Do children and people in this country have to pay for education?

#### Текст №2

##### Education in the USA

Education in the United States of America is compulsory for children from the age of 6 till 16 (or 18). It involves 12 years of schooling. A school year starts at the end of August or at the beginning of September and ends in late June or early July. The whole school year is divided into three terms/trimesters or four quarters. American students have winter, spring and summer holidays which last 2 or 3 weeks and 6 or 8 weeks, respectively. The length of the school year varies among the states as well as the day length. Students go to school 5 days a week.

The American education system consists of 3 basic components: elementary, secondary and higher education. There is also such a notion as preschool education. At the age of 4 or 5

children just get acquainted with the formal education in a nursery school. The preschool education programme aims to prepare children for elementary school through playing and help them to acquire the experience of association. It lasts for one year. Then they go to the first grade (or grade 1).

Elementary education starts when pupils are 6 years old. The programme of studies in the elementary school includes the following subjects: English, Arithmetic, Geography, History of the USA, Natural sciences, Physical Training, Singing, Drawing, wood or metal work. The education is mostly concentrated on the basic skills (speaking, reading, writing and arithmetic). Sometimes children also learn some foreign languages, general history and such new subjects as drug and sex education. The main goal of elementary education is the general intellectual, social and physical development of a pupil from 5 to 12 or 15 years old.

Secondary education begins when children move on to high or secondary school in the ninth grade, where they continue their studies until the twelfth grade. The secondary school curriculum is built around specific subjects rather than general skills. Although there is always a number of basic subjects in the curriculum: English, Mathematics, Science, Social Studies and Physical Education, the students have an opportunity to learn some elective subjects, which are not necessary for everybody. After the first two years of education they can select subjects according to their professional interests. The electives are to be connected with the students' future work or further education at university or college. Every high school has a special teacher — a guidance counselor who helps the students to choose these elective subjects. Moreover, he helps them with some social problems, too. The elective courses are different in various schools.

Members of each grade in high school have special names: students in the ninth grade are called freshmen, tenth graders are called sophomores, eleventh graders are juniors and as for twelfth graders, they are seniors.

After graduating from high schools the majority of the Americans go on studying at higher education establishments. In universities they have to study for four years to get a bachelor's degree. In order to get a master's degree they must study two years more and, besides, be engaged in a research work.

### **Answer the questions:**

1. At what age do American students start and finish their compulsory education?
2. How are the school years called in the United States?
3. The length of the school year varies among the states, doesn't it?
4. What are the basic components of American education?
5. Do all children have to attend a nursery school?
6. What is the main aim of elementary education?

### **Текст №3**

#### **Newspapers in Britain**

If you get on a bus or catch a train in Britain, especially during the morning and evening «rush hour», you'll see a lot of people reading newspapers. The press tells us about various political views, interest and levels of education.

Papers are usually divided into «quality» papers which are serious with long, informative articles and «popular» which have smaller size. They are less serious and contain more human interest stories than news.

More daily newspapers, national and regional are sold in Great Britain than in most other developed countries.

There are about 135 daily papers and Sunday papers, 2000 weekly papers and about 100 papers produced by members of ethnic groups.

A lot of people buy a morning paper, an evening paper and a couple of Sunday papers. On an average day two out of three people over the age of 15 read a national morning paper, about three out of four read a Sunday paper. So it's not surprising to learn that national newspapers have a circulation of 15.8 million copies on weekdays and 19 million on Sundays.

Newspapers are almost always financially independent of any political party.

However, during general election campaigns many papers recommend their readers to vote for a particular political party.

Ownership of the national London and regional daily newspapers is concentrated in the hands of large press publishing groups.

### **Television in Great Britain**

Critics claim that the golden age of television occurred in the 1950's.

Various fads have swept the television scene — e. g. westerns, doctor and lawyer shows, cops-and-robbers series, rural comedies.

Sports coverage of baseball, golf and especially professional football is currently in vogue.

Late evening talk shows are currently popular. Recently controversies involving television have concerned children's programming, the issue of violence, and the right of TV to broadcast controversial news programs. Psychologists have argued that the presentation of violence on television might lead young people to regard violence as acceptable behaviour. TV is a major factor in British life.

The British spend a great deal of time watching television. Some people watch one program, and then they are tempted to watch the next one as well, when perhaps they ought to be doing something else.

The more intelligent people, however, choose their programs very carefully. They find out what they really want to watch by studying the printed programs, and do not allow themselves to waste too much time.

#### **Answer the questions:**

1. What does press tell us?
2. What kind of papers do you know?
3. «Popular» papers are usually smaller than «quality ones, aren't they?
4. What can be read in «quality» newspaper?
5. Who is the owner of newspapers in Britain?

### **Текст №4**

#### **Great Britain**

The full name of the country is the United Kingdom of Great Britain and Northern Ireland. The United Kingdom is situated on the British Isles. The British Isles consist of two large islands, Great Britain and Ireland, and a great number of small islands. Their total area is over 314 000 sq. km. The British Isles are separated from the European continent by the North Sea and the English Channel. The western coast of Great Britain is washed by the Atlantic Ocean and the Irish Sea. Northern Ireland occupies one third of the island of Ireland. It borders on the Irish Republic in the south. The island of Great Britain consists of three main parts: England (the southern and middle part of the island), Wales (a mountainous peninsula in the West) and Scotland (the northern part of the island).

There are no high mountains in Great Britain. In the north the Cheviots separate England from Scotland, the Pennines stretch down North England along its middle, the Cambrian mountains occupy the greater part of Wales and the Highlands of Scotland are the tallest of the British mountains. There is very little flat country except in the region known as East Anglia. Most of the rivers flow into the North Sea. The Thames is the deepest and the longest of the British rivers. Some of the British greatest ports are situated in the estuaries of the



Thames, Mersey, Trent, T Clyde and Bristol Avon. Great Britain is not very rich in mineral resources, it has some deposits of coal and iron ore and vast deposits of oil and gas that were discovered in the North Sea.

The warm currents of the Atlantic Ocean influence the climate of Great Britain. Winters are not severely cold and summers are rarely hot. The population of the United Kingdom is over 58 million people. The main nationalities are: English, Welsh, Scottish and Irish. In Great Britain there are a lot of immigrants from former British Asian and African colonies. Great Britain is a highly industrialized country. New industries have been developed in the last three decades. The main industrial centres are London, Birmingham, Manchester, Leeds, Liverpool, Glasgow and Bristol. The capital of the country is London. The United Kingdom is a parliamentary monarchy.

**Answer the questions:**

1. Where is the United Kingdom situated?
2. What islands do the British Isles consist of?
3. What ocean and seas are the British Isles washed by?
4. How many parts does the Island of Great Britain consist of and what are they called?
5. What country does Northern Ireland border on?
6. What city is the capital of the U. K.?
7. What kind of state is Great Britain?

**Текст №5**

**The United States of America**

The United States of America is the fourth largest country in the world (after Russia, Canada and China). It is called the United States, the US, the USA, the States, America. The USA occupies the southern part of Northern America, Alaska in the north and some islands, including the Hawaii in the Pacific Ocean. The total area of the country is over nine and a half million square kilometers. The USA borders on Mexico in the south and Canada in the North. It has sea border with Russia, too. The western coast of the country is washed by the Pacific Ocean, and its eastern coast — by the Atlantic Ocean.

The USA comprises 50 states and one federal district, the District of Columbia, and has several territories. The capital of the country is Washington, D. C, situated in the district of Columbia. The population of the country is about 250 million people who live mostly in cities and towns. The population of Washington is about 3 million people. The USA is a very large country and has different climatic regions. The coldest regions are in the north and north-east of the country. The climate of the south of the USA is subtropical, Alaska has arctic climate. The climate along the Pacific coast is much warmer than that of the Atlantic coast because of the warm winds blowing from the Gulf of Mexico. The USA is a state of rivers and lakes. America's largest rivers are the Mississippi, the Missouri, the Rio Grande and the Columbia. The Great Lakes on the border with Canada are the deepest and the largest in the USA. The highest mountains are the Rocky Mountains, the Cordillera and the Sierra Nevada.

The USA is rich in natural and mineral resources. It produces copper, iron ore and coal. It is a highly developed industrial and agricultural country. The most important manufacturing industries of the USA produce planes, cars, textiles, radio and television sets, armaments and paper. The USA became the world leading country in the 19th century.

The USA is a presidential republic. The highest legislative body of the country is the Congress. It consists of two parts: the House of Representatives and the Senate. Each state elects two senators for four years. A senator must be at least 30 years old, a citizen of the USA for 9 years, and live in the state he represents. The job of the Congress is to make laws,

declare war, impeach the President, approve the justices that the President appoints to the Supreme Court.

The executive branch of the government is the President and the Cabinet of Ministers. The President is elected every four years. He must be at least 35 years old, born in the USA, a citizen of the country for 14 years, and be a civilian. The President can sign or veto a bill, ask the Congress to declare war, appoint justices to the Supreme Court.

The judicial branch of the government is the Supreme court. Its job is to enforce laws. The Supreme Court can decide if the law is constitutional or not. The three branches work together to protect the Constitution and the rights of people.

**Answer the questions:**

1. Where is the USA situated?
2. What is the size of the USA?
3. What city is the capital of the USA?
4. It is a highly developed industrial and agricultural country, isn't it?
5. What kind of state is the USA?

**Текст №6**

**Holidays in Great Britain**

There are eight public, or bank holidays in Great Britain, that is, days when banks and offices are closed. They are: Christmas Day, Boxing Day, New Year's Day, Good Friday, Easter Monday, Mayday, Spring Bank Holiday and Late Summer Bank Holiday. The observance of these days is no longer limited to banks. All the public holidays, except Christmas Day and Boxing Day observed on the 25 and 26 of December respectively, do not fall on the same day each year. Most of these holidays are of religious origin, though for the greater part of the population they have long lost their religious significance and are simply days on which people relax and make merry. Certain customs and traditions are associated with most bank holidays. The reason is that many of them are part of holiday seasons, like Easter and Christmas seasons. Besides public holidays, there are celebrations, festivals, and simply days, on which certain traditions are observed, but unless they fall on a Sunday, there are ordinary working days.

