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АНГЛИЙСКИЙ ЯЗЫК

Учебное пособие

Краснодар
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Р е ц е н з е н т ы :

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Учебное пособие разработано в соответствии с программой по иностранным языкам для неязыковых вузов. Грамматический материал систематизирован, представлен в виде правил, таблиц, упражнений. Включены аутентичные тексты по специальности, научно–популярные статьи из зарубежных периодических изданий, а также упражнения, направленные на развитие навыков говорения, чтения и перевода оригинальной литературы в профессиональной сфере.

Предназначено для обучающихся факультета прикладной информатики по направлениям подготовки: «Информационные системы и технологии», «Прикладная информатика», «Бизнес-информатика».

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ВВЕДЕНИЕ

Учебное пособие разработано в соответствии с программой по иностранным языкам для неязыковых вузов. Предназначено для аудиторной и самостоятельной работы обучающихся факультета прикладной информатики по направлениям: «Информационные системы и технологии», «Прикладная информатика», «Бизнес-информатика». Рассчитано на лиц, овладевших лексическим и грамматическим минимумом для осуществления речевой деятельности на иностранном языке в ситуациях социально-бытовой сферы общения.

Целью данного учебного пособия является развитие навыков профессионально ориентированной коммуникации на английском языке. Реализация этой цели осуществляется благодаря специально подобранным современным аутентичным текстам и упражнениям, организованным в пособии таким образом, чтобы способствовать формированию коммуникативных компетенций, необходимых для профессионального общения на английском языке.

Учебное пособие построено по тематическому принципу, состоит из пяти разделов. При отборе материала для учебного пособия в качестве основных критериев служили аутентичность текстов, их информативная ценность, актуальность, а также соответствие учебно-методическим задачам данного этапа обучения что позволяет осуществлять поэтапное целенаправленное формирование у обучающихся речевых навыков и умений.

Каждый раздел содержит грамматический материал, упражнения к нему, задания на закрепление специальной лексики и несколько текстов, объединенных общей тематикой. Теоретический материал взят из аутентичных источников на английском языке, переработан и изложен на русском языке. Упражнения рассчитаны на комплексное развитие и закрепление навыков чтения, перевода, а также устной и письменной речи.

UNIT 1

COMPUTERS IN OUR LIFE

Grammar:	Modal Verbs
Text A:	Computer Literacy or FITness
Text B:	The Information Age
Text C:	Computers in Everyday Life

Grammar
Modal Verbs

Модальные глаголы в английском языке относятся к особой группе глаголов. Они обозначают возможность, способность, необходимость и вероятность совершения действия.

Модальные глаголы в английском языке не употребляются самостоятельно, а в сочетании с инфинитивом основного смыслового глагола, после них не ставится частица to (исключение составляет ought).

I can do it. – Я могу сделать это.

You ought to be there. – Вам следует быть там.

Глаголы *can* и *may* имеют форму настоящего времени и прошедшего *could, might*. Глаголы *must, ought* и *need* имеют форму только настоящего времени.

Модальные глаголы в английском языке имеют одну форму для всех лиц и чисел. Вопросительная форма образуется без вспомогательных глаголов. Отрицательная форма образуется при помощи частицы not.

I can't do it. – Я не могу этого сделать.

May I use your phone? – Могу я воспользоваться вашим телефоном?

Основные значения модальных глаголов и их эквивалентов

Глаголы	Значение	Примеры
can (could)	Способность, навыки, умения	Kate *can* speak English well. I *could* skate well when I was little.
	Просьба, разрешение	*Could* you help me? — I'm afraid I can't. I'm busy. You *can* use my mobile if you need it.
	Объективная возможность	You *can* always go to the school library if you need a book.
	Неуверенность, сомнение	*Can* she be so young? She *could* have written this letter.
	Невероятность	He *can't* have done it.
	Упрек	He *could* be more generous to his mother. You *could* have called us.
may (might)	Формальная просьба, разрешение	*May* I come in? – Yes, you may. You *may* take my pen.
	Предположение	It *may* start raining soon.
	Упрек, совет (только might)	You *might* help us, you're quite free now. You *might* have told us about it.
must	Обязанность, долг, необходимость	You *must* do it immediately. *Must* we learn it by heart?
	Строгий запрет	You *mustn't* go there.
	Уверенность	It *must* be cold outside. You *must* have made a mistake.

should/ ought to	Совет, моральный долг	You *should* go to the doctor. You *ought to* help your parents.
	Упрек, совет	You *should* have done it long ago.
have to	Вынужденная необходимость в силу обстоятельств	I *had to* take a taxi yesterday. I'll *have to* rewrite the test.
	Отсутствие необходимости (отрицательная форма)	You *don't have to* get up early on Saturday.
be to	Обязанность по предварительной договоренности	He *is to* meet us at the station. We *were to* wait for them at the door.
	Приказ/запрет	You *are to* come here on time. You *are not to* leave without permission.
	Неизбежность, предрешенность	He *was to* leave soon. It *was to* happen.
be able to	Возможность совершения действия в определенной ситуации	I think I'll *be able to* do it myself.
need	Отсутствие необходимости (отрицательная форма)	You *needn't* do this exercise now. You *needn't* have gone there.

1. Write a request for each situation using can, could, may and the words in brackets. Use *may* when you need to be very polite.

1. You are in a very expensive cafe. You want a coffee. (I / have).

2. You are lost. You see an old man with a mobile phone. (I / use).

3. Your computer won't work. Your friend is good with computers. (you / help).

4. You are late for class. You want to go into the room. (I / come in).

5. You want to see your friend after school. (we / meet).

6. You have invited your friend to a party. You like his CD. (you / bring).

7. It is cold. Your friend is in front of an open window. (you / close).

8. You are going to play tennis with a friend. You have the ball. (we / start).

2. Complete the sentences using the words in the box. Sometimes two or three answers are possible.

Can could have may might must mustn't ought should

1. When you travel by bus, you … have a ticket.
2. When I was a young man, I … run 10 kilometres, but now I'm too old.
3. My mum says I … to come home before 10 O'clock.
4. … I go home early today, please?
5. You … to read this book – it's very interesting.
6. I'm going to take an umbrella because it … rain later.
7. She … speak French and Spanish, but her English is terrible.
8. What do you think? … I do the exam this year or next year?
9. You … watch television, but please keep it quiet.
10. Don't worry. You don't … to buy me a present.
11. … you give me some money, please? I've left my bag at home.

12. At the zoo, you … give food to the animals. It's very bad for them.

3. Fill in the blanks with a modal form from the box:

can – can't – could – couldn't – didn't need to – must – mustn't – needn't

1. You've got plenty of time. You … hurry.
2. There's a knock at the door. I'm expecting Paul. It … be him.
3. I can't get my phone to work. It … be out of order
4. … I ask you a question?
5. That was excellent work. But I … do it without you.
6. She … be 35. She looks older than that.
7. I … go to work on Saturdays. It's my day off.
8. Tom has given me a letter to post. I … forget to post it.
9. Ann stayed in bed this morning because she … go to work.
10. He … play chess when he was young.
11. You … drive a car when you're 18.
12. Jack spends the whole day just walking around. He … have a job.
13. When I was in school I … do a hand stand, but now I'm too old. I … do one any more.
14. My mother keeps telling me that we … wash our hands before we sit down at the dinner table.

4. Fill in the blanks with: CAN, CAN'T, COULD, COULDN'T, MUST or MUSTN'T:

1. She is a small baby. She … eat meat, but she … drink milk.
2. He is so ill that he … see the doctor.
3. It's raining heavily. You … take your own umbrella.
4. We … pick the flowers in the park. It's forbidden.
5. I … sing now but I … sing very well when I was a child.

6. Mike is only nine months old. He … eat nuts yet.
7. He is very fat. He … run so fast.
8. You are speaking very quickly. I … understand you.
9. I'm very tall, so I … play basketball.
10. You … park that car there. It's a no-parking zone.
11. Many students in Great Britain … wear a uniform when they go to school.
12. George has travelled a lot. He … speak 4 languages.
13. I … come with you now because I'm studying for my test.
14. Footballers … touch the ball with their hands.
15. … I use your phone?
16. I'm sorry I … come yesterday. I had to work late.
17. You … speed through the city. It's dangerous!
18. My hands are dirty. I … wash them.
19. You have been coughing a lot recently. You … smoke so much.
20. I'm very tired today. I … clean my room now, but I'll do it tomorrow.

5. You are going on a camping holiday in the summer. In your notebook, write two things you *have to* do at the campsite, two things you *mustn't* do and two things you *don't have to* do. Find necessary word combinations in the box:

arrive early, bring a tent, get up early, have parties, keep the campsite clean, make a lot of noise, pay in advance, wear a uniform

6. Read Text A

Text A
Computer Literacy or FITness

Information technology (IT) is the use of any computers, storage, networking and other physical devices, infrastructure and pro-

cesses to create, process, store, secure and exchange all forms of electronic data.

Between those who search aggressively for opportunities to learn more about information technology and those who choose not to learn anything at all about information technology, there are many who recognize the potential value of information technology for their everyday lives and who realize that a better understanding of information technology will be helpful to them. Information technology is changing rapidly. The electronic computer is just over 75 years old, "PC", as a personal computer, is less than 45 years old, and the World Wide Web has been known to the public for about 30 years (from 1989). In the presence of rapid change, it is impossible to give a fixed, once-and-for-all course that will remain current and effective.

Generally, "computer literacy" has acquired a "skills" connotation, implying competency with a few of today's computer applications, such as word processing and e-mail. Literacy is too modest a goal in the presence of rapid change, because it lacks the necessary "staying power." A better solution is for the individual to plan to adapt to changes in the technology.

People fluent with information technology (FIT persons) are able to express themselves creatively, to reformulate knowledge, and to synthesize new information. Fluency with information technology (i.e., what is called FITness) entails a process of lifelong learning in which individuals continually apply what they know to adapt to change and acquire more knowledge to be more effective at applying information technology to their work and personal lives.

7. Answer the questions:

1.What is information technology?
2.What does "computer literacy" mean?
3. Describe a "FIT person". Are you a "FIT person"?

8. Read Text B paying attention to phrases in bold:

Text B
The Information Age

Information technology is playing an increasingly important role in the work and personal lives of citizens.

We are now living in what some people call the **information age** or **digital age**, meaning that computers have become an essential part of our lives. Young people who have grown up with PCs and mobile phones are often called the **digital generation**. Computers, communications, digital information, software – the constituents of the information age – are everywhere.

Computers help students to **perform mathematical operations** and improve their maths skills. They are used to **access the Internet**, to **do basic research** and to communicate with other students around the world. Teachers use projectors and **interactive whiteboards** to **give presentations** and teach sciences, history or language courses. PCs are also used for administrative purposes – schools use word processors to write letters, and databases **to keep records** of students and teachers. A school website allows teachers to publish exercises for students to complete online. Students can also **enrol for courses** via the website and parents can **download** official **reports**.

Mobiles let you **make voice calls**, send texts, email people and download logos, ringtones or games. With a built-in camera you can send pictures and make video calls in **face-to-face mode**. New smartphones combine a telephone with web access, video, a games console, an MP3 player, a **personal digital assistant (PDA)** and a **GPS navigation system**, all in one.

In banks, computers **store information** about the money held by each customer and enable staff to **access** large **databases** and to **carry out** financial **transactions** at high speed. They also control the **cashpoints**, or **ATMs (automatic teller machines)**, which **dispense money** to customers by the use of a PIN-protected card. People use a Chip and PIN card to pay for goods and ser-

vices. Instead of using a signature to **verify payments**, customers are asked to **enter** a four-digit **personal identification number** (PIN), the same number used at cashpoints; this system makes transactions more secure. With online banking, clients can easily **pay bills** and **transfer money** from the comfort of their homes.

Airline pilots use computers to help them control the plane. For example, monitors **display data** about fuel consumption and weather conditions. In airport control towers, computers are used to **manage radar systems** and **regulate air traffic**. On the ground, airlines are connected to travel agencies by computer. Travel agents use computers to find out about the availability of flights, prices, times, stopovers and many other details.

