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ADDITIONAL EXERCISES FOR SELF-STUDY TRAINING

(учебно-методическое пособие)

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Введение

Настоящее учебно-методическое пособие предназначено для студентов очного и заочного отделений ТУСУР, обучающихся по учебному пособию 'English for Engineering Faculties' (авторы Кадулина Л.Б., Лычковская Л.Е., Менгардт Е.Р., Тараканова О.И.). Пособие состоит из двух разделов. Первый раздел содержит комплекс лексико-грамматических упражнений к курсу Oral Speech Course и способствует формированию лингвистических и общекультурных компетенций в соответствии с требованиями ФГОС.

Комплекс лексико-грамматических упражнений во втором разделе рекомендован к курсу Reading Course и предназначен для формирования и развития лингвистических и профессиональных компетенций будущих специалистов.

ORAL SPEECH COURSE

UNIT 1

Articles a (an) / the

A (an) = one I see a man in the street.	The = that The man I see is your brother.
<u>Jobs:</u> a doctor, an artist <u>Nouns, denoting such numbers as:</u> a hundred, a thousand, a million, a billion	<u>Rivers:</u> the Thames, the Ob <u>Mountains:</u> the Alps (but: Everest). <u>States:</u> the Russian Federation, the USA, the United Kingdom <u>Ordinal numbers:</u> the first, the twenty-fifth <u>Superlative degrees:</u> the best, the most important <u>Expressions:</u> in / to the east, at the theatre, the same, in the city / country / world, <i>etc.</i> , to play the guitar, to the left / right
No article is used <u>Cities:</u> Tomsk, London, Moscow <u>Countries:</u> Russia, Germany (but: the Ukraine) <u>Noun + cardinal number:</u> flat five	

1.1. Complete the following texts with *a, an, the* or *–*.

- We live in ... St. Petersburg. ... St. Petersburg is ... very large city. It is one of ... largest cities in Russia. A lot of tourists from different countries come ... to St. Petersburg. They want to see one of ... most beautiful cities in ... world.
- My name is Charlie. I come from ... pretty big family. I have ... two brothers and ... sister. I am ... oldest and my sister is ... youngest; she plays ... violin really well and wants to be ... professional musician. She has other hobbies, too, and she often goes swimming with her friends if ... weather is nice.
- My friend's flat is very comfortable. There are three rooms in ... flat: ... living room, ... study and ... bedroom. ... living room is ... largest of all. ... walls in ... living room are blue. There are some pictures on ... walls. There is ... table in ... middle of ... room with some chairs around it. To ... left of ... door there is ... sofa. Near ... sofa there are two large armchairs. They are very comfortable. There is ... piano in my friend's living room. The piano is to ... right of ... door. ... bedroom and ... study are small. ... furniture in ... flat is brown.

4. There is ... map of ... world on ... wall of ... classroom. There are many ... seas and ... lakes on ... map. This is ... Mediterranean Sea and that is ... Red Sea. These are ... Himalayas. They are ... highest mountains in ... world.

Plurals

<p>-es [ɪz]</p> <p>an address + -es addresses</p> <p>a potato – potatoes</p> <p>Exceptions: a piano – pianos, a solo – solos, a photo – photos, radio – radios, studio – studios</p>
<p>a family + -es families</p>
<p>-f, -fe: a wife – wives, a scarf – scarves (but: a chief – chiefs, a roof – roofs)</p>

Irregular Plurals

<p>a man – men, a woman – women</p> <p>a tooth – teeth, a goose – geese, a foot – feet</p> <p>a mouse – mice, a louse – lice</p>	
<p>an ox – oxen, a child – children</p>	
<p>a person – people</p>	
<p>an aircraft – aircraft, a sheep – sheep, a swine – swine, a fish – fish, a deer – deer</p>	
<p>an analysis – analyses, a basis – bases, a crisis – crises, a thesis – theses, a criterion – criteria, a datum – data, a phenomenon – phenomena</p>	
<p>Only singulars:</p> <p>money, hair, business, fruit, progress, advice, information, news, knowledge, furniture, luggage, peace, love</p>	<p>Only plurals:</p> <p>trousers, jeans, shorts, glasses, scissors, people, police, clothes, goods, riches, manners, thanks</p>

1.2. Choose the correct variant.

1. Maths *is / are* difficult to me.
2. These jeans *is / are* very fashionable.
3. The gentleman *is / are* very polite.
4. Women *is / are* not allowed to visit this place.
5. The money *is / are* not enough to buy this car.
6. His feet *is / are* hurt.

7. My teeth *is / are* white.
8. There *is / are* some men in the office.
9. These fish *is / are* big.
10. The news *is / are* very interesting.