February, 14 is St. Valentine's Day. It is a day for choosing sweethearts and exchanging love tokens. Generations of young people have considered St. Valentine to be the friend and patron of lovers and have sent gifts and hand-made valentines to their sweethearts. A valentine was a colourful card with a short verse composed by the sender. Now thousands of ready-made valentines are sent through the post every year.

Pancake Day is a popular name for Shrove Tuesday — the last day of enjoyment before the fasting of Lent. On this day Christians confessed their sins to a priest. Many people still traditionally eat pancakes. One of the main events of this day is the pancake race at Olney. The competitors in the race are local housewives who make their pancakes and run from the village square to the church.

The fourth Sunday in Lent is Mothering Sunday — a day of small family reunions. On this day absent sons and daughters return to the homes and make gifts to their mothers.

April, 1 is April Fool's Day — the day when practical jokes are played. Any person may be made in April Fool between midnight and noon. Children are, of course, very keen supporters of the tradition. You can step in a basin of water, or receive a letter with a deceiving message. If you are young and innocent, you can be sent to fetch some non-existing thing, like pigeon's milk.

Another popular British tradition is Halloween, celebrated on October, 31, the eve of All Saints' Day. Halloween's customs dated back to a time, when people believed in devils, witches and ghosts. They thought that they could do all kinds of damage to property. Some

people tried to ward off the witches by painting magic signs or nailing a horseshoe. Today the day is marked by costume-balls or fancy-dress parties. On the night of Halloween children or grown-ups visit houses and ask the residents if they want 'trick' or 'treat'. If the people in the house give children a 'treat' (money or sweets), then the children will not play trick on them. Another Halloween custom is to scrape out a pumpkin, cutting eyes, nose and mouth in its side and lighting a candle inside. This is made to scare the friends.

**Task:**

**Translate the following sentences into English.**

1. Во время официальных праздников все банки, почтовые отделения и большая часть офисов и магазинов закрыты, однако соблюдение этих праздников больше не ограничивается банками.
2. Многие из них имеют религиозное происхождение, но давно потеряли свое религиозное значение, и сейчас это просто дни, в которые люди отдыхают и веселятся.
3. В день Св. Валентина, друга и покровителя всех влюбленных, люди обмениваются символами любви.
4. Раньше люди посылали свои возлюбленным самодельные валентинки, которые содержали стихи, написанные отправителем, сейчас посылают готовые валентинки.
5. Во вторник на масленой неделе обычно христиане исповедовались в своих грехах священнику и ели блины, сейчас одно из основных событий дня — бег с блинами в Олни.
6. Апрельский день смеха — это день, когда вас разыгрывают, и эта традиция с энтузиазмом поддерживается детьми.
7. Традиции Хэллоуина, кануна Дня всех святых, восходят ко времени, когда люди верили в чертей, привидения и ведьм и пытались отпугнуть их, рисуя магические значки или прибывая подкову.
8. Сейчас этот день отмечается костюмированными балами и маскарадами, люди также выскребают тыквы, чтобы пугать друзей.

**Текст №7**

**British Traditions and Customs**

British nation is considered to be the most conservative in Europe. It is not a secret that every nation and every country has its own customs and traditions. In Great Britain people attach greater importance to traditions and customs than in other European countries. Englishmen are proud of their traditions and carefully keep them up. The best examples are their queen, money system, their weights and measures.

There are many customs and some of them are very old. There is, for example, the Marble Championship, where the British Champion is crowned; he wins a silver cup known among folk dancers as Morris Dancing. Morris Dancing is an event where people, worn in beautiful clothes with ribbons and bells, dance with handkerchiefs or big sticks in their hands, while traditional music- sounds.

Another example is the Boat Race, which takes place on the river Thames, often on Easter Sunday. A boat with a team from Oxford University and one with a team from Cambridge University hold a race.

British people think that the Grand National horse race is the most exciting horse race in the world. It takes place near Liverpool every year. Sometimes it happens the same day as the Boat Race takes place, sometimes a week later. Amateur riders as well as professional jockeys can participate. It is a very famous event.

There are many celebrations in May, especially in the countryside.

Halloween is a day on which many children dress up in unusual costumes. In fact, this holiday has a Celtic origin. The day was originally called All Halloween's Eve, because it

happens on October 31, the eve of all Saint's Day. The name was later shortened to Halloween. The Celts celebrated the coming of New Year on that day.

Another tradition is the holiday called Bonfire Night.

On November 5, 1605, a man called Guy Fawkes planned to blow up the Houses of Parliament where the king James 1st was to open Parliament on that day. But Guy Fawkes was unable to realize his plan and was caught and later, hanged. The British still remember that Guy Fawkes' Night. It is another name for this holiday. This day one can see children with figures, made of sacks and straw and dressed in old clothes. On November 5th, children put their figures on the bonfire, burn them, and light their fireworks.

In the end of the year, there is the most famous New Year celebration. In London, many people go to Trafalgar Square on New Year's Eve. There is singing and dancing at 12 o'clock on December 31st.

A popular Scottish event is the Edinburgh Festival of music and drama, which takes place every year. A truly Welsh event is the Eisteddfod, a national festival of traditional poetry and music, with a competition for the best new poem in Welsh.

If we look at English weights and measures, we can be convinced that the British are very conservative people. They do not use the internationally accepted measurements. They have conserved their old measures. There are nine essential measures. For general use, the smallest weight is one ounce, then 16 ounce is equal to a pound. Fourteen pounds is one stone.

The English always give people's weight in pounds and stones. Liquids they measure in pints, quarts and gallons. There are two pints in a quart and four quarts or eight pints are in one gallon. For length, they have inches» foot, yards and miles.

If we have always been used to the metric system therefore the English monetary system could be found rather difficult for us. They have a pound sterling, which is divided into twenty shillings, half-crown is cost two shillings and sixpence, shilling is worth twelve pennies and one penny could be changed by two halfpennies.

### **Questions:**

1. What nation is considered to be the most conservative in Europe?
2. What are the best examples of their conservatism?
3. What are the most popular English traditions?
4. What is the original name of Halloween?
5. What is a popular Scottish event?
6. What is the Eisteddfod?
7. What peculiarities of the English monetary system do you know?

## **Текст №8**

### **Libraries**

The word library comes from the Latin word liber, meaning "a book". This is a place where information in print (books, manuscripts, periodicals and musical scores) and in other forms is collected and arranged to serve people of all ages and interests.

Libraries appeared in ancient times in Egypt, Assyria, Greece and Rome. Perhaps the most famous library of that early day was at Alexandria. It was founded by Ptolomy I. Ptolomy ordered the librarians to collect all Greek texts as well as manuscripts in other languages from every part of the known world. By the middle of the 1st century BC there were about 700,000 papyrus rolls in the library.

The first libraries in Russia were established in medieval monasteries. Public libraries were opened in the 19 century at the Academy of Sciences and Moscow University.

The library today is a centre for all kinds of communications: printed, pictured, recorded, and even electronically stored. People go to the library to read, look, listen, search, inquire, relax, discuss, learn, and think.

Libraries can be found in many places. There are libraries in small towns and large cities, and there are libraries in schools, universities, colleges. The largest and best known libraries in the world are: the British National Library in London, the Library of Congress in Washington and the Russian State Library.

The national libraries of different countries keep in touch and exchange books and information. Most libraries have a professionally educated staff whose first duty is to help you. Librarians also select and purchase books and other materials, organize materials so that you can easily use them, answer questions about facts, people, events, or advise you how to find the information you need.

Many people have books at home. These are the books of their favourite authors, dictionaries and reference books and the like. My family also has a home library. It was my grandfather who started to collect it at the beginning of the century. There are over two thousand books in it. The authors I like most of all are Chekhov, Bulgakov, Fitzgerald, Cortasar and others.

### **Questions:**

1. What word does the word "library" come from?
2. What is a library?
3. Where did the first libraries appear?
4. What do you know about the famous library at Alexandria?
5. What is the library today?
6. Where can libraries be found?
7. Why do people go to libraries?
8. What are the famous libraries of the world?
9. What do we call the people who help us in libraries?
10. Have you got any books at home?
11. Who are your favourite authors?
12. Do you often borrow books from the library?

## **Текст №9**

### **The Tretyakov Gallery**

Moscow is replete with art galleries and museums. Yet there is one gallery that remains a symbol of Russian art. It is the world-famous Tretyakov Gallery.

The founder of the gallery was the entrepreneur Pavel Tretyakov (1832—1898), who was from the merchant class. Beginning in 1856, Tretyakov had a

hobby of collecting works by the Russian artists of his time. He was a famous patron of the arts who helped to support the "peredvizhniki" (a movement consisting of realistic painters in the second half of the 19th century). Toward this goal, he intended to purchase a collection from a St. Petersburg collector, Fyodor Pryanishnikov, and, having added his own collection, created a museum. The government bought Pryanishnikov's gallery in 1867, but Tretyakov gradually acquired an excellent collection, exceeding all other collections in Russia in its volume and quality.

In 1892, Pavel Tretyakov donated his entire collection to Moscow. His brother Sergey Tretyakov (1834—1892) was also a collector, but only of Western European paintings.

The brothers' collections were at the core of the Moscow Municipal Art Gallery, which opened on August 15, 1893. At first, it contained 1,287 paintings and 518 pieces of graphic art by Russian artists, as well as 75 paintings by Western European artists.

Later, the Western European paintings in the Tretyakov Gallery were transferred to the Hermitage and the A. S. Pushkin Museum of Fine Arts, and the Tretyakov Gallery began to specialize exclusively in Russian art.

After 1918, the Tretyakov collection grew many times with the inclusion of the collection of Ilya Ostroukhov (1858— 1929), an artist, paintings of the Russian school from the Moscow Rumyantsev Museum, and many private collections. Presently, the gallery is being improved by carefully planned purchases. Already more than 55 thousand works are kept there. There is the rich collection of ancient Russian icon painting of the 12th—17th centuries including Andrei Rublyov's famous "Trinity", as well as significant works of painting and sculpture of the 18th — 19th centuries — paintings by Dmitriy Levitskiy, Fyodor Rokotov, Karl Bryullov, Orest Kiprenskiy, Alexander Ivanov (including his well known canvas "The Appearance of Christ Before the People"), Ivan Kramskoy, and sculptures by Fedot Shubin.