9. Find words with the same meanings in the text:

a keep, save b execute, do c monetary d screen e integrated f connected to the Internet. g collection of facts or figures	h describes information that is recorded or broadcast using computers i program used for text manipulation j copy files from a server to your PC or mobile

Verbs and nouns often go together in English to make set phrases, for example access the Internet. These word combinations are called ***collocations****, and they are very common. Learning collocations instead of individual words can help you remember which verb to use with which noun. Here are some examples from the text on pages 11–12:* ***perform operations, do research, make calls, send texts, display data, write letters, store information, complete exercises, carry out transactions****.*

10. Make collocations from the text on pages 11–12:

1 give	A a PIN
2 keep	B money
3 access	C databases
4 transfer	D presentations
5 enter	E records

11. Use collocations from Text B and the exercise 10 to complete these sentences:

1. Thanks to Wi-Fi, it's now easy to … from cafes, hotels, parks and many other public places.
2. Online banking lets you … between your accounts easily and securely.
3. Skype is a technology that enables users to … over the Internet for free.
4. In many universities, students are encouraged to … using PowerPoint in order to make their talks more visually attractive.
5. The Web has revolutionized the way people … – with sites such as Google and Wikipedia, you can find the information you need in seconds.
6. Cookies allow a website to … on a user's machine and later retrieve it; when you visit the website again, it remembers your preferences.
7. With the latest mobile phones, you can … with multimedia attachments – pictures, audio, even video.

12. Find English equivalents of Russian word combinations in the Text B:

неотъемлемая часть нашей жизни, составляющие информационного века, загрузить официальные отчеты,

проводить фундаментальные исследования, загружать логотипы, вместо того чтобы использовать подпись, общаться со студентами по всему миру, совершать голосовые звонки, интерактивные доски, использовать в административных целях, выполнять упражнения онлайн, управлять радиолокационными системами, режим личной беседы, игровая приставка, выдавать деньги, данные о расходе топлива и погодных условиях.

13. Translate the word combinations and learn them by heart:

век цифровых технологий, хранить информацию, встроенная камера, ввести четырехзначный персональный идентификационный номер (ПИН), выполнять математические операции, доступ к Интернету, карманный компьютер, банкомат, интерактивные доски, проводить презентации, вести учет, записаться на курсы через веб-сайт, получать доступ к базам данных, мониторы отображают данные, выполнять финансовые операции с высокой скоростью, для подтверждения платежа, оплачивать счета и переводить деньги, не выходя из дома, чтобы узнать о наличии рейсов, цен.

14. Answer the questions.

1. How can you describe Information Age?
2. What are the key features of modern smartphones?
3. How are computers used by the students and teachers?
4. What is the role of computers in banks?
5. What does make payment system more secure?
6. How do computers help travel agents and airline pilots?
7. What is the role of computers in our society?
8. Give examples of using computers in everyday life: Text C.

15. Complete Text C with the following words:

financial Internet electronic print design microchips

Text C
Computers in Everyday Life

Computers have changed the way we do everyday things, such as working, shopping and looking for information. We (1) … houses with the help of PCs; we buy books or make flight reservations on the (2) … ; we use gadgets that spring to life the instant they are switched on, for example the mobile phone, the music player, or the car ignition, all of which use (3) … . Many people now work at home, and they communicate with their office by computer and telephone. This is called ”teleworking”.

With the appropriate hardware and software, a PC can do almost anything you ask. It’s a magical typewriter that allows you to type and (4) … any sort of document. It’s a calculating machine that makes (5) … calculations. It’s a filing cabinet that manages a large collections of data. It’s a personal communicator that lets you interact with friends. It’s a small lab that helps you edit photos and movies. And if you like (6) … entertainment, you can also use it to relax with games.

16. Match words from the previous exercise with their definitions:

1) tiny pieces of silicon containing complex electronic circuits;
2) to make or draw plans for something;
3) relating to money or how money is managed;
4) involving the use of electric current in devices such as TV sets;
5) the large system of connected computers around the world;
6) to produce text and pictures using a printer.

UNIT 2
WHAT IS A COMPUTER?

Grammar:	Future Tenses
Text A:	Parts of a Computer
Text B:	The Four Functions of a Computer
Text C:	Types of Computers

Grammar
Future Tenses

Present Simple	**Scheduled Events / Timetables (Запланированные события / Расписания)** Мы используем Present Simple (настоящее простое время), чтобы говорить **о будущих запланированных событиях** (события, которые вы не можете контролировать или изменить) и **расписаниях** (расписание общественного транспорта, расписание фильмов, время занятий, ТВ/ радио программы и т. д.), **действиях по графику.** Основной акцент на *дате* или *времени*, на которые запланировано что-то в будущем. – *The train leaves at 8:45 a.m. on Friday.* – *The next bus arrives in 12 minutes.* – *Susan's party/my next meeting starts at 8:00 p.m. on Saturday evening.*	**V/ V+s** **Do/ Does V**? **don't / doesn't V**
Present Continuous	**Plans / Arrangements (Планы / Договоренности)** Мы используем Present Continuous (с наречиями, относящимися к будущему) чтобы говорить **о наших будущих планах и договоренностях, когда известно время и/или место** (н-р, ***tomorrow, at six o'clock, on Friday***)	**be +Ving**

	– We're meeting at two o'clock. *– I'm staying at home tonight.*	
Be going to	**Intentions / Predictions with Evidence (Намерения / предсказания, основанные на том, что мы видим или знаем)** **1. Намерение – это то, что вы хотите сделать, но вы не запланировали или не знаете когда.** *– One day, I'm going to marry a prince.* *(A plan, but I dont know when).* *– What are you going to order? (at a café).* **2. Предсказания, основанные на том, что мы видим или знаем.** *– The dog is very angry, it's going to bite you!* *– Be careful, it's going to fall!*	**be going to +V**
Future Simple	**Predictions without Evidence / Factual Statements / Immediate Decisions / Offers Promises, Threats and Requests (Предсказания без доказательств / фактические утверждения / спонтанные решения / предложения, обещания, угрозы, просьбы** 1. **Предсказания, основанные на том, что вы думаете.** Часто со словами *think, hope, sure, expect, wonder, probably,* которые показывают, что это Ваше мнение, отношение к чему-то: *– I think the CD will be very popular.* *– I hope you will enjoy yoga.* ***2.*** Мы говорим **о факте, который случится в будущем *tomorrow, tonight, the day after tomorrow, next week, next year, in a week / in a month, soon*** *– I'm sorry you're having a bad day. But*	**will + V**

	tomorrow the sun will rise and it will be a new day. **3. Спонтанное (незапланированное) решение, принятое во время разговора.** – *A: The phone's ringing!* *B: I'll get it.* – *I don't known I'll check.* **4. Обещания, предложения, угрозы, просьбы.** – *I'll see you tomorrow. We'll send you an email.* – *Don't worry, everything will be alright.*	
Shall	**Offers and suggestions, asking somebody's opinion (предложения, когда мы спрашиваем о чьем-то мнении)** – *Shall we start?* – *Where shall we go this evening?*	**Shall I? Shall we?**
Future Continuous	**1. Действие, которое будет происходить в определенный момент в будущем**, время действия указывается с помощью таких слов: ***this time tomorrow / next week, at 3 o'clock tomorrow, at 10 a.m., in the morning/afternoon/evening, tonight at 6 p.m., at noon, at midnight, in a week/month/year*** – *This time next Sunday we will be flying to Hawaii.* **2. Действие, которое, по убеждению говорящего, обязательно будет происходить в будущем** – *He won't be meeting you tomorrow, because he has fallen ill.* **3. Вежливый вопрос о планах собеседника на ближайшее будущее, особенно когда нам нужно, чтобы этот**	**will + be + Ving**

	человек что-то для нас сделал *– Will you be using the printer for long? I need to print a document promptly.*	
Future Perfect	1. **Будущее действие, которое окончится до определенного момента в будущем.** Момент в будущем передается с помощью специальных слов: ***by, by the time, by then, by tomorrow, before, when, until/till***. Untill и till используются только в отрицательных предложениях. *– I will have translated the article by noon. By the time you come home, I will have cooked dinner.* **2. Прошедшее предполагаемое действие («должно быть», «вероятно»).** *– The reader will have noticed our negative attitude to any form of nationalism.*	**will + have + V3**
Future Perfect Continuous	**Будущее длительное действие, которое начнется ранее другого будущего момента или действия и будет продолжаться в этот момент.** Мы показываем с помощью предлога ***for*** сколько времени будет продолжаться действие, и указываем момент в будущем с помощью слов: ***by, next year, when.*** *– I will have been working at the project for a month when you join me.* *– We will have been living together for 12 years next year.*	**will + have + been + Ving**

1. Liz has come back to London from Holland. Her brother Tom has just met her at Liverpool Street Station. In the sentences below, think about when the person decides to do something. Put a tick if you think the phrase <u>underlined</u> is

correct. Otherwise write in the correct form of *will* or *be going to*:

Tom: Hi Liz. Do you want some tea or coffee after your journey?

Liz: Thanks. I'll (1) … have a tea.

Tom: I'm going to (2) … carry your bag – you look tired. We'll (3) … go to that cafe, over there. Here we are. So, welcome back to England. How was Holland?

Liz: Well, it was great to have some time to think, and I've made some decisions. I'll (4) … talk to the boss tomorrow, and I'll (5) … ask him if I can move to another department.

Tom: Good. I'm sure he'll (6) … give you what you want. Now, would you like something to eat?

Liz: Um, yes. I'm going to (7) … have a sandwich. Thanks. What about you?

Tom: No, thanks, I don't want to spoil my appetite. I've reserved a table for this evening at the Mexican restaurant in Leicester Square. I'll (8) … take Jill. What are you going to do this evening?

Liz: I haven't thought about it. I'll (9) … probably cook something. Oh, and I must ring Dad. Did you remember that it's his birthday tomorrow?

Tom: Yes, I remembered. He'll (10) … be fifty. Promise me you'll relax a bit?

Liz: Sure.

Tom: OK. I'll (11) … get you a taxi. Call me tomorrow. You won't (12) … forget, will you?

2. Read the text and make predictions about Victoria's new life. Complete the sentences with *will, 'll, won't* or *be going to*.

Victoria is from Russia. She moved to Vancouver last week with her parents. Victoria is 13 and she is a good student, but she

doesn't speak much English.What do you think Victoria's new life in Canada will be like?

1. She … learn English very quickly.
2. Victoria … like Canadian food.
3. Her friends in Russia … write to her.
4. She … forget Russian.
5. The climate … be a problem.
6. Her parents … worry about her.
7. She … feel homesick.
8. Victoria … get lost in Vancouver.
9. Her grandmother … visit her.
10. Her life … be very different.

3. Put the verb into the more suitable form: present continuous or present simple.

1. I (go) to the cinema this evening.
2. (the film / begin) at 3.30 or 4.30?
3. We (have) a party next Saturday. Would you like to come?
4. The art exhibition (finish) on 3 May.
5. I (not / go) out this evening. I (stay) at home.
6. "(you / do) anything tomorrow morning?" "No, I'm free. Why?"
7. We (go) to a concert tonight. It (start) at 7.30.
8. I (leave) now. I've come to say goodbye.
9. A: Have you seen Liz recently?
   B: No, but we (meet) for lunch next week.
10. You are on the train to London and you ask another passenger: "Excuse me. What time (this train / get) to London?"
11. You are talking to Helen: "Helen. I (go) to the supermarket. (you / come) with me?'
12. You and a friend are watching television. You say:
"I'm bored with this programme. What time (it / end)?"
13. I (not / use) the car this evening, so you can have it.

14. Sue (come) to see us tomorrow. She (travel) by train and her train (arrive) at 10.15.

4. Complete the following sentences choosing the correct future tense form for the verb in brackets: Present Simple, Present Continuous, Future Simple or going to

1. The train … (to arrive) at 12:30.
2. We … (to have) dinner at a seaside restaurant on Sunday.
3. It … (to snow) in Brighton tomorrow evening.
4. On Friday at 8 o'clock I … (to meet) my friend.
5. Paul … (to fly) to London on Monday morning.
6. Wait! I … (to drive) you to the station.
7. The English lesson … (to start) at 8:45.
8. Are you still writing your essay? If you … (to finish) by 4 pm, we can go for a walk.
9. I … (to see) my mother in April.
10. Look at the clouds – it … (to rain) in a few minutes.
11. When I … (to see) you tomorrow, I … (show) you my new book.
12. After you … (to take) a nap, you … (to feel) a lot better.
13. We … (to wait) in the shelter until the bus … (to come).
14. I'm very sorry Dr. Jones … (not be) back in the clinic until 2 pm.
15. Now I … (to check) my answers.