The gallery has an excellent selection of the best works by the "peredvizhniki": Ilya Repin (including "Ivan the Terrible and His Son Ivan"), Victor Vasnetsov, Ivan Shishkin, Vasiliy Surikov ("The Morning of the Strelets Execution"), Vasiliy Vereshchagin and others.

The blossoming of many areas of Russian art at the end of the 19th and the beginning of the 20th centuries is also well represented.

Suffice it to name such artists of the period as Mikhail Vrubel, Isaak Levitan, Nicholas Rerikh, Alexander Benua, Mikhail Nesterov, Konstantin Korovin, Mstislav Dobuzhinskiy, Konstantin Somov, Valentin Serov, Boris Kustodiev and Kuzma Petrov-Vodkin. After the relatively short period of the 1910's— 1920's, new movements in art — futurism, cubism, etc. — were quickly developed.

Such an artistic movement as socialist realism also produced a number of talented and original artists. This trend is represented by works of Alexander Deineka, Arkadiy Plastov, Yuri Pimenov, Dmitriy Nalbandyan, and others.

The main building of the gallery includes the renovated Tretyakov home and several buildings that were attached to it at various times. The main facade of the building was erected in 1902 according to plans by the artist Victor Vasnetsov. In 1994, the Tretyakov Gallery opened after 10 years of restoration. This was not just a facelift to the building; the interior and technical equipment were brought up to the highest standards of quality, which is as it should be, since it contains so many treasures of Russian art.

### Questions:

1. When did Pavel Tretyakov begin to collect Russian paintings?
2. Whose works was he especially fond of?
3. What do you know about the *Peredvizhniki*?
4. Where did Tretyakov keep his collection?
5. When did he open his collection to the public?
6. What did Tretyakov do with his collection?
7. Who was *The Trinity* painted by?
8. Do you know any other famous icon-painters?
9. What 18th century portrait-painters do you know?
10. Why is the second half of the 19th century especially well represented at the Gallery?
11. What great Russian names are linked with the *Peredvizhniki*?
12. What turn-of-the-century Russian artists do you know?
13. Where are canvases of modern painters housed?
14. When did you last go to the Tretyakov Gallery?
15. Who are your favourite Russian painters?

## COMPUTER REVOLUTION

50 years ago people didn't even heard of computers, and today we cannot imagine life without them.

Computer technology is the fastest-growing industry in the world. The first computer was the size of a minibus and weighed a ton. Today, its job can be done by a chip the size of a pin head. And the revolution is still going on.

Very soon we'll have computers that we'll wear on our wrists or even in our glasses and earrings.

The next generation of computers will be able to talk and even think for themselves. They will contain electronic "neural networks". Of course, they'll be still a lot simpler than human brains, but it will be a great step forward. Such computers will help to diagnose illnesses, find minerals, identify criminals and control space travel.

Some people say that computers are dangerous, but I don't agree with them.

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

On-line shopping makes it possible to find exactly what you want at the best price, saving both time and money.

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

All in all, I strongly believe that computers are a useful tool. They have changed our life for the better. So why shouldn't we make them work to our advantage?

### **Questions**

1. Have you got a computer?
2. Do you think it's a useful tool?
3. Will computers become smaller in the future?
4. Can the Internet help you to do your homework?
5. Can computers help us to learn foreign languages?
6. Do you play computer games?
7. What are the advantages of on-line shopping?
8. What are the advantages of e-mail?
9. Do you think that computers are bad for health?
10. Some people have made friends through the Internet. What about you?
11. Some people say that computers make us less sociable. Do you agree?
12. What will the next generation of computers be able to do?

## **Текст №11**

### **GREAT INVENTIONS**

#### **Television (1920s)**

The invention that swept the world and changed leisure habits for countless millions was pioneered by Scottish-born electrical engineer John Logie Baird.

It had been realised for some time that light could be converted into electrical impulses, making it possible to transmit such impulses over a distance and then reconvert them into light.

#### **Motor Car (Late 19th Century)**

With television, the car is probably the most widely used and most useful of all leisure-inspired inventions. German engineer Karl Benz produced the first petrol-driven car in 1885 and the British motor industry started in 1896. Henry Ford was the first to use assembly line production for his Model T car in 1908. Like them or hate them, cars have given people great freedom of travel.

#### **Electricity**

The name came from the Greek word for amber and was coined by Elizabeth I's physician William Gilbert who was among those who noticed that amber had the power to attract light objects after being rubbed. In the 19th century such great names as Michael Faraday, Humphry Davy, Alessandro Volta and Andre Marie Ampere all did vital work on electricity.

### **Photography (Early 19th Century)**

Leonardo da Vinci had described the camera obscura photographic principle as early as 1515. But it was not until 1835 that Frenchman Louis Daguerre produced camera photography. The system was gradually refined over the years, to the joy of happy snappers and the despair of those who had to wade through friends' endless holiday pictures.

### **Telephone (1876)**

Edinburgh-born scientist Alexander Graham Bell patented his invention of the telephone in 1876. The following year, the great American inventor Thomas Edison produced the first working telephone. With telephones soon becoming rapidly available, the days of letter-writing became numbered.

### **Computer (20th Century)**

The computer has been another life-transforming invention. British mathematician Charles Babbage designed a form of computer in the mid-1830s, but it was not until more than a century later that theory was put into practice. Now, a whole generation has grown up with calculators, windows, icons, computer games and word processors, and the Internet and e-mail have transformed communication and information.

### **Aeroplane**

The plane was the invention that helped shrink the world and brought distant lands within easy reach of ordinary people. The invention of the petrol engine made flight feasible and the American Wright brothers made the first flight in 1903.

## **Текст №12**

### **COMPUTER LITERACY**

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

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

In an information society a person who is computer-literate need not be an expert on the design of computers. He needn't even know much about how to prepare *programs* which are the instructions that direct the operations of computers. All of us are already on the way to becoming computer-literate. Just think of your everyday life. If you receive a subscription magazine in the post-office, it is probably addressed to you by a computer. If you buy something with a bank credit card or pay a bill by check, computers help you process the information. When you check out at the counter of your store, a computer assists the checkout clerk and the store manager. When you visit your doctor, your schedules and bills and special services, such as laboratory tests, are prepared by computer. Many actions that you have taken or observed have much in common. Each relates to some aspect of a data processing system.

### **Questions:**



1. What does "a computer-literate person" mean?
2. Are you aware of the potential of computers to influence your life?
3. What do the people mean by "the basics"?
4. What is the role of computers in our society?
5. What is "computing"?
6. What is a program?
7. Prove that we all are on the way to becoming computer-literate.
8. Give examples of using computers in everyday life.

**Прочтите, переведите и запомните следующие выражения:**

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

**Текст №13**

## **WHAT IS A COMPUTER?**

A computer is a machine with an intricate network of electronic circuits that operate switches or magnetize tiny metal cores. The switches, like the cores, are capable of being in one or two possible states, that is, on or off; magnetized or demagnetized. The machine is capable of storing and manipulating numbers, letters, and characters (symbols).

The basic idea of a computer is that we can make the machine do what we want by inputting signals that turn certain switches on and turn others off, or magnetize or do not magnetize the cores.

The basic job of computers is processing of information. For this reason computers can be defined as devices which accept information in the form of instructions, called a program, and characters, called data, perform mathematical and / or logical operations on the information, and then supply results of these operations. The program, or part of it, which tells the computers what to do and the data, which provide the information needed to solve the problem, are kept inside the computer in a place called memory.

It is considered that computers have many remarkable powers. However most computers, whether large or small, have three basic capabilities.

First, computers have circuits for performing arithmetic operations, such as: addition, subtraction, division, multiplication and exponentiation.

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

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

A computer can solve a series of problems and make thousands of logical decisions without

becoming tired. It can find the solution to a problem in a fraction of the time it takes a human being to do the job.

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

**Questions:**

1. What is a computer?
2. What are the two possible states of the switches?
3. What are the main functions of a computer?
4. In what way can we make the computer do what we want?
5. What is the basic task of a computer?
6. In what form does a computer accept information?
7. What is a program?
8. What are data?
9. What is memory?
10. What three basic capabilities have computers?
11. What are the ways of inputting information into the computer?
12. What is the function of an input device?
13. What devices are used for outputting information?
14. What decisions can the computer make?
15. What are the computer's achievements limited by?

**Найдите в тексте английские эквиваленты следующих словосочетаний:**

Сложная сеть электронных цепей; управлять (приводить в действие) переключателями; возможные состояния; хранить (запоминать) числа; обрабатывать символы; посредством ввода сигналов; включать; выключать; размагничивать сердечники; обработка информации; информация в виде команд; символы, называемые данными; выполнять математические операции; выдавать результаты; обеспечивать необходимую информацию; иметь замечательные возможности; основные свойства; сложение, вычитание, деление, умножение; возведение в степень; средства для общения с пользователем; устройство ввода; дисковод; считывать информацию; вывод информации; катодно-лучевая трубка; принимать решения; выполнять тысячи логических операций; без усталости; находить решение задачи; значительно меньший промежуток времени; человек; нудная рутинная работа; в соответствии с введенной программой; вырабатывать свои суждения; возможности ограничены программой, заложенной в него человеком; дать требуемую информацию; электрические импульсы; со скоростью света; мгновенно производить огромное количество математических операций; человеку может не хватить всей жизни, чтобы закончить работу.

**Текст №14**

## THE FIRST COMPUTERS

In 1930 the first *analog* computer was built by American named Vannevar Bush. This device was used in WbrldW&r II to help aim guns.

Many technical developments of electronic *digital* computers took place in the 1940s and 1950s. Mark I, the name given to the first digital computer, was completed in 1944. The man responsible for this invention was Professor Howard Aiken. This was the first machine that could figure out long lists of mathematical problems at a very fast rate

In 1946 two engineers at the University of Pennsylvania, J.Eckert and J.Maushly, built their digital computer with vacuum tubes. They named their new invention ENIAC (the Electronic Numerical Integrator and Calculator).

Another important achievement in developing computers came in 1947, when John von Neumann developed the idea of keeping instructions for the computer inside the computer's memory. The contribution of John von Neumann was particularly significant. As contrasted with Babbage's analytical engine, which was designed to store only data, von Neumann's machine, called the Electronic Discrete Variable Computer, or EDVAC, was able to store both data and instructions. He also contributed to the idea of storing data and instructions in a *binary code* that uses only ones and zeros. This simplified computer design. Thus computers use two conditions, high voltage, and low voltage, to translate the symbols by which we communicate into unique combinations of electrical pulses. We refer to these combinations as codes.

Neumann's stored program computer as well as other machines of that time were made possible by the invention of the vacuum tube that could control and amplify electronic signals. Early computers, using vacuum tubes, could perform computations in thousandths of seconds, called milliseconds, instead of seconds required by mechanical devices.

### **Questions:**

1. When was the first analog computer built?
2. Where and how was that computer used?
3. When did the first digital computers appear?
4. Who was the inventor of the first digital computer?
5. What could that device do?
6. What is ENIAC? Decode the word.
7. What was J. Neumann's contribution into the development of computers?
8. What were the advantages of EDVAC in comparison with ENIAC?
9. What does binary code mean?
10. Due to what invention could the first digital computers be built?

**Найдите в тексте английские эквиваленты следующих словосочетаний.**

Цифровые компьютеры; технические усовершенствования; совершенствование компьютеров; ответственный за изобретение; математические задачи; электронные трубки; важное достижение; запоминающее устройство; значительный вклад; двоичный код; высокое напряжение; низкое напряжение; электрические импульсы; тысячная доля секунды.

### **Текст №15**

#### **WHAT IS A COMPUTER?**

Computer is a device for processing information. Computer has no intelligence by itself and is called hardware. A computer system is a combination of four elements:

- Hardware
- Software
- Procedures
- Data/information

Software are the programmes that tell the hardware how to perform a task. Without software instructions, the hardware doesn't know what to do.

The basic job of the computer is the processing of information. Computers take information in the form of instructions called programs and symbols called data. After that they perform various mathematical and logical operations, and then give the results (information). Computer is used to convert data into information. Computer is also used to store information in the digital form.

### **WHAT IS HARDWARE?**

Webster's dictionary gives us the following definition of the hardware — *the devices composing a computer system.*

Computer hardware can be divided into four categories:

- 1) input hardware
- 2) processing hardware
- 3) storage hardware
- 4) output hardware.

#### *Input hardware*

Input hardware collects data and converts them into a form suitable for computer processing. The most common input device is a keyboard. It looks very much like a typewriter. The mouse is a hand-held device connected to the computer by a small cable. As the mouse is rolled across the desktop, the cursor moves across the screen. When the cursor reaches the desired location, the user usually pushes a button on the mouse once or twice to give a command to the computer.

Another type of input hardware is optic-electronic scanner. Microphone and videocamera can be also used to input data into the computer.

## **Текст №16**

### **COMPUTER OPERATIONS. TYPES OF DATA**

Much of the processing computers can be divided into two general types of operation. **Arithmetic operations** are computations with numbers such as addition, subtraction, and other mathematical procedures. Early computers, performed mostly arithmetic operations, which gave the false impression that only engineers and scientists could benefit from computers. Of equal importance is the computers ability to compare two values to determine if one is larger than, smaller than, or equal to the other. This is called a logical operation. The comparison may take place between numbers, letters, sounds, or even drawings. The processing of the computer is based on the computer's ability to Perform logical and arithmetic operations.

Instructions must be given to the computer to tell it how to process the data it receives and the format needed for output and storage. The ability to follow the program sets computers apart from most tools. However, new tools ranging from typewriters to microwave ovens have embedded computers, or built-in computers. An embedded computer can accept data to use several options in it's program, but the program itself cannot be changed. This makes these devices flexible and convenient but not the embedded computers itself.

#### **Types of data**

With the advent of new computer applications and hardware, the definition of data has expanded to include many types.

**Numeric data** consists of numbers and decimal points, as well as the plus (+) and minus(-) signs. Both arithmetic operations and logical operations are performed on numeric data. This means that numbers can be used for calculations as well as sorted and compared to each other.

Text, or **textual data**, can contain any combination of letters, numbers and special characters. Sometimes textual data is known as **alphanumeric data**.

Various forms of **data** that we can hear and see makes up **audio-visual data**. The computer can produce sounds, music and even human voice. It can also accept audio information as an input. Data can also take form of drawings and video sequences.

**Physical data** is captured from the environment. For example, light, temperature and pressure are all types of physical data. In many large buildings, computer systems process several kinds of physical data to regulate operations. Computers can set off security alarms, control temperature and humidity, or turn lights on and off, all in response to physical data. These applications increase people's safety and save the time and money.

## Текст №17

### DATA PROCESSING AND DATA PROCESSING SYSTEMS

The necessary data are processed by a computer to become useful information. In fact this is the definition of data processing. *Data* are a collection of facts — unorganized but able to be-organized into useful information. *Processing* is a series of actions or operations that convert inputs into outputs. When we\*<sup>1</sup> speak of data processing, the input is data, and the output is useful information. So, we can define *data processing* as a series of actions or operations that converts data into useful information.

We use the term *data processing system* to include the resources that are used to accomplish the processing of data. There are four types of resources: people, materials, facilities, and equipment. People provide input to computers, operate them, and use their output. Materials, such as boxes of paper and printer ribbons, are consumed in great quantity. Facilities are required to house the computer equipment, people and materials. The need for converting facts into useful information is not a phenomenon of modern life. Throughout history, and even prehistory, people have found it necessary to sort data into forms that were easier to understand. For example, the ancient Egyptians recorded the ebb and flow of the Nile River and used this information to predict yearly crop yields. Today computers convert data about land and water into recommendations to farmers on crop planting. Mechanical aids to computation were developed and improved upon in Europe, Asia, and America throughout the seventeenth, eighteenth, and nineteenth centuries. Modern computers are marvels of an electronics technology that continues to produce smaller, cheaper, and more powerful components.

#### Basic data processing operations

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

*Inputting* is the process of entering data, which are collected facts, into a data processing system. *Storing* is saving data or information so that they are available for initial or for additional processing. *Processing* represents performing arithmetic or logical operations on data in order to convert them into useful information. *Outputting* is the process of producing useful information, such as a printed report or visual display. *Controlling* is directing the manner and sequence in which all of the above operations are performed

#### Data storage hierarchy

It is known that data, once entered, are organized and stored in successively more comprehensive groupings. Generally, these groupings are called a data storage hierarchy. The general groupings of any data storage hierarchy are as follows.

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

### **Questions:**

1. What is processing?
2. What is data processing?
3. What does the term of data processing system mean?
4. What basic operations does a data processing system include?
5. What is inputting / storing / outputting information?
6. What do you understand by resources?
7. How did ancient Egyptians convert facts into useful information?
8. When were mechanical aids for computation developed?
9. What does data storage hierarchy mean?
10. What are the general groupings of any data storage hierarchy?

### **Найдите в тексте английские эквиваленты следующих словосочетаний:**

Системы обработки информации; определение (термина) обработки данных; совокупность фактов; последовательность действий; преобразование входных данных в полезную информацию; включать ресурсы; завершить обработку данных; обеспечивать ввод информации в компьютер; ленты принтера; расходовать в большом количестве; размещать компьютерное оборудование; нуждаться (требовать) в приспособлениях; явление современной жизни; на протяжении доисторического периода; превращать информацию в выражения; регистрировать отливы и приливы; прогнозировать урожай зерновых культур; механические средства вычисления; ввод данных; хранение данных; первоначальная обработка данных; дополнительная обработка; выдача полезной информации; напечатанное сообщение; зрительное отображение; последовательность запоминания информации; записанные символы языка; элементы информации; база данных; набор взаимосвязанных файлов

### **Текст №18**

#### **ADVANTAGES OF COMPUTER DATA PROCESSING**

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

1. *Accuracy.* Once data have been entered correctly into the computer component of a data processing system, the need for further manipulation by humans is eliminated, and the possibility of error is reduced. Computers, when properly programmed, are also unlikely to make computational errors. Of course, computer systems remain vulnerable to the entry by humans of invalid data.

2. *Ease of communications.* Data, once entered, can be transmitted wherever needed by communications networks. These may be either earth or satellite-based systems. A travel reservations system is an example of a data communications network. Reservation clerks throughout the world may make an enquiry about transportation or lodgings and receive an almost instant response. Another example is an office communications system that provides executives with access to a reservoir of data, called a corporate data base, from their personal microcomputer workstations.

3. *Capacity of storage.* Computers are able to store vast amounts of information, to organize it, and to retrieve it in ways that are far beyond the capabilities of humans. The amount of data that can be stored on devices such as magnetic discs is constantly increasing. All the while, the cost per character of data stored is decreasing.

4. *Speed.* The speed, at which computer data processing systems can respond, adds to

their value. For example, the travel reservations system mentioned above would not be useful if clients had to wait more than a few seconds for a response. The response required might be a fraction of a second. Thus, an important objective in the design of computer data processing systems is to allow computers to do what they do best and to free humans from routine, error-prone tasks. The most cost-effective computer data processing system is the one that does the job effectively and at the least cost. By using computers in a cost-effective manner, we will be better able to respond to the challenges and opportunities of our post-industrial, information-dependent society.

**Questions:**

1. What capabilities should data-processing systems combine when designed?
2. What are the main advantages of computers?
3. What do you know of computers accuracy?
4. What is the function of communication networks?
5. Give examples of a data communication network.
6. What do you understand by capacity storage?
7. What other values of computer data processing systems do you know?
8. What is an important objective in the design of computer data processing systems?
9. What is the most effective computer data processing system?
10. What is the best way of responding to the challenges and opportunities of our post-industrial society?

**Найдите в тексте английские эквиваленты следующих словосочетаний:**

Система обработки информации компьютером; система ориентирования на обработку данных компьютером; сочетать возможности человека и машины; ограничивать управление; вряд ли допустят ошибку; оставаться уязвимым; недопустимые данные; легкость осуществления связи; сеть передачи информации; системы, основанные на использовании спутников; служащие по резервированию жилья; получить мгновенный ответ; наводить справки; хранилище данных; корпоративная база данных; объем памяти; запоминать огромное количество информации; извлекать информацию; добавить значимости; упомянутый выше; доля секунды; подверженный ошибкам; экономически оправданный.