5. Put the verb into the correct form, will be (do)ing or will have (done):

1. Don't phone between 7 and 8. … (we /have) dinner then.
2. Phone me after 8 o'clock. … (we / finish) dinner by then.
3. Tomorrow afternoon we're going to play tennis from 3 o'clock until 4.30. So at 4 o'clock … (we / play) tennis.
4. A: Can we meet tomorrow?
   B: Yes. but not in the afternoon. … (I / work).

5. B has to go to the meeting which begins at 10 o'clock. It will last about an hour.

A: Will you be free at 11.30?

B: Yes. … (the meeting / end) by then.

6. Ben is on holiday and he is spending his money very quickly. If he continues like this, … (he / spend) all his money before the end of his holiday.

7. Do you think … (you / still / do) the same job in ten years' time?

8. Lisa is from New Zealand. She is travelling around Europe at the moment. So far she has travelled about 1.000 miles. By the end of the trip, … (she / travel) more than 3.000 miles.

9. If you need to contact me, … (I / stay) at the Lion Hotel until Friday.

10. A: … (you / see) Laura tomorrow?

B: Yes, probably. Why?

A: I borrowed this CD from her. Can you give it back to her?

6. Read Text A

Text A
Parts of a Computer

A **computer** is an electronic machine that accepts, processes, stores and outputs information. A typical computer consists of two parts: hardware and software.

Hardware: is any electronic or mechanical part of the computer system that you can see or touch.

Software is a set of instructions called a program, which tells a computer what to do.

There are three basic hardware sections.

1. The **CPU** is the heart of the computer, a microprocessor chip which processes data and coordinates the activities of all the other units. In a way, it is the "brain" of the computer.

2. The **main memory** holds the instructions and data which are being processed by the CPU. It has two main sections: **RAM** (random access memory) and **ROM** (read only memory).

3. **Peripherals** are the physical units attached to the computer. These can include input devices, output devices, storage devices and communications devices.

Input devices, which let us enter data and commands (e.g. keyboards, mouses, scanners, barcode readers, microphones, webcams (small digital video cameras used on the Web).

Output devices, which let us extract the results (e.g. monitors, printers, plotters, loudspeakers, headphones).

Storage devices, which are used to store information permanently (e.g. hard disks and DVD-RW drives, earlier there were floppy disks). Disk drives are used to read and write data on disks.

A common **communications device** is a **modem** (a modulator/demodulator used for converting digital signals to analogue signals and vice versa to allow a computer to be connected to the ordinary telephone system).

At the back of a computer there are **ports** into which we can plug external devices (e.g. a scanner, a modem, etc.) They allow communication between the computer and the devices. Modern desktop PCs have USB ports and memory card readers on the front panel.

7. Read these quotations and say which computer essential *(speaker, keyboard, mouse, software (e.g. word processor program), monitor, printer, CPU, CD/DVD drive, webcam, modem)* they refer to:

1. “Accelerate your digital lifestyle by choosing a Pentium at 4.3 GHz.”
2. “Right-click to display a context-sensitive menu.”
3. “You will see vivid, detailed images on 17” display.”
4. “This will produce high-quality output, with sharp text and impressive graphics.”

5. “Use it when you want to let the grandparents watch the new baby sleeping.”

6. “Press any key to continue.”

8. Match the terms with their definitions:

1 CD/DVD drive	A any socket into which a peripheral device may be connected
2 speaker	B device used to produce voice output and play back music
3 modem	C mechanism that reads and/or writes to optical discs
4 port	D device that converts data so that it can travel over the Internet
5 CPU (Central Processing Unit)	E a set of keys on a computer which you press to produce letters, numbers, etc.
6 keyboard	F the part of a computer that controls what it does
7 mouse	G the box of a computer that contains the hardware
8 case	H a small object connected to a computer, that you move with your hand and press to make the computer do things

9. Answer the questions:

1. What is a computer?
2. What is hardware?
3. Give the definition of software.
4. What is a program?
5. Describe a CPU.
6. What is main memory? What sections does it have?
7. Give the definition of peripherals.
8. What is input device?

9. What is output device?
10. How can we use storage devices?

10. Read Text B:

Text B

The Four Functions of a Computer

The four functions of a computer actually explain the core reasons why it was built. They include:

– Data input.
– Data processing.
– Information output.
– Data and information storage.

1. Data Input

Every computer is designed with data input as a first function, an activity which is accomplished via input devices.

Data entry is done manually, automatically or both. Manual input is done via add-on peripherals like the keyboard, mouse and stylus. Input can also be accomplished via vocal dictation applications and body gestures peripherals like Kinect and biometric devices.

Data may be entered into a database, spreadsheet or other forms of a computerized work area.

2. Data Processing

Data processing is the core function of a computer. Processing involves manipulation of raw data into before converting it into meaningful information. Usually, data is in raw form, and will thus undergo processing before dissemination for user consumption.

The ”brain” of the computer where data is processed is referred to as the microprocessor. It is also commonly known as the central processing unit (CPU) or accelerated processing unit (APU).

3. Information Output

When raw data has been manipulated by the microprocessor, the outcome is meant to be disseminated for useful purposes. The

output is thus referred to as information and is beneficial to the computer user.

Processed data or information can be:

– viewed as alphanumeric, images and video via a display hardware;

– listened to as audio files by use of a speaker;

– printed as hard copy output onto paper;

– printed as 3D models.

4. Data and Information Storage

The fourth and equally very important function of a computer is data and information storage. After sleepless nights of video and animation creation and editing, the user wants to have the finished product stored for future dissemination and additional editing.

A computer can store information internally and externally. The hard disk drive (HDD) and/or solid-state disk drive (SSD) are internal storage devices and serve to protect and house all data and information on a computer. In bigger systems, the RAID system is used. Multiple disk drives operate simultaneously to ensure data and information integrity.

External storage is achieved through accessories that attach externally to the computer. They include external drives and optical disks.

11. Remember the four functions of a computer and complete the following sentences:

1. Computer … is the visible or audible result of data processing – information that can be read, printed or heard by the user.

2. The CPU will process data as instructed by the programmes you're running. … includes functions like calculating, sorting, editing, drawing and searching.

3. DVDs were expected to replace CDs as … devices twenty years ago.

4. As a scanner the Sigma-100 can be used to … photographs as well as documents into the computer.

12. Answer the questions:

1. What are the four functions of a computer?
2. Describe the first function of a computer.
3. What is a core function of a computer?
4. What are the ways of information output?
5. How can information be stored?

13. Read Text C paying attention to the words in bold:

Text C

Types of Computers

There are different types of computer of varying size and power, including the following:

Supercomputer is the most powerful type of mainframe.

Mainframe is large, very powerful, multi-user i.e. can be used by many people at the same time, multi-tasking i.e. can run many programs and process different sets of data at the same time. Mainframes are used for large-scale computing purposes in banks, big companies and universities.

Minicomputer is smaller than a mainframe, powerful, multi-user, multi-tasking.

Personal computer (PC) is designed for a single user.

Desktop computer has a suitable size for sitting on an office desk.

Workstation is the most powerful type of desktop computers, used for graphic design, etc.

Portable computer can be carried around, can operate with batteries.

Laptop is large portable, can be rested on user's lap. A laptop (also called a **notebook** PC which has a size of a sheet of notebook paper) is a lightweight computer that you can transport easily. It

can work as fast as a desktop PC, with similar processor, memory, capacity and disk drives, but it is portable and has a smaller screen. Modern notebooks have a **TFT** (Thin Film Transistor) screen that produces very sharp images.

Instead of a mouse, they have a **touchpad** built into the keyboard – a sensitive pad that you can touch to move the pointer on the screen. They offer a lot of connectivity options: USB (Universal Serial Bus) ports for connecting peripherals, slots for memory cards, etc.

They come with battery packs, which let you use the computer when there are no electrical outlets available.

A **tablet PC** looks like a book with an LCD-screen on which you can write using a special digital pen. You can fold and rotate the screen 180 degrees. Your handwriting can be recognized and converted into editable text. You can also type at the detached keyboard or use voice recognition. It's mobile and versatile.

Pen-based which main input device is an electronic pen.

A personal digital assistant or **PDA** is a tiny computer which can be held in one hand. The term PDA refers to a wide variety of **hand-held** devices, palmtops and pocket PCs.

For input, you type at a small keyboard or use a stylus – a special pen used with a **touch screen** to select items, draw pictures, etc. Some models incorporate handwriting recognition, which enables a PDA to recognize characters written by hand. Some PDAs recognize spoken words by using voice recognition software.

They can be used as mobile phones or as personal organizers for storing notes, reminders and addresses. They also let you access the Internet via wireless technology. Without cables.

Note that the term **PC** usually refers to an **IBM** compatible personal computer i.e. an Apple Mac personal computer is not referred to as a PC. A computer that provides a service on a network e.g. storing files, sharing a printer, is known as a **server** computer. Server computers usually have a **UPS** (uninterruptible power supply) attached to them. This is a battery that automatically provides

an electricity supply to allow the server to shut itself down properly if the main supply fails.

14. Which type of computer do these descriptions refer to?

1) a hand-held computer which can be used as a telephone, a web explorer and a personal organizer;

2) a typical computer found in many businesses and popular for home use;

3) a large computer used for intensive data processing and often linked to many terminals;

4) a small computer that fits into items of clothing;

5) a portable computer that can be closed up like a briefcase, but it can be as powerful as a desktop PC;

6) a full-function PC, though it only weighs 1.1 kg – you can go to a meeting and write your notes on it, like a paper notepad; its screen mode can be changed from portrait to landscape.

15. Find English equivalents of Russian word combinations in the Text C:

очень мощный; легкий компьютер, который можно легко транспортировать; подходящий размер для размещения на рабочем столе; может использоваться многими людьми одновременно; можно носить с собой; размером с лист бумаги; может запускать много программ и обрабатывать разные наборы данных одновременно; экран, который дает очень четкие изображения; с аналогичным процессором, памятью, мощностью; программное обеспечение для распознавания голоса; он может работать от батарей; распознавание рукописного ввода; для хранение заметок, напоминаний; предлагать множество вариантов подключения; распознать и преобразовать почерк в редактируемый текст;

16. Translate word combinations and learn them by heart: многопользовательский; портативный компьютер;

многозадачность; рабочая станция; совместимый; порты для подключения внешних устройств; получить доступ к Интернет; большая электронно-вычислительная машина или универсальный, большой компьютер высокого уровня, предназначенный для решения задач, связанных с интенсивными вычислениями и обработкой больших объемов информации (одним словом); мобильный и универсальный; слоты для карт памяти; рабочая станция; ноутбук; планшет; тонкоплёночный транзистор; поставляться с аккумуляторами; ЖК-экран; КПК; через беспроводную технологию; предоставлять услугу в сети; распознавание голоса; ИБП.

17. Answer the questions:

1. What is the difference between supercomputer and mainframe?
2. What is a typical computer found in many businesses and popular for home use?
3. What is a workstation?
4. What is a laptop? What benefits of a laptop do you know?
5. What is a tablet PC? What functions of it do you know?
6. What is a PDA? What for can we use it?
7. What is a UPS?

18. Look at the computer advertisement. Translate the questions into English and find the answers:

Toshiba Satellite

– Intel Centrino processor; 1,024 MB RAM, 100 GB hard disk drive; DVD SuperMulti (+/-R double layer) drive.

– 15.4” widescreen TFT active-matrix LCD display.

– 85-key keyboard and touchpad; 2 memory slots,1 PC Card or PCMCIA slot.

– Wireless communications:Wi-Fi compliancy and Bluetooth.

– 4 USB ports for connecting peripherals; digital camera, MP3 player, modem, etc.

– 6-cell rechargeable Lithium-ion battery pack.

1. Какой тип компьютера рекламируют?
2. Какой у него экран?
3. Какое (указывающее) устройство заменяет мышку?
4. Какие у него есть порты, чтобы подключить камеру и музыкальный проигрыватель?
5. Какой источник питания он использует?