**Текст №19**

**FUNCTIONAL UNITS OF DIGITAL COMPUTERS**

As we know, all computer operations can be grouped into five functional categories. The method in which these five functional categories are related to one another represents the functional organization of a digital computer. By studying the functional organization, a broad view of the computer is received.

The five major functional units of a digital computer are:

- 1) Input— to insert outside information into the machine;
- 2) Storage or memory — to store information and make it available at the appropriate time;
- 3) Arithmetic-logical unit — to perform the calculations;
- 4) Output — to remove data from the machine to the outside world and
- 5) Control unit — to cause all parts of a computer to act as a team.

A complete set of instructions and data are usually fed through the input equipment to the memory where they are stored. Each instruction is then fed to the control unit. The control unit interprets the instructions and issues commands to the other functional units to cause

operations to be performed on the data. Arithmetic operations are performed in the arithmetic-logical unit, and the results are then fed back to the memory. Information may be fed from either the arithmetic unit or the memory through the output equipment to the outside world. The five units of the computer must communicate with each other. They can do this by means of a machine language which uses a code composed of combinations of electric pulses. These pulse combinations are usually represented by zeros and ones, where the one may be a pulse and the zero — a no-pulse. Numbers are communicated between one unit and another by means of these one-zero or pulse — no-pulse combinations. The input has the additional job of converting the information fed in by the operator into machine language. In other words, it translates from our language into the pulse — no-pulse combinations understandable to the computer. The output's additional job is converting the pulse — no-pulse combinations into a form understandable to us, such as a printed report.

**Questions:**

1. What represents the functional organization of a computer?
2. What can we get by studying the functional organization?
3. What is the function of the input device?
4. What does memory serve for?
5. What is the task of the arithmetic-logical unit?
6. What is the function of the output?
7. What is the main purpose of the control unit?
8. How do all units of the computer communicate with each other?
9. What is the additional job of the input?
10. What is the additional function of the output?

**Найдите в тексте английские эквиваленты следующих словосочетаний:**

Функциональная организация; действия компьютера; связывать друг с другом; вводить информацию извне; делать информацию доступной; выполнять вычисления; выводить информацию; блок управления; выдавать команды; заставлять выполнять команды; выходное устройство; внешний мир; связываться друг с другом; комбинация электрических импульсов; холостой импульс; импульсы, распознаваемые компьютером.

**Текст №20**

**STORAGE UNITS**

Computer system architecture is organized around the primary storage unit because all data and instructions used by the computer system must pass through primary storage. Our discussion of computer system units will begin with the functions of the primary and secondary storage units. This leads to the examination of the central processing unit and from there to the consideration of the input and output units. Therefore, the sequence in which we'll describe the functional units of a digital computer is: 1) storage units, primary and secondary; 2) central processing unit; 3) input and output units.

As you know, there are primary and secondary storage units. Both contain data and the instructions for processing the data. Data as well as instructions must flow into and out of primary storage.

*Primary storage* is also called main storage or internal storage. The specific functions of internal storage are to hold (store): 1) all data to be processed; 2) intermediate results of processing; 3) final results of processing; 4) all the instructions required for ongoing process. Another name for primary storage is memory, because of its similarity to a function of the human brain.



However, computer storage differs from human memory in important respects. Computer memory must be able to retain very large numbers of symbol combinations, without forgetting or changing any details. It must be able to locate all its contents quickly upon demand. The combinations of characters, that is, the letters, numbers, and special symbols by which we usually communicate, are coded. The codes used by computer designers are based upon a number system that has only two possible values, 0 and 1. A number system with only two digits, 0 and 1, is called a *binary number system*. Each binary digit is called a bit, from Binary digit. As the information capacity of a single bit is limited to 2 alternatives, codes used by computer designers are based upon combinations of bits. These combinations are called *binary codes*. The most common binary codes are 8-bit codes because an 8-bit code provides for  $2^8$ , or 256 unique combinations of 1's and 0's, and this is more than adequate to represent all of the characters by which we communicate.

Data in the form of coded characters are stored in adjacent storage locations in main memory in two principal ways: 1) as "strings" of characters — in bytes; and 2) within fixed-size "boxes" — in words. A fixed number of consecutive bits that represent a character is called a *byte*. The most common byte size is 8-bit byte. *Words* are usually 1 or more bytes in length.

*Secondary storage.* Primary storage is expensive because each bit is represented by a high-speed device, such as a semiconductor. A million bytes (that is, 8 million bits) is a large amount of primary storage. Often it is necessary to store many millions, sometimes billions, of bytes of data. Therefore slower, less expensive storage units are available for computer systems. These units are called *secondary storage*. Data are stored in them in the same binary codes as in main storage and are made available to main storage as needed.

**Вспомните значение новых слов и попытайтесь перевести словосочетания, употребляемые с этими словами.**

*Computer*, analog computer; digital computer; hybrid computer; all-purpose computer; general-purpose computer; fifth-generation computer; game computer; handheld computer; mobile computer; multimedia computer; notebook computer; pocket computer; portable computer.

*Unit*: unit of memory; unit of data; unit of measurement; arithmetic unit; arithmetic-logical unit; central processing unit; computing unit; control unit; functional unit; input unit; output unit; network unit; system unit.

*Function*: arithmetic function; checking function; complex function; computer function; continuous function; conversion function; distribution function; encoding function; logical function; numeric function; output function; program function; search function; software function; support function; utility function; variable function.

*Control*: access control; batch control; coding control; distance / remote control; error control; execution control; hardware control; input/output control; memory control; power control; production control; program control; rate control; self-acting control; software control; system control.

**Вспомните значение следующих прилагательных и преобразуйте их в сравнительную и превосходную степени.**

A. Small; fast; new; long; late; wide; young; easy; great; dull; rich; bulky; large; vast; early; old; broad.

B. Frequent; reliable; approximate; significant; intricate; possible; basic; remarkable; common; modern; dependent; general; necessary; successful; scientific; universal.

C. Good; bad; little; many

**Согласуйте слова в левой колонке с их интерпретацией, предложенной справа.**

- |  |   |
|--|---|
| 1. Functional organization of a computer | a) processes and stores large amount of data and solves problems of numerical computations; |
| 2. Input                                 | b) circuits used in large-scale digital systems;  |
| 3. Memory                                | c) method of interrelation of the main units of a computer                                  |
| 4. Control unit                          | d) removing data from the device to the outside world;                                      |
| 5. Output                                | e) inserting information into the computer;   |
| 6. Arithmetic unit                       | f) a code of combinations of electric pulses;   |
| 7. Machine language                      | g) performs addition, subtraction, multiplication, etc;                                     |
| 8. Logic gates                           | h) stores original data as well as partial results;   |
| 9. Digital computer                      | i) causes all parts of the computer to act as a team  |

### **Текст №21**

## **INPUT-OUTPUT ENVIRONMENT**

Data and instructions must enter the data processing system, and information must leave it. These operations are performed by input and output (I/O) units that link the computer to its external environment.

The I/O environment may be human-related or human-independent. A remote banking terminal is an example of a human-related input environment, and a printer is an example of a device that produces output in a human-readable format. An example of a human-independent input environment is a device that measures traffic flow. A reel of magnetic tape upon which the collected data are stored in binary format is an example of a human-independent output.

*Input-Output Interfaces.* Data enter input units in forms that depend upon the particular device used. For example, data are entered from a keyboard in a manner similar to typing, and this differs from the way that data are entered by a bar-code scanner. However, regardless of the forms in which they receive their inputs, all input devices must provide a computer with data that are transformed into the binary codes that the primary memory of the computer is designed to accept. This transformation is accomplished by units called I/O interfaces. Input interfaces are designed to match the unique physical or electrical characteristics of input devices to the requirements of the computer system. Similarly, when output is available, output interfaces must be designed to reverse the process and to adapt the output to the external environment. These I/O interfaces are also called channels or input-output processors (IOP).

The major differences between devices are the media that they use and the speed with which they are able to transfer data to or from primary storage.

*Input-Output Device Speed.* Input-output devices can be classified as high-speed, medium-speed, and low-speed. The devices are grouped according to their speed. It should be noted that the high-speed devices are entirely electronic in their operation or magnetic media that can be moved at high speed. Those high-speed devices are both input and output devices and are used as secondary storage. The low-speed devices are those with complex mechanical motion or operate at the speed of a human operator. The medium-speed devices are those that fall between — they tend to have mechanical moving parts which are more complex than the high-speed devices but not as complex as the low-speed.

*High-speed devices:* magnetic disk; magnetic tape.

*Medium-speed devices:* card readers; line printers; page printers; computer output microfilms; magnetic diskette; optical character readers; optical mark readers; visual displays  
*Low-speed devices:* bar-code readers; character printers; digitizers; keyboard input devices; plotters; voice recognition and response units.

### **Questions:**

1. What is the purpose of input and output devices?
2. What types of input-output devices do you know?
3. Why are data transformed into a binary code while entering the input device?
4. Give an example of a human independent output.
5. What is an I/O interface?
6. What are the major differences between the various I/O devices?
7. What types of I/O devices tend to be high-speed devices?
8. What types of devices tend to be low-speed devices?

### **Найдите в тексте английские эквиваленты следующих словосочетаний:**

Среда устройств ввода-вывода; система обработки информации; внешняя среда; связан с человеком; независим от человека; удаленный банковский терминал; измерять поток данных; бобина с магнитной лентой; хранить собранную информацию; двоичный формат; интерфейс ввода-вывода; вводить с клавиатуры; устройство считывания штрих-кода; не смотря на; преобразовать в двоичный код; сопоставлять параметры; подобным образом; интерфейс вывода; изменить процесс в обратном направлении; настроить устройство ввода-вывода к внешней среде; главное отличие; основная память; вторичная память; низкоскоростные устройства; в соответствии

### **Текст №22**

#### **KEYBOARD DEVICES**

There is a wide variety of keyboard devices, or terminals, available for use in entering data directly into a computer. *The visual display terminal (VDT)* is the most popular type of I/O device in use today. It consists of a typewrite like keyboard for inputting and a cathode ray tube (CRT) for displaying output data. Each character entered through the keyboard is also displayed on the CRT. When keyed the data are held in a small memory, called a buffer, within the terminal itself. The data are not sent on to the computer until the operator presses an enter key on the keyboard. This allows the operator the opportunity to proofread or verify the data being entered by reading the data displayed on the screen. There are three major uses of VDT's: alphanumeric displays, graphic displays, and input through a light pen.

*Alphanumeric displays.* The most common use of the visual display terminal is to display alphanumeric data, that is, character data. Because of their relatively fast output rates and their ability to provide a viewer with an "instant" output, video displays have replaced printers for many applications.

*Graphic displays.* Visual display terminals with a graphic display capability provide a very powerful and versatile tool for many users. Graphic-display devices provide not only a means of displaying high-resolution drawings but also the capability of manipulating and modifying the graphic display. The business person can use the graphic display to present data in the form of line charts, bar charts, or pie charts. Graphic displays can be very effective in information systems for business manager.

2. Different types of keyboard devices, such as visual display terminals, teleprinter terminals, and point-of-sale devices are among the keyboard devices.

*A light pen* is a photosensitive pen like instrument which can sense a position on the cathode ray tube (CRT) when the end of the pen is held against the screen. The light pen is an input device. By sensing the position on the screen when you touch it by the light pen, you are

inputting data to the main storage. The light pen is commonly used by engineers to modify designs.

*Teleprinter terminals.* There are situations where it is desirable to have a printed copy of data outputted to a terminal. If a user finds a printed copy to be required, the solution could be a teleprinter terminal. A teleprinter terminal has a keyboard for input and a typewriter like printer for output. These printers are character printers and are therefore slower output devices than CRT displays.

*A point-of-sale (POS) device* is the electronic equivalent of a cash register, however it is capable of capturing more data than a cash register. Most point-of-sale devices are online terminals attached to a computer for processing the transaction while the customer is making the purchase. The significant features of most of the current electronic POS devices include: the capability of entering extensive information about the sale, the guiding of the operator through the possible transactions by a series of lighted indicators or messages, a provision for transmission of the data to a central computer, and the provision for a local computational capability such as price extensions and tax calculations.

## TESTS

### Вставьте необходимые слова вместо пропусков.

1. Input-output devices allow the computer to \_\_\_\_\_ with its external environment.  
a) compute; b) command; c) communicate
2. An I/O interface is a special \_\_\_\_\_ that converts input data to the internal codes.  
a) register; b) processor; c) plotter
3. The \_\_\_\_\_ devices allow the computer to communicate with its external environment.  
a) high-speed; b) medium-speed; c) low-speed
4. The low-speed devices are those with complex mechanical motion or those that operate at the speed of a human operator.  
a) mechanical; b) electrical; c) electronic
5. Data are entered from a \_\_\_\_\_ in a manner similar to typing.  
a) keyboard; b) digitizer; c) printer
6. A remote banking terminal is an example of a \_\_\_\_\_ input environment.  
a) human-dependent; b) human-independent; c) human-related
7. Input \_\_\_\_\_ match the physical or electrical characteristics of input devices to the requirements of the computer system.  
a) interconnections; b) interfaces; c) intercommunication
8. They \_\_\_\_\_ data into the binary codes.  
a) transmit; b) translate; c) transform

### Согласуйте слова левой колонки с их интерпретацией, предложенной справа.

- |                   |   |
|-------------------|---|
| 1. Scanner        | a) a device producing output in a human-readable format;  |
| 2. Keyboard       | b) a manipulator used mainly in computer games;   |
| 3. Touch pad      | c) a device enabling to get video images in digital form;   |
| 4. Mouse          | d) a device converting the finger movement into the cursor movement , across the screen;                |
| 5. Plotter        | e) a device for direct data entry, which can convert images into the computer form;                     |
| 6. Joystick       | f) a special pen that can draw and input texts;   |
| 7. Digital camera | g) a device inputting numerical and text data by means of keys;   |
| 8. Magnetic disc  | h) an optic-mechanical device helping the user select images on computer display due to rotating balls; |
| 9. Printer        | i) an entirely electronic high-speed device keeping information.  |

## **Текст №23**

### **Advantages of microelectronics**

The intensive effort of electronics to increase the reliability and performance of its products while reducing their size and cost led to the results that hardly anyone could predict. A quantitative change in technology gave rise to qualitative change in human capabilities. There appeared a new branch of science – microelectronics.

Microelectronics embraces electronics connected with the realization of electronic circuits, system and subsystems from very small electronic devices. Microelectronics is the name for extremely small electronic components and circuit assemblies, made by film or semiconductor techniques. A microelectronic technology reduced transistors and other circuit to dimensions almost invisible to unaided eye. The point of this extraordinary miniaturization is to make circuits long-lasting, low in cost, and capable of performing electronic functions at extremely high speed. It is known that the speed of response depends on size of transistor: the smaller the transistor, the faster it is. The smaller the computer, the faster it can work.

One more advantage of microelectronics is that smaller devices consume less power. In space satellites and spaceships this is a very important factor.

Another benefit resulting from microelectronics is the reduction of distances between circuits components. Packing density increased with the appearance of small-scale integrated circuit, medium-scale IC, large-scale IC, very- large-scale IC. The change in scale was measured by the number of transistor on a chip.

Electronics has extended man's intellectual power. Microelectronics extends that power still further.

#### **Questions:**

1. What would you say about electronics?
2. Why is the development of electronics called a revolution?
3. What is the micrielectronics?
4. What techniques does microelectronics use?
5. What is the benefit of reducing the size of circuit elements?
6. What scales of integration are known to you?

## **Текст №24**

### **What is the computer system**

Computers are an integral part of our lives. They are found in homes, offices, plants, stores, hospitals, libraries, and many other places. Computers are part of cars and phones, and they enable us to access bank accounts from home, shop online, and quickly communicate with people around the world by means of e-mail and the Internet.

Great possibilities of computers make us to learn basic computing skills. This helps us to be computer literate. The most practical advantage of being computer literate is that it makes employees more attractive to potential employers. The users have to utilize this powerful tool for the benefit of individuals, organizations, nations and the world.

So, what is computer?

A computer is a machine that can be programmed to accept data and process it into useful information. It also stores data for later reuse. A computer takes data and converts it into information. A computer system has two major components, hardware and software.

**Hardware** refers practically to all the physical items associated with a computer system. The processing is performed by the hardware. Thus, the computer hardware responsible for computing includes input devices, the processor, memory, storage and output devices.

*Input devices* allow the user to enter the program and data and send it to the processing unit. The common input devices are keyboard, mouse and scanner.

*The Processor* or the central processing unit, has the electronic circuitry that manipulates input data into the information as required. The central processing unit executes computer instructions.

*Memory* is the unit from which the CPU fetches the instructions and data. It is usually called main or primary memory.

*Storage* generally means secondary storage, which stores data and programs.

*Output devices* are normally a monitor and printers.

**Software** is a set of instructions, which enables the hardware to perform a specific task. Software refers to a program that makes the computer to do something meaningful. Software can be classified into two categories: System Software and Application Software.

*System Software* consists of general programs written for a computer. These programs provide the environment to run the application programs.

An Application Software consists of programs designed to solve a user problem. It is used to accomplish specific tasks rather than just managing a computer system.

### **Questions:**

1. What makes us learn basic computing skills?
2. What helps us to be computer literate?
3. What are the main functions of computer?
4. What are the main components?
5. What part does hardware include?
6. What is the role of central processing unit?
7. What is software?

### **Текст №25**

#### **A computer – based information system**

An information system is a set of people, processes and mechanism for collecting, storing and processing data to deliver information to a particular goal. A computer – based system, or CBIS, uses computers to collect, process, store, analyze and distribute information for a specific purpose, such as meeting a business objective. The main components of a CBIS include hardware, software, data, procedures and people.

In a CBIS, the hardware is the physical machinery, such as a computer, printer, display screen and cables. The hardware devices work together to accept data, or raw facts, as input before processing the data into useful information and displaying the information as output. The software refers to computer programs that provide instructions for processing the data into useful information. The procedures are the rules for the operations of a computer system, a particular course of action intended to achieve a result. And at last every computer – based information system needs people. Often the people are the most important element of the CBIS. Probably it is the people that most influence the success or failure of the information system. They are called users or end users.

Most types of work require a high number of people, time and effort to accomplish. To solve the problem and to find a suitable solution could take a very long time. All jobs that done manually a century ago have now become easier to do, as a lot of time and cost are now saved with the development of technology. Thus, the information system can be categorized into two groups: manual systems – the old style that deals with papers and reports, and automated system where computerizing system is used.

**Answer the questions:**

1. What is an information system?
2. What is the main function of a computer?
3. What are the main components of a computer – based information system?
4. What is hardware?
5. Give examples of the hardware's devices.
6. What is the role of the software?
7. What are the procedures?

**Текст №26****Communication systems and information technology**

Communication theory deals primarily with system for transmitting information from one point to another. The source output represents a voice waveform, a sequence of binary digits from a magnetic tape, or a target in a radar system. The channel may represent a telephone line, a high frequency radio link, a space communication link, or a storage medium.

As it is known, in the early 1940 a mathematical theory for dealing with more fundamental aspects of communication system was developed. The distinguishing characteristics of this theory are, first, a great emphasis on probability theory, and second, a primary concern with the encoder and decoder. This concern their functional roles and their achieving a giving level of performance. Later information theory was extended and applied in practical communication systems.

Information technology (IT) is the study, design, development, implementation, support or management of computer – based information systems, particular software applications and computer hardware. Information technology deals mainly with the use of electronic computers and computer software to convert, store, protect, process, transmit as well as securely retrieve information.

Today the term information technology includes many aspects of computing and technology and covers many fields. Information technology professionals perform a variety of duties that range from installing applications to designing complex computer networks and information databases. The duties of IT specialists may involve data management, networking, engineering computer hardware, database and software design, as well as the management and administration of the whole system. When computer and communication technologies are combined, the result is information technology, or “infotech”. Information technology describes any technology that helps to produce manipulate, store, communicate and / or disseminate information.

Thus, Information Communication Technology (ICT) embraces all technologies for the communication of information. It includes any medium to record information (paper, pen, magnetic disk / tape, optical disks – CD / DVD, flash memory etc.) and also technology for broadcasting information – radio, television. It involves any technology for communicating through voice and sound or images – microphone, camera, loudspeaker, telephone. At present information communication is mainly realized with the help of Personal Computers networked through the Internet.