Classifying

Classifying means putting things into groups or classes. We can classify types of computers, parts a PC, etc. Some typical expressions for classifying are:

…are classified by…	***…are classified into***
…can be divided into	***X types / categories***
X types / categories	***X is a type of…***
…include(s)…	***…consist(s) of…***

19. Look at the ways of classifying and then use suitable classifying expressions to complete these sentences:

1. A computer … hardware and software.
2. Peripherals … three types: input, output and storage devices.
3. A word processing program … which lets the user create and edit text.
4. … of network architecture: peer-to-peer, where all computers have the same capabilities, and client-server (e.g. the Internet), where servers store and distribute data, and clients access this data.
5. Digital computers can … into five main types: mainframes, desktop PCs, laptops, tablet PCs and handheld PDAs.

UNIT 3
HARDWARE

Grammar: Articles
Text A: Central Processing Unit (CPU)
Text B: Main Memory

Grammar
Articles

Основная функция артикля – указывать на определенность или неопределенность существительного. Поэтому существуют **неопределенный артикль a/an** (indefinite article) и **определенный артикль the** (definite article), нулевой артикль (zero article) – это отсутствие артикля.

Главный принцип выбора артикля в английском языке: неопределенный артикль a/an мы ставим, когда говорим не о каком-то конкретном предмете, человеке или явлении, а об одном из многих. Если же речь идет о чем-то или ком-то конкретном, употребляем определенный артикль the.

Артикли на русский язык не переводятся, но если попытаться перевести по смыслу, то неопределенный артикль a/an значит «один, какой-то», определенный the – «этот», «тот».

I need a purse. – Мне нужна сумочка. (какая-то одна сумочка)
I need the purse I took yesterday. – Мне нужна сумочка, которую я брала вчера. (та самая, конкретная сумочка)

Мы **не используем артикли** a, an или the, если перед существительным уже стоит:

притяжательное местоимение (my – мой, his – его);
указательное местоимение (this – этот, that – тот);
числительное (one – один, two – два).

This is my house. – Это мой дом.
I have one sister. – У меня одна сестра.

Неопределенный артикль a

– одинаковый для всех родов: *a boy, a girl, a cat*

– не используется с существительными во множественном числе: *a boy → boys*

Неопределенный артикль an

– если слово начинается с гласного звука: *an arm* /ən ɑːm/, *an egg* /ən eg/, *an interesting* /ən ˈɪntrəstɪŋ/ *book*

Внимание!

Слова house (дом) и hour (час) начинаются с буквы h. В слове house /haʊs/ первый звук согласный, значит *a house*, а в слове hour /ˈaʊə(r)/ первый звук гласный, значит *an hour*.

Слова university (университет) и umbrella (зонтик) начинаются с буквы u. В слове university /juːnɪˈvɜː(r)səti/ первый звук согласный, значит *a university*, а в слове umbrella /ʌmˈbrelə/ первый звук гласный, значит *an umbrella*.

Неопределенный артикль a/an употребляется:

– **при упоминании чего-то в первый раз**:

I've just had a great idea.

– **с одним из группы, типа, рода:**

Shall we choose a book from this catalogue?

Coca-Cola is a carbonated soft drink.

– **с названием профессии, национальности:**

Peter is a truck driver. He is an American.

– **когда мы используем прилагательное для описания существительного**

Cairo is a very big city. It's a beautiful day.

– **с дробями, единицами меры, веса, большими числами**

one and a half kilos, a dozen eggs, a hundred envelopes

– **вместо "per" в значении "(for) every", "each":**

George calls me three times a/per day.

He was doing ninety miles an hour. Julie earns £500 a week.

– **вместе с half/quite:**

We need half a pound of sugar. This is quite a good story.

Неопределенный артикль **a/an не употребляется с неисчисляемыми существительными.**

Определенный артикль the употребляется:

– **с существительными, которые были упомянуты ранее. Первый раз мы используем артикль a/an, а второй раз – the.**

There is a bedroom and a living room. The bedroom is quite large.

– **с существительными, которые упоминаются впервые, но понятно о ком/о чем идет речь:**

Can you pass the marmalade? My life changed completely after the war.

– **с существительными, которые конкретизируются с помощью дополнительной информации:**

This is the man I told you about.

– **с существительными, единственными в своем роде** (the moon, the sky, the Sun): *The moon is full tonight*.

– **перед прилагательными в превосходной степени (самый …):** *This is the best film I've ever seen.*

– **перед порядковыми числительными:**

Who was the *first teacher you had at school?*

– **перед такими словами, как same, whole, right, left, wrong, only, main, last, next, previous:**

We have the *same interests.*

– **перед национальными группами:**

The British drink far too much tea.

– **перед фамилиями в значении семья, семейство:**

The Jacksons, the Pavlovs.

– **перед прилагательными в значении существительного во мн.ч., обозначающими группы людей** *(the young, the deaf, the poor): The rich get richer and the poor get poorer.*

– **с отдельными предметами, которые представляют класс:** *The lion is fast disappearing.*

– **с названиями музыкальных инструментов:**

I can't play the piano but I can play the guitar.

– **перед *cinema, theater, television*, а также словами, которые обозначают место, где происходит действие:**

What's on (the) television? I went to the cinema.

She has books everywhere: on the *table, on* the *floor, in* the *kitchen and even in* the *bathroom.*

– **перед названиями исторических событий:**

the Hundred Years' War, the Chinese Cultural Revolution

– **если название страны состоит из 2 и более слов:**

the Russian Federation, the United Kingdom

– **с некоторыми географическими названиями: океаны, моря, реки, каналы, регионы, пустыни, горные цепи, группы островов:**

The Thames flows into the North Sea.

The Arctic, the Mediterranean Sea, the Pacific Ocean, the Himalayas, the Bahamas, the Kalahari Desert

Без артикля употребляются:

– **большинство имен собственных:**

Peter, Mary, Hemingway.

– **названия стран (из 1 слова), города, континенты, штаты, острова, горы, озера, парки, дороги и улицы, площади, мосты, дворцы, замки, соборы, вокзалы и аэропорты:**

We took the train from Paddington Station to Bath.

France, Paris, Asia, Smith Street, Hyde Park, Mount Everest, Malta, Lake Michigan, Vnukovo.

– **названия компаний, а также магазинов, отелей, ресторанов и банков на –s, -'s (*Barclays Bank, Brown's Hotel, Selfridges*):** *She works for Lufthansa.*

– **виды спорта, игры, времена года, месяцы, дни недели, праздники, языки (без слова "language"):**

He's good at basketball. She speaks Italian very well.

– **неисчиляемые существительные и исчисляемые существительные во мн.ч., когда мы говорим в общем:**

Give peace a chance. Football is life. I hate wasps.

– **названия приемов пищи, когда говорим в общем:**

It's time for lunch. What's for dinner?

– **названия транспортных средств с предлогом by:**

We went there by car (or by bus, by train, by plane)

– **слова *school, university, college, court, hospital, prison, church, bed*, когда речь идет о цели, для которой они существуют. В значении «здание, место» употребляются с артиклем *the*:**

Sally is in prison. (she's a prisoner)

Sally is in the prison. (she's a visitor to that specific building)

1. Put a or an in the gaps:

1. I bought … new car yesterday.
2. It's … old film.
3. He's reading … interesting book.
4. The journey took … hour.
5. They've got … house in Spain.
6. We've lost … black cat.
7. It's … cheap restaurant.
8. I want to buy … umbrella.
9. He's … Italian business-man.
10. It was … difficult exam.

2. There are some mistakes in these sentences. Don't change anything if you think the underlined word is correct. Cross it out and change it if you think it's wrong.

1. I'm not sure what she does, but I think she's a doctor.
2. I saw the thousand different things when I was on holiday.
3. Be careful! That perfume costs £100 a bottle.
4. We must invite him to the party. He plays a piano and a guitar.
5. A: What does John do?
6. B: I'm not sure, but I think he is the teacher in a school.
7. She likes to drive at the hundred miles an hour.
8. I play the violin in an orchestra. They pay me £80 the day!
9. I've got the hundred jobs to do before we leave.

10. A: Is my handbag in the living-room?
11. B: No, it isn't. I saw it in a kitchen.

3. Complete the sentences by putting in a, an or the if required. Leave the gap empty if nothing is required. (Note that the following words in this exercise are uncountable nouns: music, fuel, education, fish, food, coffee, exercise.)

1. She reads … letters that had arrived that morning.
2. It was a nice day, so we had … lunch in … garden of my house.
3. Without … fuel, … cars don't work.
4. John was at home. He was reading … magazine in … living room.
5. Jane doesn't like … fish; she never eats it.
6. Did you like … food at … party yesterday?
7. A: Where's … coffee?
8. B: It's in … cupboard next to … sink.
9. I'm just going to … shops. I'll be back in a few minutes.
10. We phoned for … taxi to take us to … airport.
11. I like listening to … music when I come home.
12. His parents believe that … education is a very important thing.
13. After … dinner, I washed … plates and glasses.
14. Doctors say that … exercise is good for everybody.
15. I want to put some money into my bank account, so I'm going to … bank this afternoon. It's in Midland Street.
16. I had … sandwich for … lunch today.
17. We flew to … Dublin Airport in … Ireland.
18. It was … long flight, but eventually we arrived in … U.S.A.

4. Underline the most suitable phrase in each sentence:

A. Is this a person/the person you told me about?

B. This is the only cinema/an only cinema in the area.

C. Philip has just bought the Thames barge/a Thames barge.

D. I'm going to the British Museum/British Museum this afternoon.

E. Are you going to church/the church on Sunday?

F. Do you have a milk jug/milk jug?

G. The Prime Minister/Prime Minister will give a speech this afternoon.

H. The computer/Computer has already changed our lives dramatically.

I. I haven't been to an open-air theatre/open-air theatre before.

J. Here is a thousand pounds/the thousand pounds I owe you.

5. Complete each sentence with the most suitable word or phrase:

1. The butler was … I suspected.

a) last person; b) a last person; c) the last person; d) some last person.

2. Where … you borrowed last week?

a) is scissors; b) are the scissors; c) is some scissors; d) are scissors.

3. Why don't we go to the park …?

a) in the car; b) with a car; c) with car; d) by the car.

4. Too much rubbish is being dumped in … .

a) sea; b) the sea; c) a sea; d) some sea.

5. This is exactly … I was looking for.

a) job; b) a job; c) some job; d) the job.

6. Of all these cars, I think I prefer … .

a) a Japanese; b) some Japanese; c) the Japanese one; d) a Japanese one.

7. I try to go jogging at least four times … .

a) the week; b) of the week; c) a week; d) of a week.

8. Sally spent six months out of …

a) work; b) a work; c) the work; d) some work.

6. Read Text A:

Text A
Central Processing Unit (CPU)

There are three basic hardware sections: the central processing unit (CPU), main memory and peripherals.

The processor, also called the CPU or central processing unit is the heart and brain of your computer. To control instructions and data flow to and from other parts of the computer, the CPU relies heavily on a chipset, which is a group of microchips located on the motherboard. The chips itself are small pieces of silicon with a complex electrical circuit called an integrated circuit.

The processor consists of three main parts:

The **control unit** extracts instructions from memory and decodes and executes them.

The **arithmetic logic unit** (ALU) performs mathematical calculations (+, ~, etc.) and logical operations (AND, OR, NOT).

The **registers** are high-speed units of memory used to store and control data. One of the registers (the program counter, or PC) keeps track of the next instruction to be performed in the main memory. The other (the instruction register, or IR) holds the instruction that is being executed.

The power and performance of a computer is partly determined by the speed of its processor. A **system clock** sends out signals at fixed intervals to measure and synchronize the flow of data. **Clock speed** is measured in **gigahertz** (GHz). For example, a CPU running at 4GHz (four thousand million hertz, or cycles, per second) will enable your PC to handle the most demanding applications.

The main circuit board inside your system is called the **motherboard** and contains the processor, the memory chips, expansions slots, and controllers for peripherals, connected by **buses** – electrical channels which allow devices inside the computer to communicate with each other. The CPU has an internal bus for com-

munication with the internal cache memory, called the **backside bus**. The main bus for data transfer to and from the CPU, memory, chipset, and AGP socket is called the **front-side bus**.

The size of a bus, called **bus width**, determines how much data can be transmitted. It can be compared to the number of lanes on a motorway – the larger the width, the more data can travel along the bus. For example, a 64-bit bus can transmit 64 bits of data. **Expansion slots** allow users to install **expansion cards**, adding features like sound, memory and network capabilities.

Some computers utilize two or more processors. These consist of separate physical CPUs located side by side on the same board or on separate boards. Each CPU has an independent interface, separate cache, and individual paths to the system front-side bus. Multiple processors are ideal for intensive parallel tasks requiring multitasking. Multicore CPUs are also common, in which a single chip contains multiple CPUs.

7. Match the terms with their definitions:

1 Expansion cards	A handles all processor control signals. It directs all input and output flow, fetches code for instructions from microprograms and directs other units and models by providing control and timing signals.
2 motherboard	B determines how much data can be transmitted.
3 control unit (CU)	C extra circuit boards that are used to increase the functions of a computer.
4 arithmetic logic unit	D is a firm slotted board onto which computer circuitry is attached.
5 bus width	E is a major component of the central processing unit of a computer system. It does all processes related to arithmetic and logic operations that need to be done on instruction words.

8. Find English equivalents of Russian word combinations in the Text A:

в значительной степени опирается на набор микросхем; извлекать инструкции из памяти и выполнять их; отслеживать следующую инструкцию; для измерения и синхронизации потока данных; небольшие кусочки кремния со сложной электрической цепью; измеряться в гигагерцах; высокоскоростные единицы памяти, используемые для хранения и управления данными; группа микросхем, расположенных на материнской плате; для интенсивных параллельных задач, требующих многозадачности; выполнять математические вычисления и логические операции; частично зависеть; с фиксированными интервалами; процессор, работающий на частоте 4 ГГц; независимый интерфейс; отдельный кэш; быть распространенным.

9. Translate words, word combinations and learn them by heart:

интегральная схема; периферийные (внешние) устройства; центральный процессор; шина (канал передачи информации);
регистр команд; арифметико-логическое устройство; блок управления; основная память; счетчик программы; системные часы; мощность и производительность компьютера; системная шина, обеспечивающая соединение между x86/x86-64-совместимым центральным процессором и внутренними устройствами; тактовая частота; быстродействующая буферная память (кэш); основная монтажная плата; сетевые возможности; микросхемы памяти; шина кэш-памяти второго уровня в процессорах с двойной независимой шиной; ширина шины - количество линий ввода-вывода; платы и слоты расширения; многоядерные процессоры

10. Answer the questions:

1. What is the main function of a computers processor?
2. What unit of frequency is used to measure processor speed?
3. What are the main parts of the CPU?
4. What does ALU stand for? What does it do?
5. What is the function of the system clock?
6. What is a bus, backside bus, front-side bus?
7. What do you know about multiple processors?

11. Read Text B:

Text B

Main Memory

Random access memory (RAM) is a type of data storage used in computers that is generally located on the motherboard. This type of memory is volatile and all information that was stored in RAM is lost when the computer is turned off. Volatile memory is temporary memory while **ROM (read-only memory)** is non-volatile and holds data permanently when the power is turned off.

The RAM chip may be individually mounted on the motherboard or in sets of several chips on a small board connected to the motherboard. Older memory types were in the form of chips called dual in-line package (DIP). Although DIP chips are still used today, the majority of memory is in the form of a module, a narrow printed circuit board attached to a connector on the motherboard. The three main memory circuit boards types containing chips are: RIMMs (Rambus in-line memory modules), DIMMs (dual in-line memory modules) and SIMMs (single in-line memory modules). Most motherboards today use DIMMs.

There are two main types of RAM: **dynamic random access memory (DRAM)**, or Dynamic RAM, and static random access memory (SRAM). The RAM in most personal computers (PC's) is Dynamic RAM. All dynamic RAM chips on DIMMs, SIMMs or

RIMMs have to refresh every few milliseconds by rewriting the data to the module.

Static RAM (SRAM) is volatile memory and is often used in cache memory and registers because it is a lot faster and does not require refreshing like Dynamic RAM. SRAM retains information and is able to operate at higher speeds than DRAM. Because DRAM is a lot cheaper than SRAM, it's common to see PC manufacturers use DRAM.

The **BIOS (basic input/output system)** uses ROM to control communication with peripherals. The amount of RAM determines the number of programs you can run simultaneously and how fast they operate. RAM capacity can be expanded by adding extra chips, usually contained in small circuit boards called **dual in-line memory modules (DlMMs).**

Read-only memory (ROM) is a type of storage medium that permanently stores data on personal computers (PCs) and other electronic devices. It contains the programming needed to start a PC, which is essential for boot-up; it performs major input/output tasks and holds programs or software instructions.

There are numerous ROM chips located on the motherboard and a few on expansion boards. The chips are essential for the basic input/output system (BIOS), boot up, reading and writing to peripheral devices, basic data management and the software for basic processes for certain utilities.

Because ROM cannot be changed and is read-only, it is mainly used for firmware. **Firmware** is software programs or sets of instructions that are embedded into a hardware device. It supplies the needed instructions on how a device communicates with various hardware components. Firmware is referred to as semi-permanent because it does not change unless it is updated. Firmware includes BIOS, erasable programmable ROM (EPROM) and the ROM configurations for software.

ROM may also be referred to as **maskROM (MROM)**. MaskROM is a read-only memory that is static ROM and is programmed into an integrated circuit by the manufacturer. An

example of MROM is the bootloader or solid-state ROM, the oldest type of ROM.

12. Find the words and word combinations (1–20) in the text above. Can you guess the meaning? Give Russian equivalents

1. Random access memory (RAM) 2. Read-only memory 3. Volatile/non-volatile 4. Narrow printed circuit board 5. Dynamic random access memory (DRAM) 6. Static RAM (SRAM) 7. Rewrite the data 8. Dual in-line package 9. RIMMs (Rambus in-line memory modules) 10. DIMMs (dual in-line memory modules)	11. SIMMs (single in-line memory modules) 12. BIOS (basic input/output system) 13. Dual in-line memory modules (DlMMs) 14. Essential for boot-up 15. To hold programs or software instructions 16. Firmware 17. Embedded into a hardware device 18. Erasable programmable ROM (EPROM) 19. MaskROM (MROM)

13. Answer the questions:

1. What are three main memory circuit boards types? Which type is used more than others?
2. What type of memory is permanent and includes instructions needed by the CPU?
3. What is the difference between two main types of RAM?
4. How can RAM be increased?
5. What do you know about the BIOS?
6. What is a firmware?
7. What is a MaskROM?

UNIT 4
PERIPHERALS (Part I)

Grammar:	Passive Voice
Text A:	Input Devices
Text B:	Input Devices: the Eyes of your PC
Text C:	Output Devices: Display Screens

Grammar
Passive Voice

Если подлежащее само производит действие, то мы используем глагол в действительном залоге (active voice):

He wrote this letter last week.

Пассивный залог (passive voice) – это когда в роли подлежащего объект, над которым было произведено действие:

The letter was written (by him) last week.

Пассивный залог в английском языке употребляется в тех случаях, когда неизвестно, неважно или ясно из ситуации, кто произвел действие:

Students are asked not to smoke. My bike has been stolen!

Mr Jones will be arrested. The box was opened with a knife.

Если мы хотим подчеркнуть кто исполнитель действия, то используем предлог by:

He was asked about the accident by the police yesterday.

Если действие осуществляется при помощи какого-либо предмета, инструмента, материала, то используется предлог with:

The streets are covered with snow.

Внимание! Только переходные глаголы (у которых может быть дополнение (объект) употребляются в пассивном залоге.

They sent the letter. The letter was sent.

They arrived late. (нельзя употребить в пассивном залоге)

Глаголы с двумя дополнениями могут образовывать пассивный залог двумя способами:

They sent me the letter. (active voice)

I was sent the letter. The letter was sent to me. (passive voice)

Глаголы, которые обозначают состояние лица или предмета, а не действие или процесс, **не употребляются** в пассивном залоге: ***have, resemble, become, fit, suit, lack*** и другие.

I resemble *my father. Her job* has become *her life.*

I like this place. (нельзя употребить в пассивном залоге)

Формы пассивного залога образуются по схеме: **to be +V3**, где **to be** – вспомогательный глагол, который ставится в нужную форму (изменяемая часть), а **V3** (смысловой глагол) всегда стоит в третьей форме (неизменяемая часть).

Времена пассивного залога

<table>
<tr><th>Время</th><th colspan="2">Сказуемое</th><th>Пример</th></tr>
<tr><td>Present Simple</td><td>am/is/are</td><td rowspan="3">+ written</td><td>It is written by Sam. – Это написано Сэмом.</td></tr>
<tr><td>Past Simple</td><td>was/were</td><td>It was written by Sam yesterday. – Это было написано Сэмом вчера.</td></tr>
<tr><td>Future Simple</td><td>will be</td><td>It will be written by Sam tomorrow. – Это будет написано Сэмом завтра.</td></tr>
<tr><td>Present Continuous</td><td>am/is/are</td><td rowspan="2">+ being written</td><td>It is being written by Sam now. – Это пишется Сэмом сейчас.</td></tr>
<tr><td>Past Continuous</td><td>was/were</td><td>It was being written by Sam at 10 a.m. yesterday. – Это писалось Сэмом вчера в 10 утра.</td></tr>
<tr><td>Future Continuous, Future Perfect</td><td colspan="3">НЕ СУЩЕСТВУЕТ</td></tr>
</table>

Continuous			
Present Perfect	**have/has**	**+ been written**	*It has just been written by Sam.* – Это было только что написано Сэмом.
Past Perfect	**had**		*It had been written by Sam before I came back.* – Это было написано Сэмом до того, как я вернулся.
Future Perfect	**will have**		*It will have been written by Sam by the end of July.* – Это будет написано Сэмом к концу июля.

Отрицательная форма глагола в пассивном залоге образуется с помощью частицы **not**, она стоит **за вспомогательным глаголом:**

Rome was not built in a day. – Москва не сразу строилась.

Если вспомогательных глаголов несколько, то not ставится **после первого:**

The annual budget has not been adopted. – Годовой бюджет не принят.

Для образования **вопросительного предложения** в пассивном залоге первый вспомогательный глагол ставится перед подлежащим:

Is Kimberly accused of stealing the money? – Кимберли обвиняют в краже денег?

1. Choose the most suitable verb form in each sentence:

1. Exams (are/were/will be) taken every June.
2. The shop (is/was/will be) opened next month.

3. My father (is/was/will be) invited to school last Tuesday.
4. Bread (is/was/will be) made from flour.
5. Moscow (is/was/will be) built in 1147.
6. In Europe Christmas (is/was/will be) celebrated on the 25th of December.
7. Our car (is/was/will be) bought three years ago.
8. The poem (is/was/will be) learnt by heart next week.
9. The rooms (are/were/will be) tidied twice a week.
10. All the continents (are/were/will be) washed by the great oceans.

2. Underline the verb forms which are not possible:

1. My car has being stolen.
2. Jack was borned on a Thursday.
3. Then I realised that none of the guests had been sent an invitation.
4. Mary's car is being serviced today.
5. Your order will been sent as soon as possible.
6. The hole in the road was being repaired when I came home.
7. This swimming pool is used by over a thousand people each week.
8. When was this church built?
9. An address is writing on the back of the envelope.
10. Customers are request to ask for a receipt.

3. Make interrogative and negative sentences:

1. The child was bitten by an exotic insect. (–; '?)
2. The zoo will be reconstructed next August. (–; ?)
3. The luggage has been checked at the customs. (–; ?)
4. Beautiful souvenirs are sold in the centre of the city. (–; ?)
5. The job will be finished at 3 o'clock. (–; ?)
6. The party was celebrated at home. (–; ?)
7. He was told to come on time. (–; ?)

8. You are invited to the party. (–; ?)
9. This question will be discussed tomorrow. (–; ?)
10. Your letters were sent yesterday. (–; ?)

4. Rewrite each sentence so that it contains a passive form, and does not contain the words *in italics*.

1. *Apparently*, Freddie has a wife in Scotland.
2. *Nobody* knows *anything* about Brenda's family.
3. People think that *someone* started the fire deliberately.
4. You should *ask* a doctor to see to that cut.
5. *People* say that Chris was in the army.
6. My trousers *need* to be pressed before I leave.
7. *No-one* has signed this letter.
8. Mary's hair still *needs* cutting.
9. *Somebody* has cleaned the room.
10. *They* have postponed the meeting.
11. *Somebody* is using the computer at the moment.
12. I didn't realise that *somebody* was recording our conversation.
13. When we got to the stadium, we found that *they* had cancelled the game.
14. *They* are building a new ring road round the city.
15. *They* have built a new hospital near the airport.