**Answer the questions:**

1. What system does communication theory deal with?
2. What does the source output represent?
3. What is the channel?
4. When was the mathematical theory for communication system developed?
5. What are the distinguishing features of this theory?
6. What is IT?

7. What does it deal with?
8. What technologies does ICT include?

### **Текст №27**

#### **From the history of communication systems development**

Long long ago men found it necessary to communicate at a distance. When the alphabet was invented, they began to use papyrus and send letters. But from ancient times on until the 19-th century there were practically no advances in the means of communications.

The first practical electromagnetic telegraph was invented by the Russian scientist Pavel Shilling in 1828, and in 1832 he established telegraph communication between the Winter Palace and the Ministry of Transport in St. Petersburg. Shilling's work was continued in Russia by B. Yakobi, who made several improvements in the electromagnetic telegraph and linked St. Petersburg with Tsarskoye Selo. Yakobi invented the telegraph sending key, adopted by the American Samuel Morse. Morse, however, invented the telegraph code of dots and dashes, which is used all over the world to this day.

The first transatlantic telegraph cable from Europe to America was laid in 1858 due to the great British scientist Professor William Thomson. He also invented the mirror galvanometer, the very sensitive instrument used at first to receive signals transmitted over long cables.

The telephone is a much younger invention than the telegraph. The first telephone that found application was invented by the American Graham Bell in 1876. Russian inventors made several important improvements in the telephone. In 1879 the Russian engineer Mikhalsky made a microphone with powdered carbon, a prototype of the present – day microphone. Next year another Russian inventor, Golubitsky made a far sensitive receiver than the receiver of Bell.

#### **Translate phrases:**

to communicate at a distance, from ancient times, to use papyrus and send letters, the alphabet was invented, century, between, work was continued, made several improvements, adopted by, invented the telegraph code of dots and dashes, is used all over the world, telegraph cable, due to the, scientist, much younger invention, several important improvements, prototype of the present – day microphone, inventor, very sensitive instrument, signals transmitted over long cables.

### **Текст №28**

#### **Modern means of communication**

As we know communication is exchange of information and messages. Because of modern means of communications, it is possible for the people from any part of the world to communicate with their fellows within short time. Modern means of communication help to exchange thoughts in spoken (via radio), written (via newspaper), and visual (via television) form.

It is interesting to note different forms of communication, such as: radio and television broadcast, telephony, telegraphy, radar, sonar, fax, e-mail, teleprinting, telemetering, mobile phones, Internet.

Television is popular means of mass communication. Television plays a key role in social and cultural transformation of the country. Important news and messages are telecast on television. Besides, through television we can directly see the person reading the news or giving information. Incidents happening in faraway places can be seen by watching television at home.

Telephone and mobile phone services are the important means of communication. People use the telephone to contact a person whether he is far or near. We can also watch live news and do mobile phone banking today with the help of internet facility.



One can also send matter, pictures, photos, etc. in seconds to a person at a faraway places through telefax. We are able to send important messages and good wishes immediately through telegram. The message send should be very short. It can be received in a very short period of every time.

Now, recent methods of sending messages are through computer. The messages can be sent through the world in seconds by e-mail. One can also watch live news and do internet banking.

In addition to the above system, communications networks may utilize Internet, cellular, wireless, satellite technologies and more. Those system which take advantage of two or more media are referred to as hybrid communication networks. Much research is being devoted to finding better ways of developing communications systems through countless combinations of all of these communications technologies.

## **Текст №29**

### **Components of information systems**

Information system consists of the following general components: hardware, software, databases, telecommunications systems, human resources, and procedures.

As we know, hardware presents multiple computer systems, such as microcomputers, mini-computers, mainframes, together with their peripherals. Computer system components are: a central processor, memory hierarchy, input and output devices. The central processor carries out the instructions of a program, translated into a simple form. Memories included in a computer the main (primary) memory, to the slower secondary storage devices such as magnetic disks. The increases in the number of transistors on chips result in the increase in the microprocessor speed and memory capacity, and thus the growth of the processing power.

Computer software falls into two classes: system software and application software. System software manages the resources of the computer system and simplifies programming. The principal system software is an operating system. It manages all the resources of a computer system and provides an interface through which the system's user can deploy these resources.

Application software is programs that directly assist end users in doing their work. They are purchased as ready-to-use packages. Applications software directly assists end users in doing their work.

Telecommunications are used to connect computer systems and transmit information. Various computer network structures are possible, depending on needs of an organization. Human resources. Qualified people are a vital component of any informational system. Technical personnel include development and maintenance managers, systems analysts and designers, computer programmers, and computer operators with highly specialized skills.

#### **Answer the questions:**

1. What general components does an information system consist of?
2. What are the components of any computer system?
3. What is hardware?
4. What is software?
5. What are telecommunications used for?

#### **Translate phrases:**

устройство ввода-вывода, выполнять команды, оперативное запоминающее устройство, приводить к увеличению, системное программное обеспечение, прикладное программное обеспечение, упрощать программирование, управлять

ресурсами, устанавливая ресурсы, записи служащих локальная сеть, сотрудники, отдельный сайт.

### **Текст №30**

#### **What is Programming?**

In the most basic sense, programming means creating a set of instructions for completing some specific task. Computer program is a set of instructions that guide a computer to execute a particular task. It is like a recipe for a cook in making a particular dish. The recipe contains a list of ingredients called data, and a list of steps that guide the computer what to do with the data. So programming is the technique of making a computer to perform something you want to do.

We know computer understands binary languages with digits 1s and 0s. These binary languages are difficult to understand by humans; so we generally use an intermediate language instead of binary language. Again the program uses high-level language that is interpreted into bytes that the computer understands. So a programmer writes a source code and uses a tool or interpreter that allows the computer to read, translate and execute the programs to perform a function.

In software engineering, programming is regarded as one phase in a software development process. The software development process is a set of steps that a software program goes through when developed. The most effective way to protect information and information systems is to integrate security into every step of the system development process, from the initiation of the system to its disposition. The multistep process that starts with the initiation, analysis, design, and implementation, and continues through the maintenance and disposition of the system, is called the System Development Life Cycle (SDLC).

#### **Answer the questions:**

1. What is programming?
2. What is the computer program?
3. What kind of language can computer understand?
4. What language do humans use?

#### **Translate phrases:**

набор команд, направлять, выполнять конкретную задачу, как рецепт, перечень шагов, понимать, двоичные языки, цифры, язык высокого уровня, переводить в байты, исходная программа, а использовать инструменты, включать безопасность, реализация, жизненный цикл разработки системы.

### **Текст №31**

#### **Brief history of programming**

The earliest programming machine, that is a machine that can change its “program”, was the Jacquard Loom, which was developed in 1801. The machine used a series of cards with holes punched in them. The hole pattern represented the pattern that the loom had to follow in weaving cloth. These patterns were used with a variety of machines called unit record equipment to perform data processing task. The unit record equipments were programmed by changing writing of plug-boards. Early computers used similar programming methods.

Charles Babbage adopted the use of punched cards around 1830 to control his Analytical Engine. Mathematician Ada Lovelace, a friend of Babbage, supplemented the engine with a set of notes, in 1842. These notes included an algorithm to calculate a sequence of numbers to be carried out by machine. Many scientists consider this algorithm to be the first computer program.

In the 1880s, Herman Hollerith invented the recording of data on a medium that could then be read by a machine. To process the punched cards, first known as “Hollerith cards” he invented the keypunch sorter and tabulator unit record machines. These inventions were the

foundation of the data processing industry. In 1896 he founded the Tabulating Machine Company (which later became the core of IBM).

The first computer codes were specialized for their applications. In the first decades of the 20<sup>th</sup> century, numerical calculations were based on decimal numbers. It was realized that logic could be represented with numbers, not only with words.

A significant breakthrough came when John von Neumann suggested that the instruction might be stored in the computer's memory, just like the data. Eventually, the sequence of instructions, called stored programs, was stored in the computer's memory and the art of computer programming was born.

#### **Translate phrases:**

programming machine,used a series of cards,patterns,a variety of machines,eventually,the sequence of instructions,computer's memory,significant breakthrough,the first computer codes,applications,inventions,foundation of the data,scientists,a sequence of numbers,equipment,used similar programming methods.

### **Текст №32**

#### **Programming languages**

There are hundreds of programming languages in use today. It is difficult to determine which programming language are the most widely used. One language may occupy the greater number of programmer hours, a different one has more lines of code, a third may utilize the most CPU time, and so on. Some languages are very popular for particular kinds of application.

**FORTRAN** (**F**ormula **T**ranslation), **LISP** (**L**ist **P**rocessor) and **COBOL** (**C**ommon **B**usiness-**O**riented **L**anguage) are considered as the oldest language that are used today. Designed in 1957-1959, they are high-level programming languages that were created by scientists, mathematicians and business computing professionals. They are used for scientific and engineering applications.

**BASIC** (the acronym for **B**eginner's **A**ll-purpose **S**ymbolic **I**nstruction **C**ode) was developed as an easy-to-learn programming language for students and inexperienced programmers.

**Java** is one of the most popular and widely used programming languages for web development. This is high – level, general purpose, object-oriented language that had made a project for interactive television.

**Python** is the a high-level, general purpose programming language dynamic in nature, which means that a developer can write and run the code without the need of a compiler. It was created in 1990 by Guido Van Rossum to support a variety of programming style in a fun way.

### 3. Комплект оценочных средств для промежуточной аттестации

#### 3.1. Практические задания (ПЗ)

##### Практическое задание №1

1). *Поставьте существительные во множественное число:*

a car, a bus, a story, a wolf, a mouse

2). *Образуйте степени сравнения прилагательных:*

long, beautiful, smart, big, little

3). *Раскройте скобки, употребляя глагол в правильной форме:*

1). Tomorrow I (not to go) to school. 2). Where they (to spend) last month? 3). Usually she (to go) shopping three times a week. 4). After classes he (to wait) for you at home. 5). What subjects you (to study) at your college? 6). I (to see) a good film last Friday. 7). We always (to drink) coffee in the morning.