5. Rewrite each sentence so that it contains a form of *have something done*. Do not include the agent.

1. A painter painted our house last month. – *We had our house painted last month.*
2. The hairdresser is cutting my hair this afternoon.
3. Someone has stolen my motorbike.
4. The dentist has taken out all of Ricky's teeth.
5. I haven't been to the car-wash for a long time.

6. The men are coming to put in the new central heating on Saturday.

7. Someone broke Harry's nose in a fight.

8. Isn't it time someone fixed your television?

6. Read Text A:

Text A
Input Devices

Input devices are the pieces of hardware which allow us to enter information into the computer. The most common are the keyboard and the mouse. Examples of input devices include:

– **Keyboards:** Allow users to input alphanumeric data and commands.

– **Pointing devices** and **game controllers**: Allow users to direct application software and interact with graphical user interfaces.

– **Audio and video devices**: Allow users to capture sound and images.

We can also interact with a computer by using one of these: a light pen, a scanner, a trackball, a graphics tablet a game controller or a microphone.

Input also may come from other computers via input/output (I/O) devices, like network adapters and Bluetooth devices.

The Keyboard

A standard PC keyboard has various groups of keys:

Cursor control keys include arrow keys that move the insertion point up, down, right and left, and keys such as End, Home, Page Up and Page Down, which are used in word processing to move around a long document.

Alphanumeric keys represent letters and numbers, as arranged on a typewriter.

Function keys appear at the top of the keyboard and can be programmed to do special tasks.

Dedicated keys are used to issue commands or produce alternative characters. For example: **Ctrl** changes the functions of other keys [e.g. Ctrl + X cuts the selected text). **Caps Lock** sets the keyboard in "CAPITALS" mode; it only affects letters. **Enter** (or Return) is pressed to select options from a menu or to start a new paragraph.

Backspace deletes the character to the left of your current position.

A **numeric keypad** appears to the right of the main keyboard. The Num Lock key is used to switch from numbers to editing keys.

The Mouse

A mouse is a hand-held device that lets you move a pointer or a cursor and select items on the screen. It has one or more buttons to communicate with the PC. A scroll wheel lets you move through your documents or web pages. The pointer looks like an I-bar, an arrow or a pointing hand.

An optical mouse has an optical sensor instead of a ball underneath. A cordless (wireless) mouse has no cable: it sends data via infrared signals or radio waves. Mouse actions:

– **to click**, press and release the left button;

– **to double-click**, press and release the left button twice;

– **to drag**, hold down the button, move the pointer to a new place and then release the button;

– **to right-click**, press and release the right button; this action displays a list of commands.

7. Which input device (*keyboard, mouse, light pen, scanner, trackball, joystick, graphics tablet, touch screen, barcode reader, touchpad, game controller, microphone, digital camera, webcam)* **would you use for these tasks?**

1) to play computer games;
2) to copy images from paper into computer;
3) to read price labels in a shop;

4) to select text and click on links on web pages;
5) to enter drawings and sketches into a computer;
6) to input voice commands and dictate text;
7) to draw pictures or select menu options directly on the screen;
8) to take and store pictures and then download them to a computer.

8. Match the descriptions (1–8) with the names of the keys (a–h):

1. A long key at the bottom of the keyboard. Each time it is pressed, it produces a blank space. 2. It moves the cursor to the beginning of a new line. It is also used to confirm commands. 3. It works in combination with other keys. For example, you press this key and C to copy the selected text. 4. It removes the character to the left of the cursor or any selected text. 5. It produces UPPER CASE characters. 6. It produces UPPER CASE letters, but it does not affect numbers and symbols. 7. It moves the cursor horizontally to the right for a fixed number of spaces (in tabulations and data fields). 8. They are used to move the cursor, as an alternative to the mouse.	a) arrow keys b) return/enter c) Caps Lock d) shift e) tab f) space bar g) backspace h) Ctrl

9. Answer the questions:

1. What is an input device? What input devices do you know?
2. What groups of keys does a standard PC keyboard have?

3. What are the functions of dedicated keys?
4. What is a mouse?
5. What are mouse actions?

10. Find the words and word combinations (1–15) in the text above. Can you guess the meaning from context? Give Russian equivalents.

1. Input devices 2. Pointing devices 3. Game controllers 4. Light pen 5. Trackball 6. Graphics tablet 7. Cursor control keys 8. To interact with graphical user interfaces	9. Alphanumeric keys 10. Function keys 11. Dedicated keys 12. Numeric keypad 13. To click, to double-click, to right-click 14. To drag 15. Barcode reader

11. Read Text B:

Text B
Input Devices: The Eyes of your PC
Scanners

A **scanner** is a peripheral that reads images and converts them into electronic codes which can be understood by a computer. The paper with the image is placed face down on a glass screen, as with a photocopier. Beneath the glass are the lighting and measurement devices. Once the scanner is activated, it reads the image as a series of dots and then generates the digitized image that is sent to the computer and stored as a file. The scanner operates by using three rotating lamps, each of which has a different coloured filter: red, green and blue. The resulting three separate images are combined into one by appropriate software.

There are different types of scanners:

Image scanner, which digitizes a two-dimensional image.

3D scanner, which digitizes the three-dimensional shape of a real object.

Motion picture film scanner, which scans original film for storage as a digital file.

Laser scanner, which guides a laser beam along a path, sometimes combined with a measurement.

Stepper is a part of the photolithography process.

A **biometric** scanner is an electronic device with a sensor to read patterns or images from faces, irises and finger pads to create a biological template or profile.

Flatbed is built like a photocopier and is for use on a desktop; it can capture text, colour images and even small 3D objects.

A flatbed scanner is an optical scanner which makes use of a flat surface for scanning documents. The scanner is capable of capturing all elements on the document and does not require movement of the document. Flatbed scanners are effective scanners for delicate materials such as vintage photographs, papers and other documents which are fragile.

A hand-held scanner is small and T-shaped, ideal to capture small pictures and logos. It is used to scan physical documents into their digital forms that can be stored, edited, transferred and emailed digitally. This device is especially useful when space is a concern, as flatbed scanners tend to take up a large amount of space.

A **pen scanner** looks like a pen; you can scan text, figures, barcodes and handwritten numbers.

Barcode reader reads barcodes on the products sold in shops and send the price to the computer in the cash register. Barcodes consist of a series of black and white stripes used to give products a unique identification number.

The **resolution** of a scanner is measured in dpi or dots per inch. For example, a 1,200 dpi scanner gives clearer, more detailed images than a 300 dpi scanner.

Most scanners come with **Optical Character Recognition** software. OCR allows you to scan pages of text and save them into your word processor; they can then be edited.

Digital Cameras

A digital camera doesn't use film. Photos are stored as digital data (bits made up of 1s and 0s), usually on a tiny storage device known as a **flash memory** card. You can connect the camera or memory card to a PC and then alter the images (you can cut, paste, add effects, etc.) using a program like Adobe Photoshop, or you can view the images on a TV set. Many printers have a special socket so that you can print images directly from a memory card or camera.

Camcorders and Web Cameras

A **camcorder**, or digital video camera, records moving pictures and converts them into digital data that can be stored and edited by a computer with special video editing software. Digital video cameras are used by home users to create computer art and video conferencing. They are also used to send live video images via the Internet. In this case they are called **web cameras**, or webcams. They can be used to record photos and video onto your hard disc.

The resolution of webcams is expressed in megapixels (million pixels). Webcams connect to the PC via a USB (universal serial bus) or FireWire port; they display video at 24 to 30 frames (pictures) per second. Some include a **headset** with a microphone and earpiece.

12. Find the words and word combinations (1–16) in the text above. Can you guess the meaning from context? Give Russian equivalents.

1 Image scanner	10 A hand-held scanner
2 Three-dimensional shape	11 Barcode reader
3 Motion picture film scanner	12 Optical Character Recognition
4 Laser beam	

5 Stepper	13 A camcorder
6 To read patterns or images from faces, irises and finger pads	14 To view the images on a TV set
7 Flatbed scanner	15 A special socket
8 To capture text	16 A headset with a micro-phone and earpiece
9 A flat surface	

13. Complete the sentences with appropriate words from the Text B:

1. Scanners and cameras are … devices used to transfer images into a format that can be understood by computers.
2. A … lets you copy photos and printed documents into your PC.
3. It has become one of life's most familiar sounds – the beep of the supermarket till whenever a … is scanned.
4. If you need to scan 35mm … you should go for a dedicated 35mm film scanner which concentrates all its dots into a tiny area.
5. This scanner has a resolution of 300 x 500 … .
6. A … scanner is small enough to hold in your hand.
7. A … scanner is used to capture lines of text, barcodes and numbers.
8. Most digital cameras use flash … cards to store photos.
9. … scanners have a flat surface and take at least A4-sized documents.
10. To scan photographic negatives or slides you will need a … scanner.

14. Answer the questions:

1. How does a scanner send information to the computer?
2. Where is the difference in the usage of flatbed and handheld scanners?
3. What is a barcode reader?
4. What is Optical Character Recognition?

5. How do digital cameras store photographs?
6. What feature allows mobile phone users to take pictures?
7. What kind of software is used to manipulate video clips on the computer?

15. Read Text C:

Text C
Output Devices: Display Screens

A **computer monitor** is an output device that displays information in pictorial form, it includes a screen, circuitry and the case in which that circuitry is enclosed. It provides instant feedback by showing you text and graphic images as you work or play. A monitor is also known as a screen or a **visual display unit (VDU).**

Older computer monitors made use of cathode ray tubes (CRT), which made them large, heavy and inefficient. Nowadays, flat-screen LCD monitors are used in devices like laptops, PDAs and desktop computers because they are lighter and more energy efficient. LCD monitors are also called flat panel or flat screen displays.

A **CRT** monitor is similar to a traditional TV set. It contains millions of tiny red, green and blue phosphor dots that glow when struck by an electron beam that travels across the screen and create a visible image.

An **LCD (Liquid Crystal Display)** is made of two glass plates with a liquid crystal material between them. The crystals block the light in different quantities to create the image. Active-matrix LCDs use **TFT (thin film transistor**) technology, in which each pixel has its own switch. The amount of light the LCD monitor produces is called **brightness** or luminance, measured in cd/mi (candela per square metre).

Resolution – the clarity of the image depends on the number of pixels (short for picture elements) contained on a display, horizontally and vertically. A typical resolution is l024x768. The sharpness of images is affected by **dot pitch**, the distance between the pixels on the screen. The shorter the distance, the sharper and clearer the images are, so a dot pitch of 0.28 mm or less will produce a sharp image.

Two measurements describe the size of your display: the aspect ratio and the screen size. **Screen size** – the viewing area is measured diagonally; in other words, 17" screen measures l7 inches from the top left corner to the bottom right. **Aspect Ratio** is the relation of the vertical length to the horizontal length of the monitor (e.g. 16:9 or 4:5). Historically, computer displays, like most televisions, have had an aspect ratio of 4:3 – the width of the screen to the height is four to three. For widescreen LCD displays, the aspect ratio is 16:9, very useful for viewing DVD movies, playing games and displaying multiple windows side by side. High-definition TV also uses this format.

Inside the computer there is a **video adapter**, or graphics card, which processes images and sends signals to the monitor. CRT monitors use a VGA (video graphics adapter) cable, which converts digital signals into analogue signals. LCD monitors use a DVI (digital video interface) connection.

Colour depth refers to the number of colours a monitor can display. This depends on the number of bits used to describe the colour of a single pixel. For example, an old VGA monitor with an 8-bit depth can generate 256 colours and a Super VGA with a 24-bit depth can generate 16.7 million colours. Monitors with a 32-bit depth are used in digital video, animation and video games to get certain effects.

Refresh rate is the number of times that the image is drawn each second. If a monitor has a refresh rate of 75 Hertz (Hz), it means that the screen is scanned 75 times per second. If this rate is low, you will notice a flicker, which can cause eye fatigue.

PCs can be connected to **video projectors**, which project the image onto a large screen. They are used for presentations and home theatre applications.

In a **plasma screen**, images are created by a plasma discharge which contains noble (non-harmful) gases. Plasma TVs allow for larger screens and wide viewing angles, making them ideal for movies. **Organic Light-Emitting Diodes (OLEDs)** are thin-film LED displays that don't require a backlight to function. The material emits light when stimulated by an electrical current, which is known as electroluminescence. They consume less energy, produce brighter colours and are flexible – i.e. they can be bent and rolled up when they're not being used.