4). *Прочитайте текст и соотнесите вопросы с абзацами текста:*

A- *How do you get online?*

B- *How fast are today's internet connections?*

C- *Who created the Internet?*

D- *How much does broadband access cost?*

E- *Why do you need a modem?*

F- *Did the Internet become popular quickly*

G- *How old is the Internet (the Net)? When was it created?*

H- *What does TCP/IP mean?*

I- *Are there other ways of accessing the Internet?*

#### **The Internet: FAQs**

(Frequently Asked Questions)

1. \_\_\_\_\_?

It's hard to say exactly. The research that led to what we now know as the Internet was begun in the 1960s.

2. \_\_\_\_\_?

Again, it's hard to say exactly who created it. The initial research was carried out by the Advanced Research Projects Agency in America, funded by the US government.

3. \_\_\_\_\_?

It took many years for the Internet to become popular around the world. It's only really since the mid-90s that the Internet has been a part of our lives.

4 \_\_\_\_\_?

To get connected, you need a computer, the right connection software and a modem connected to the phone line. You also need an account with an Internet Service Provider (ISP), which acts as a gateway between your PC and the rest of the Net.

5. \_\_\_\_\_?

Today, ISPs offer a broadband, high-speed connection. The most common types are cable — offered by local cable TV companies — and ADSL (Asymmetric Digital Subscriber Line), which works through phone lines. They are both faster than the traditional dial-up telephone connection. Broadband access is also offered by some electricity networks.

6. \_\_\_\_\_?

It depends on which company you choose. Nowadays, some companies even offer free broadband.

7. \_\_\_\_\_?

A modem (modulator/demodulator) converts digital signals into analogue signals so that data can be transmitted across the phone or cable network.

8. \_\_\_\_\_?

The language used for data transfer on the Internet is known as TCP/IP (transmission control protocol/ Internet protocol). This is like the internet operating system. Every computer connected to the Net is identified by a unique IP address.

9. \_\_\_\_\_?

Other methods of internet access include Wi-Fi, satellite, mobile phones and TV sets equipped with a modem. Wi-Fi-enabled laptops or PDAs allow you to connect to the Net if you are near a wireless access point, in locations called hotspots (for example, a Wi-Fi cafe, park or campus). Satellite services are used in places where terrestrial access is not available (for example, on ships at sea). Highend mobile phones provide access through the phone network.

## **3.2. Практические задания (ПЗ)**

### **Практическое задание №2**

1). *Поставьте существительные во множественное число:*

a dog, a box, a baby, a hero, a leaf

2). *Образуйте степени сравнения прилагательных:*

small, good, interesting, clever, deep

3). *Раскройте скобки, употребляя глагол в правильной форме:*

1). She (to wash) her car once a week. 2). When you (to leave) the meeting yesterday? 3). She (to explain) a grammar rule yesterday. 4). My mum usually (not to cook) dinner. 5). What she (to do) yesterday? 6). My sister (to go) to school every day. 7). Last year Ann (to visit) Spain.

4). *Прочитайте текст и выберите для каждого абзаца(A-D) правильный заголовок (1-4):*

1. Sound, Music, MIDI
2. Products full of pictures, action and sound
3. Creating and editing movies
4. The potential of multimedia

A \_\_\_\_\_

Multimedia applications are used in all sorts of fields. For example, museums, banks and estate agents often have Information kiosks that use multimedia; companies produce training programs on optical discs; businesspeople use Microsoft PowerPoint to create slideshows; and teachers use multimedia to make video projects or to teach subjects like art and music. They have all found that moving images and sound can involve viewers emotionally as well as inform them, helping make their message more memorable.

The power of multimedia software resides in **hypertext**, **hypermedia** and **interactivity** (meaning the user is involved in the programme). If you click on a hypertext link, you can jump to another screen with more information about a particular subject. Hypermedia is similar, but also uses graphics, audio and video as hypertext elements.

B \_\_\_\_\_

As long as your computer has a **sound card**, you can use it to capture sounds in digital format and play them back. Sound cards offer two important capabilities: a built-in stereo synthesizer and a system called **MIDI**, or **Musical Instrument Digital Interface**, which allows electronic musical instruments to communicate with computers. A Digital Audio Workstation (**DAW**) lets you mix and record several tracks of digital audio.

You can also listen to music on your PC or transfer it to a portable **MP3** player. MP3 is short for **MPEG audio layer 3**, a standard format that compresses audio files. If you want to create your own MP3 files from CDs, you must have a CD ripper, a program that extracts music tracks and saves them on disk as MP3s.

Audio is becoming a key element of the Web. Many radio stations broadcast live over the Internet using **streaming audio technology**, which lets you listen to audio in a continuous stream while it is being transmitted.

The broadcast of an event over the Web, for example a concert, is called a **webcast**. Be aware that you won't be able to play audio and video on the Web unless you have a **plug-in** like RealPlayer or QuickTime.

C \_\_\_\_\_

Video is another important part of multimedia. **Video computing** refers to recording, manipulating and storing video in **digital format**. If you wanted to make a movie on your computer, first you would need to capture images with a **digital video camera** and then transfer them to your computer.

Next, you would need a **video editing** program like iMovie to cut your favourite segments, re-sequence the clips and add transitions and other effects. Finally, you could save your movie on a DVD or post it on websites like YouTube and Google Video.

D \_\_\_\_\_

Multimedia is used to produce dictionaries and encyclopedias. They often come on DVDs, but some are also available on the Web. A good example is the Groller Online Encyclopedia, which contains thousands of articles, animations, sounds, dynamic maps and hyperlinks. Similarly, the Encyclopedia Britannica is now available online, and a concise version is available for iPods, PDAs and mobile phones. Educational courses on history, science and foreign languages are also available on DVD. Finally, if you like entertainment, you'll love the latest multimedia video games with surround sound, music soundtracks, and even film extracts.

1	2	3	4

#### 4. Критерии оценивания

**«5» «отлично»** – студент показывает глубокое и полное овладение содержанием программного материала по УД в совершенстве владеет понятийным аппаратом и демонстрирует умение применять теорию на практике, решать различные практические и профессиональные задачи, высказывать и обосновывать свои суждения в форме грамотного, логического ответа (устного или письменного), а также высокий уровень овладения общими и профессиональными компетенциями и демонстрирует готовность к профессиональной деятельности;

**«4» «хорошо»** – студент в полном объеме освоил программный материал по УД владеет понятийным аппаратом, хорошо ориентируется в изучаемом материале, осознанно применяет знания для решения практических и профессиональных задач, грамотно излагает ответ, но содержание, форма ответа (устного или письменного) имеют отдельные неточности, демонстрирует средний уровень овладения общими и профессиональными компетенциями и готовность к профессиональной деятельности;

**«3» «удовлетворительно»** – студент обнаруживает знание и понимание основных положений программного материала по УД но излагает его неполно, непоследовательно, допускает неточности в определении понятий, в применении знаний для решения практических и профессиональных задач, не умеет доказательно обосновать свои суждения, но при этом демонстрирует низкий уровень овладения общими и профессиональными компетенциями и готовность к профессиональной деятельности;

**«2» «неудовлетворительно»** – студент имеет разрозненные, бессистемные знания, не умеет выделять главное и второстепенное, допускает ошибки в определении понятий, беспорядочно и неуверенно излагает программный материал по УД не умеет применять знания для решения практических и профессиональных задач, не демонстрирует овладения общими и профессиональными компетенциями и готовность к профессиональной деятельности.



## 5. Информационное обеспечение

перечень учебных изданий, электронных изданий, электронных и Интернет-ресурсов, образовательных платформ, электронно-библиотечных систем, веб-систем для организации дистанционного обучения и управления им, используемые в образовательном процессе как основные и дополнительные источники.

### Основные источники:

1. Английский язык для технических специальностей: учебник для СПО / А.П.Голубев, А.П. Коржавый. – 11-е изд., стер. – М.: ИЦ Академия, 2020. – 208 с.
2. Английский язык в программировании и информационных системах: учебное пособие/ В.А. Радовель.- М.: КНОРУС, 2020. - 240 с.
2. Английский язык в программировании и информационных системах: учебное пособие/ В.А. Радовель.- М.: КНОРУС, 2018. - 240 с.
3. Английский язык. Грамматика. Сборник упражнений/Голицынский Ю.Б. – М.: КАРО, 2020. – 576 с.
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5. Английский язык для ссузов, учебное пособие /Агабекян И.П. -М.: Проспект, 2017-288 с.
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### Дополнительные источники:

1. Шевелева С. А. Основы экономики и бизнеса: учебное пособие для учащихся средних профессиональных учебных заведений / С. А. Шевелева, В. С. Стогов. – 4-е изд., перераб. и доп. – М.: ЮНИТИ-ДАНА. 2018-431с.
2. Цветкова И. В. Английский язык для школьников и поступающих в вузы. Устный экзамен / авт. сост. И. В. Цветкова, И. А. Клепальченко, Н. А. Мальцева. – Изд. 14-е доп. и перераб. – М.: Глосса-Пресс; Ростов н/Д: Феникс, 2015-206с.

### Электронные издания (электронные ресурсы):

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<https://infourok.ru/perechen-elektronnih-obrazovatelnih-resursov-dlya-urokov-angliyskogo-yazika-i-vneurochnoy-deyatelnosti-po-predmetu-531860.html>
2. British Council  
<https://learnenglish.britishcouncil.org/>

### 3. Урок РФ

[https://урок.рф/library/tcifrovaya\\_sreda\\_dlya\\_uchitelej\\_anglijskogo\\_yazyka\\_1948\\_38.html](https://урок.рф/library/tcifrovaya_sreda_dlya_uchitelej_anglijskogo_yazyka_1948_38.html)

4. <https://nsportal.ru/shkola/inostrannye-yazyki/angliiskiy-yazyk/library/2018/08/27/spisok-eor-k-urokam-angliyskogo-yazyka>

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<https://resh.edu.ru/>

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<https://www.yaklass.ru>

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<https://interneturok.ru>

#### **Цифровая образовательная среда СПО PROобразование.**

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#### **Электронно-библиотечная система:**

IPR BOOK - <http://www.iprbookshop.ru/78574.html>

#### **Веб-система для организации дистанционного обучения и управления им:**

Система дистанционного обучения ОГАПОУ «Алексеевский колледж»  
<http://moodle.alcollege.ru/>