16. Find the words and word combinations (1–15) in the text above. Can you guess the meaning from context? Give Russian equivalents.

1. To display information in pictorial form 2. Visual display unit (VDU) 3. Cathode ray tubes (CRT) 4. LCD (Liquid Crystal Display) 5. Phosphor dots 6. TFT (thin film transistor) technology 7. Brightness or luminance	8. Sharpness of images 9. Dot pitch 10. Aspect Ratio 11. High-definition TV 12. Colour depth 13. Refresh rate 14. Organic Light-Emitting Diodes (OLEDs) 15. Eye fatigue

17. Decide if these sentences are True or False. If they are false, correct them.

1. The images shown on monitor are not generated by the video card.

2. All visible colours can be made from mixing the three primary colours of red, yellow and blue.

3. Typical CRT-based displays occupy less space than LCD displays.

4. Active-matrix LCDs do not use a technology called thin film transistor or TFT.

5. The size of the screen is measured horizontally.

6. Display Resolution, also known as dots per inch (DPI), this determines the number of pixels per linear inch.

7. CRTs are more expensive than LCDs, but they are heavy, can flicker and emit radiation.

8. LCDs offer better quality and take up less space, so they are replacing CRTs.

18. Complete these definitions with the following words:

Resolution, pixel, aspect ratio, colour depth, video adapter, plasma screen

1. … – the smallest unit on a display screen or bitmapped image (usually a coloured dot).

2. … – an expansion card that generates the video signal sent to a computer display.

3. … – the width of the screen in proportion to its height.

4. … – also called gas discharge display.

5. … – the number of pixels contained in a display horizontally and vertically.

6. … – the number of bits used to hold a colour pixel; this determines the maximum number of colours that can be displayed.

19. Answer the questions:

1. What do CRT and LCD stand for?
2. How is the screen size measured?
3. What technology is used by active-matrix LCDs?

4. Which unit of frequency is used to measure the brightness of a display?

5. What is Aspect Ratio? Which is the most common aspect ratio of computer displays?

6. What part inside the computer processes images and sends signals to the monitor?

7. What substance produces light and colour when hit by electrons in a CRT monitor?

8. What are the three advantages of OLED displays?

UNIT 5
PERIPHERALS (Part II)

Grammar: Prepositions
Text A: Output Devices: Printers
Text B: Storage Devices

Grammar
Prepositions
Prepositions of place (Предлоги места)

мы используем перед существительным или местоимением, чтобы сказать где находится кто-то или что-то: **under, above, over, below, opposite, in front of, behind, next to, near, beside, by, between, outside, inside, on top of**

Если что-то находится внутри большого пространства, то используем **in:** *in the box, in the city, in my study,*

Если указываем конкретное место, положение, точку на карте, то – **at:** *at the station, at work, at the door*

Сравните: *The shop is at 42 Culver Road. (at = point)*
The shop is in Culver Road. (in= inside a larger space)
They met in the cinema. (inside) They met at the cinema. (place)

Запомните употребление предлогов **at, in** и **on**:

at	**at + place**: *A: Where's Jo? B: He's at the doctor's.* **at the top / at the bottom (of)** *Look at the exercise at the top of the page.*

	at the beginning / at the end (of): *The post office is at the end of the street.*
in	**in+ city/country:** *They live in Paris.* **in a taxi / in the car:** *Let's go to the station in a taxi / in the car.* **in the north / in the south / in the east / in the west:** *They live in the west of the country.* **in the corner:** *Let's sit in the corner.* **in the centre:** *There are a lot of shops in the centre of the town.*
on	**on the top/bottom shelf:** *The presents are on the top shelf of the cupboard.* **on the bus/plane/train:** *The passengers are on the train.* **on the ground/first/second/top floor:** *His apartment is on the first floor.* **on the left / on the right:** *It's the second door on the left.* **on TV:** *There's a good programme on TV tonight.*

Prepositions of time (Предлоги времени)

in	– **С частями дня**: *in the morning, in the afternoon, in the evening* **Но *At night*** – **С временами года:** *in (the) summer/winter/autumn/spring* – **С месяцами, годами, веками:** *in December, in 1995, in the 18th century* – **В значении «через какой-то промежуток времени»:** *in an hour, in a month, in a week, in two days*
on	– **С днями недели:** *on Monday, on Monday morning, on weekdays* **Но *At the weekend*** – **С датами:** *on the 15th of July, on my birthday*
at	– **В конкретное время (часы, минуты):** *at 3 o'clock, at 7.25*

	– **Приемы пищи:** *at breakfast* – **Со словами time, moment:** *at lunchtime, at the same time, at the (present) moment*

Внимение! Без предлогов:

– со словами **this / that / some / each / every / last / next:** *last year, next Friday, every New Year*

– слова **later, today, tonight, tomorrow, the day after tomorrow, yesterday, the day before yesterday**

1. Complete the sentences. Use *at, on* or *in* + the following:

the evening, about 20 minutes, the same time, the Middle Ages, the moment, 1 July 1969, the 1920s, night, Saturday, 11 seconds

1. If the sky is clear, you can see the stars … .
2. After working hard during the day, I like to relax … .
3. Neil Armstrong was the first man to walk on the moon … .
4. It's difficult to listen if everyone is speaking … .
5. Jazz became popular in the United States … .
6. I'm just going out to the shop. I'll be back … .
7. (on the phone) "Can I speak to Dan?" "I'm afraid he's not here … ".
8. Many of Europe's great cathedrals were built … .
9. Ben is a very fast runner. He can run 100 metres … .
10. Liz works from Monday to Friday. Sometimes she also works … .

2. Put in *at, on* or *in*:

1. Mozart was born in Salzburg … 1756.

2. I haven't seen Kate for a few days. I last saw her … Tuesday.

3. The price of electricity is going up … October.

4. … weekends, we often go for long walks in the country.

5. I've been invited to a wedding … 14 February.

6. Jonathan is 63. He'll be retiring from his job … two years' time.

7. I'm busy just now, but I'll be with you … a moment.

8. Jenny's brother is an engineer, but he doesn't have a job … the moment.

9. There are usually a lot of parties … New Year's Eve.

10. I don't like driving … night.

11. The telephone and the doorbell rang … the same time.

12. The course begins … 7th January and ends sometime … April.

3. Complete the sentences with *on, in, at* or *for*:

1. Water boils … 100 degrees Celsius.

2. When I was 14, I went … a trip to France organised by my school.

3. There was panic when people realised that the building was … fire.

4. Julia's grandmother died recently … the age of 79.

5. Can you turn the light on, please? I don't want to sit … the dark.

6. We didn't go … holiday last year. We stayed at home.

7. I'm going to Switzerland … a short holiday next month.

8. I won't be here next week. I'll be … holiday.

9. Technology has developed … great speed.

10. Alan got married … 17, which is rather young to get married.

11. I heard an interesting programme … the radio this morning.

12. … my opinion, violent films should not be shown … television.

13. I wouldn't like to go … a cruise. I think I'd get bored.

14. I mustn't eat too much. I'm supposed to be … a diet.

15. I wouldn't like his job. He spends most of his time talking … the phone.

16. The earth travels round the sun … 107,000 kilometres an hour.

17. "Did you enjoy your holiday?" "Not every minute, but … the whole, yes."

18. When you write a cheque, you have to write the amount … words and figures.

4. Read Text A:

Text A

Output Devices: Printers

Technical details

A **printer** is a device that prints your texts or graphics on paper.

The output on paper or acetate sheets is called **printout** or **hard copy.**

A program in your computer, called the **printer driver**, converts data into a form that your printer can understand.

A **print spooler** stores files to be printed when the printer is ready. It lets you change the order of documents in the queue and cancel specific print jobs.

The output quality or **resolution**, is measured in **dpi** or dots per inch. The speed of your printer is measured in **pages per minute** (**ppm**).

In a network users can share a printer connected to a **print server**, a computer that stores the files waiting to be printed.

Types of printers

Printing is the final stage in creating a document. Since the results you can obtain with different types of printer will vary sub-

stantially, here is a guide to help you decide which one is most suitable for your needs.

To begin with, you should take into account that printers vary in cost, speed, print quality, and other factors such as noise or printing method. Technology is evolving so quickly that there is always a printer for every application or need.

Dot-matrix printers use pins to print the dots required to shape a character. A print head containing tiny pins strikes an inked ribbon to make letters and graphics. This **impact printing** technology allows shops, for example, to print multi-part forms such as receipts and invoices, so it's useful when self-copying paper and continuous-form labels are needed. It has two important disadvantages: noise and a relatively low resolution (from 72 to 180 dpi). They are slower than laser printers but much cheaper.

Inkjet printers generate image by spraying tiny, precise drops of ionized ink directed by magnetic plates onto the paper. The resolution ranges from 300 to 1,200 dpi, suitable for small quantities or home use.

An inkjet printer consists of a print head, ink cartridges, paper feed assembly, belt and stabilizer bar. Inkjet printers are capable of creating high-quality images and high-resolution photos with vivid colours. They can work with most types of papers.

Inkjet printers have many advantages. Compared to most printers, they are affordable, easy to use and inherently quiet. They are ready to print and do not require any warm-up time. They are also compact, generally requiring less space. With these features, they are more popular as home or business printers.

There are certain disadvantages for inkjet printers. The print head is less durable in most cases. Inkjet printer ink is expensive and can potentially dry up, causing not only wastage of ink but also blockages within the printer. Also, compared to laser printers, they are slow to work and thus are not considered suitable for high-volume printing.

Laser printers produce output at great speed and with a high resolution of l,200–2,400 dpi. They scan the image with a laser

beam and a special powder called toner is attracted to paper by an electrostatic charge and then fused on by a hot roller. They are constantly being improved. In terms of speed and image quality, laser printers are preferred by experts for various reasons, for instance, they have a wider range of scalable fonts than inkjets, can emulate different language systems, and can produce high-quality graphics.

Lasers use a **page description language** or **PDL** which describes how to print the text and draw the images on the page. The best-known languages are Adobe PostScript and HP Printer Control Language.

Thermal transfer printers are used to produce colour images by transferring a wax-based ink onto the paper. They are popular for printing bar codes, labels and medium-resolution graphics.

Imagesetters produce very high-resolution output (up to 3,540 dpi) on paper or on the actual film for making the printing plates. In addition, they are extremely fast. Imagesetters are most often used in desktop publishing (DTP) for high-quality publications. Although they produce the highest quality output, they have one important disadvantage: they are too expensive for homes or small offices.

In modern lithographic printing, images are created on a DTP computer and then output directly to the printing plates, without requiring film as an intermediate step. This technology is called **computer to plate**, or CTP, and the machine used is called a **platesetter.**

Plotters use ink and fine pens held in a carriage to draw very detailed designs on paper. They are used for construction plans, engineering drawings, computer-aided design, maps, and other technical illustrations. Nowadays, traditional plotters are being replaced with wide-format inkjets.

Finally, we have printers which can perform more than one task. They are called **multi-function** printers because they can work as a scanner, a fax and photocopier as well as a printer.

5. Complete these sentences with the words from Text A (Technical details):

1. The differences in … are noticeable: the more dots per inch, the clearer the image.

2. A print resolution of between 600 … and 2,400 … ensured that even text as small as 2 pt. was legible.

3. Passengers with an electronic ticket will need a … of ticket confirmation or a boarding pass to be admitted to secured gate areas.

4. The key advance of recent years is printing speed: the latest generation of ink-jets prints black-and-white text at 15 … … … (…).

5. With appropriate software, you can view the images on a computer, manipulated them, or send them to a … and produce excellent quality colour copies.

6. A … … is a dedicated computer that connects a printer to a network. It enables users to share printing resources.

7. A … … is a utility that organizes and arranges any documents waiting to be printed.

8. In computers, a … … is a program installed to control a particular type of printer.

6. Choose the most appropriate type of printer for these situations from the descriptions in Text A (Types of printers):

1) a home user who wants to print text documents and family photographs;

2) business people who need to print in large quantities at high quality in in office;

3) engineers who want to make detailed line drawings;

4) professional typesetters in desktop publishing (e.g. to publish catalogues and magazines;

5) a company that wants to print carbon copies of bills and receipts.

7. Find words in Text A with the following meanings:

1) designs and images used in magazines, books, etc.;
2) output quality, measured in dots per inch;
3) a particular colour within the colour spectrum;
4) an ink powder used in laser printers and copiers;
5) set of characters that can be resized (enlarged or reduced) without introducing distortion;
6) a rectangular pattern of black lines of magnetic ink printed on an object so that its details can be read by a computer system;
7) surface that carries a reproduction of the image, from which the pages are printed;
8) in-between; middle;
9) a container that holds the ink in an ink-jet printer;
10) small needles that press on the inked ribbon to make the character on paper;
11) printer technology that produces text and pictures by hammering pins against a ribbon and the paper;
12) a language that tells a printer how to print a document;
13) a peripheral which combines a printer, a fax machine and photocopying and scanning capability into one device;
14) they use a wax-based ink while producing colour images;
15) printer technology when images output directly to the printing plates, without requiring film as an intermediate step.

8. Find English equivalents of the following Russian words and word combinations in the Text A:

преобразовывать данные в форму, понятную вашему компьютеру; относительно низкое разрешение; позволить изменить порядок документов в очереди и отменить определенные задания на печать; компьютер, на котором хранятся файлы, ожидающие печати; по сравнению с большинством принтеров; программа на вашем компьютере,

называемая драйвером принтера; качество на выходе или разрешение; различаться по стоимости, скорости, качеству печати; скорость измеряется в страницах в минуту;

9. Translate word combinations and learn them by heart:

устройства вывода; технические чертежи; существенно различаться; наиболее подходящий для ваших нужд; принять во внимание; создавать высококачественную графику; техническая информация; распечатка, печатная копия; точечные матричные принтеры; квитанции и счета-фактуры; диспетчер очереди печати; печатающая головка; узел подачи бумаги; доступный по цене; для начала; высококачественные изображения, фотографии высокого разрешения с яркими цветами; термотрансферные принтеры; для домашнего использования; просты в использовании и бесшумны; струйные принтеры; постоянно совершенствоваться; для печати штрих-кодов, этикеток, графики среднего разрешения; фотонаборные устройства.

10. Answer the questions:

1. What is a printer?
2. What are the functions of a printer spooler?
3. What are dot-matrix printers and its main disadvantages?
4. Describe impact printing technology
5. How do inkjet printers generate image?
6. What are the advantages / disadvantages of inkjet printers?
7. What is a laser printer?
8. Why are laser printers preferred by experts?
9. What technology do thermal transfer printers use?
10. What is an imagesetter?
11. What technology is called computer to plate and why?
12. Where are used plotters and why?

11. Read Text B:

Text B
Storage Devices

Storage devices are used to store data and programs that are not being used by the processor. They usually consist of:

a) **storage media** in the form of a circular disk or a tape where the data is stored

b) a **disk** or **tape drive** that moves the media past a read/write head that reads the data from and writes data to the storage media.

Types of storage devices include:

– Magnetic devices
– Optical devices
– Flash memory

Magnetic Storage Devices

Magnetic storage devices store data by magnetizing particles on a disk or tape.

A **floppy disk** is so called because it consists of a flexible sheet of plastic, coated with iron oxide – a magnetisable material. A floppy disk drive spins at 360 revolutions per minute (rpm), so it's relatively slow.

However, a **hard drive** consists of a head actuator, head arm, chassis, and a disc platter; it spins at over 7,200 rpm and stores data on a stack of metal rotating disks called **platters**. This means you can store much more data and retrieve information much faster.

New disks need to be **formatted** before you can use them, unless they come preformatted from the manufacturer. When the disk is formatted, the operating system (OS) organizes the disk surface into circular **tracks** and divides each track into **sectors**. The OS creates a **directory** which will record the specific location of files. When you save a file, the OS moves the read/write head of the drive towards empty sectors, records the data and writes an entry for the directory. Later on, when you open that file, the OS looks for its entry in the directory, moves the read/write heads to the cor-

rect sector, and reads the file in the RAM area. However, formatting erases any existing files on a disk, so do not format disks on which data that you don't want to lose is stored.

The OS allows you to create one or more **partitions** on your hard drive, in effect dividing it into several logical parts. Partitions let you install more than one operating system (e.g. Windows and Linux) on your computer. You may also decide to split your hard drive because you want to store the OS and programs on one partition and your data files on another; this allows you to reinstall the OS when a problem occurs, without affecting the data partition.

The average time required for the read/write heads to move and find data is called seek time (or **access time**) and it is measured in milliseconds (ms); most hard drives have a seek time of 7 to 14 ms. Don't confuse this with **transfer rate** – the average speed required to transmit data from the disk to the CPU, measured in megabytes per second.

Optical Storage

Optical discs can store data at much higher densities than magnetic disks. They are therefore ideal for multimedia applications where images, animation and sound occupy a lot of disc space. Furthermore, optical discs are not affected by magnetic fields, meaning that they are secure and stable, and can be transported through airport metal detectors without damaging the data. However, optical drives are slower than hard drives.

CDs and DVDs

At first sight, a DVD is similar to a CD. Both discs are 120 mm in diameter and 1.2 mm thick. They also both use a **laser beam** to read data. However, they are very different in internal structure and data capacity. In a **DVD**, the tracks are very close together, thus allowing more tracks. The **pits** in which data is stored are also smaller, so there are more pits per track. As a result, a **CD** can hold 650–700MB, whereas a basic DVD can hold 4.7 GB. In addition, a DVD can be **double-sided** and **dual layer**, with a capacity of 17 GB.

CDs come in three different formats:

– **CD-ROMs (read-only memory)** are read-only units, meaning you cannot change the data stored on them (for example, a dictionary or a game).

– **CD-R (recordable)** discs are write-once devices which let you duplicate music CDs and other data CDs.

– **CD-RW (rewritable)** discs enable you to write onto them many times, just like a hard disk.

– DVDs also come in several formats:

– **DVD-ROMs** are used in DVD computer drives. They allow for data archiving as well as interactive content (for example, an encyclopedia or a movie).

– **DVD-R** or **DVD+R** can only be recorded on once.

– **DVD-RW or DVD+RW** discs can be erased and reused many times. They are used to back up data files and to record audio and video.

The DVD drive used in computers is also called a **DVD burner** because it records information by burning via a laser to a blank DVD disc.

HD-DVD and Blu-ray discs

These two competing formats are expected to replace current DVD as the standard for watching movies at home. On one side are Toshiba, Microsoft and the DVD Forum, who support the **High Definition-DVD (HD-DVD**). Sony, Panasonic, Samsung, JVC and many movie studios are behind the Blu-ray format.

A **Blu-ray** disc has a capacity of 25 GB (single layer), 50 GB (dual layer) and 100 GB (four layer). Unlike DVDs, which use a red laser to read and write data, Blu-ray uses a blue-violet laser, hence its name. Blu-ray discs can record and play back high-definition television and digital audio, as well as computer data.

12. **Complete these sentences with the following words:** ***capacity, sequential-access, storage, archiving, external hard drives, hold, secondary, internal hard drive, rare.***

1. There are basically three types of magnetic … device available to the computer user – hard drives, diskettes and tapes.

2. The … of a 3.5” floppy disk is only l.44 MB.

3. Floppy drives are becoming increasingly … .

4. Most PCs have one …, usually called C: drive. It is used to store the operating system, the programs and the user's files in a convenient way.

5. Hard drives can … hundreds of times more data than floppy disks.

6. … are connected to the USB or FireWire port of the computer. They can be as small as a wallet, but can have as much capacity as internal drives.

7. A portable hard drive is a good choice for backup or … storage.

8. A tape drive reads and writes data on tapes. It is … – i.e. to get to a particular point on the tape, it must go through all the preceding points.

9. Magnetic tapes are used for … information that you no longer need to use regularly.

13. Find the words and word combinations (1–20) in the text above. Can you guess the meaning from context? Give Russian equivalents.

1. Floppy disk	11. Transfer rate
2. To spin at 360 revolutions per minute (rpm)	12. Measured in…
3. Rotating disks called platters	13. Ideal for multimedia applications
4. To retrieve information much faster	14. To occupy a lot of disc space
5. To organize the disk surface into circular tracks	15. To be not affected by magnetic fields
6. Formatting erases any	16. Without damaging the data

existing files on a disk 7. Partitions on your hard drive 8. To reinstall the OS when a problem occurs, without affecting the data partition 9. Access time 10. Average time required	17. To use a laser beam to read data 18. To be very different in internal structure and data capacity 19. Double-sided and dual layer 20. DVD burner

ЗАКЛЮЧЕНИЕ

Учебное пособие разработано для обучения английскому языку в неязыковых вузах и предназначено для аудиторной и самостоятельной работы обучающихся факультета прикладной информатики по направлениям подготовки: «Информационные системы и технологии», «Прикладная информатика», «Бизнес-информатика».

Издание построено по тематическому принципу, состоит из пяти разделов. Каждый раздел содержит грамматический материал, упражнения к нему, задания на закрепление специальной лексики и несколько текстов, объединенных общей тематикой. Упражнения рассчитаны на комплексное развитие и закрепление навыков чтения, перевода, а также устной и письменной речи.

СПИСОК ЛИТЕРАТУРЫ

1. Being Fluent with Information Technology (1999). Chapter: 1 Why Know About Information Technology? // nap.edu [Электронный ресурс]. – Режим доступа: https://www.nap.edu/read/6482/chapter/3.

2. N. Coe, M. Harrison, K. Paterson Oxford practice Grammar. Basic: Oxford University Press, 2009. – 349 p.

3. F. Davis, W. Rimmer. Active GRAMMAR LEVEL 1: Cambridge University Press, 2011. – 200 p.

4. Definite articles and indefinite articles – determiners in English [Электронный ресурс]. – Режим доступа: http://www.englishlessonsbrighton.co.uk/definite-indefinite-articles-determiners/.

5. DEFINITION Information Technology (IT) [Электронный ресурс]. – Режим доступа: https://searchdatacenter.techtarget.com/definition/IT.

6. English Grammar Tenses for Talking about the Future [Электронный ресурс]. – Режим доступа: https://www.speakconfidentenglish.com/future-tense-english/.

7. S. R. Esteras Infotech English for computer users. Student's book: Cambridge University Press, 2008. – 172 p.

8. Esteras S.R., Fabre E.M. Professional English in use ICT: Cambridge University Press, 2007. – 115 p.

9. V. Evans, J. Dooley, S. Wright Information Technology: Express Publishing, 2014. – 122 p.

10. Exercise-Future Mix [Электронный ресурс]. – Режим доступа: https://www.ego4u.com/en/cram-up/grammar/future-mix/exercises.

11. Flatbed Scanner [Электронный ресурс]. – Режим доступа: https://www.techopedia.com/definition/2197/flatbed-scanner.

12. Future tenses exercise: mixed future tenses [Электронный ресурс]. – Режим доступа: http://www.englishlessonsbrighton.co.uk/future-tenses-exercise.

13. Future tenses: все будущие времена в английском языке [Электронный ресурс]. – Режим доступа: https://puzzle-english.com/directory/futuretenses.

14. E. H. Glendinning, J. McEwan Oxford English for Information Technology Teacher's Book: Oxford University Press, 2007. – 138 p.

15. R. Murphy English Grammar in Use: Cambridge University Press, 2004. – 393 p.

16. Talking about the future [Электронный ресурс]. – Режим доступа: https://learnenglish.britishcouncil.org/english-grammar/talking-about-future.

17. The definite article – the [Электронный ресурс]. – Режим доступа: https://www.englisch-hilfen.de/en/grammar/artikel.htm.

18. The Four Functions of a Computer [Электронный ресурс]. – Режим доступа: https://turbofuture.com/computers/The-Four-Functions-Of-A-Computer.

19. M. Vince First Certificate Language Practice. English Grammar and Vocabulary: Macmillan, 2003. – 351 p.

20. Активный и пассивный залог в английском языке [Электронный ресурс]. – Режим доступа: http://engblog.ru/active-and-passive-voice.

21. Артикли в английском языке [Электронный ресурс]. – Режим доступа: https://englex.ru/using-articles-in-english/.

22. Модальные глаголы в английском языке [Электронный ресурс]. – Режим доступа: http://engblog.ru/modal-verbs.

23. Определенный артикль the в английском языке [Электронный ресурс]. – Режим доступа: http://engblog.ru/definite-article.

ОГЛАВЛЕНИЕ

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