1.3. Choose the correct variant.

1. Peter and Sam like fried ... very much.
a) potatos b) potatoes c) potatoes
2. I had three ..., but now I'm single.
a) wifes b) wives c) wifs
3. There are a lot of ... in the house.
a) mices b) mouses c) mice
4. These shoes are too large for my
a) feet b) foot c) foots
5. There are a lot of ... in our woods.
a) wolfs b) wolves c) wolfes
6. Our ... are very competent.
a) chiefs b) chieves c) chievs
7. She doesn't like
a) partys b) parties c) partes
8. Are these workers ... ?
a) Englishmen b) Englishmans c) Englishmens
9. These ... are my sons.
a) childs b) children c) childrens
10. They are good
a) secretarys b) secretaries c) secretares

1.4. Choose the correct variant.

1. Men
a) uncountable b) countable - singular c) countable - plural
2. Crises
a) uncountable b) countable - singular c) countable - plural
3. News
a) uncountable b) countable - singular c) countable - plural
4. Phenomena
a) uncountable b) countable - singular c) countable - plural
5. Money
a) uncountable b) countable - singular c) countable – plural

Possessive Case

<p>Diana's brother (= the brother of Diana) but: Diana and Richard's brother (= brother of Diana and Richard) She is Dan's girlfriend = She is his girlfriend. [s] Kate's boyfriend [z] Ronald's car; Anna's flat [ɪz] Dess's computer</p>
<p>his son's name = the name of his son his sons' names = the names of his sons But: his children's names = the names of his children</p>

1.5. Change the following phrases using right possessive forms of the nouns in brackets, as in the model.

Model: the house of Mr. Smith - Mr. Smith's house

The skateboard of that man; the questions of my son; the wife of my brother; the table of our teacher; the poems of Pushkin; the new club of the workers; the car of my parents; the life of this woman; the works of Rembrandt; the bags of those women

The verb *to be*

Present Simple forms

Affirmative forms	
<p>He She ↙ ↘ is ↑ It</p>	<p>I → am We You ↘ ↙ are ↑ They</p>
Interrogative forms	
<p>Am I? ↙ ↓ ↘ Is he she it?</p>	<p>Are ↙ ↓ ↘ we you they?</p>
Negative forms	
<p>I → am not He She ↙ ↘ is not ↑ It</p>	<p>We You ↘ ↙ are not ↑ They</p>

Past Simple and Future Simple forms of the verb *to be*

Past Simple	Future Simple
Short negative forms: wasn't, weren't	Short negative forms: shan't be, won't be

1.6. Complete the following sentences with the correct form of the verb *to be*.

- Where ... Andrew now ? – I don't know. Yesterday he ... in France. Tomorrow he ... in England.
a) is, is, was b) is, was, will be c) is, will be, was
- I ... Lena and this ... my brother Nick. We ... from St Petersburg.
a) am, was, are b) am, is, were c) am, is, are
- My father ... a programmer. He ... interested in politics. His favourite sports ... football and swimming.
a) is, isn't, are b) is, wasn't, are c) is, isn't, is
- ... you busy? – No, I ... not. Mike ... busy. He ... the busiest person I've ever met.
a) Is, am, was, is b) Are, am, is, is c) Are, am, is, was
- How ... you? – I ... not very well today. – I ... sorry to hear that.
a) is, am, am b) is, am, was c) are, am, am
- You ... right. That's a lot of money! Coffee ... really very expensive this week.
a) are, is b) is, are c) are, will be
- My sister ... a schoolgirl last year, and now she ... a student. She ... an economist in five year's time.
a) is, was, will be b) was, is, will be c) is, will be, was
- My sister ... ill last week. She ... not ill now.
a) is, was b) was, is c) were, is
- Where ... you yesterday? – I ... at the cinema.
a) were, am b) was, am c) were, was
- When I come home in 2 hours, I hope all my family ... at home.
a) will be b) is c) are

1.7. Complete the following tests with the correct form of the verb *to be*.

1. Hello! My name ... Boris. I ... seventeen. My friend's name ... Igor. He ... seventeen, too. We ... from Russia. Last summer we ... at the seaside. The weather ... sunny. We had a good time. I hope next summer it ... sunny and warm, too. Some day in future I ... lucky to visit London and my holidays ... great.
2. Ronald Wood ... a managing director of the First Bank of Kingsville on Main Street. He ... always on a business trip. Yesterday he ... in Geneva. Tomorrow he ... in London. Last week he ... in Chicago. Next week he ... in New Orleans. At the moment he ... in Amsterdam. In two hours he ... in the Hague. Three days ago he ... in Paris. At the end of his trip he ... usually very tired but happy. He ... with his family now. His sons ... so much excited. They have got new toys from their father. Everybody in the family ... very glad to see him at home again.

The verb *to have (got)*

Present Simple forms of the verb *to have (got)*

I	We	He	She
have got		has got	
You	They	It	
<p>I have got a brother. He has got a car.</p> <p>Short forms: I've got (= I have got) She's got (= She has got)</p>			
<p>Have you got a brother? – Yes, I have. / No, I haven't. (= have not) Has he got a car? – Yes, he has. / No, he hasn't. (= has not)</p> <p style="text-align: center;">Have you got <i>any</i> children?</p> <p style="text-align: center;">I haven't got a brother. He hasn't got a car. We haven't got <i>any</i> children.</p>			

1.8. Complete the following dialogue with *have got* or *has got*.

- Good morning. ... you ... red skirts?
- Sorry we ... any red skirts, but we ... got some blue ones.
- And ... you ... blue jeans?
- Yeah. We ... different styles of blue jeans. Look at these ones. Do you like them?
- Oh. They're very nice! Can I try them on?
- Yes, of course. The fitting room is over there.
- Thanks.

1.9. Complete the following text with *have got* or *has got*.

My name's Mary. I live in London and I two brothers, Sam and Tom, and a sister, Jenny. We a big house and a garden. Tony and Lenny like computer games. They ten! Jenny and I like music. She lots of CDs and I a guitar! I play in a band with my friends. We two guitarists, a drummer and a singer.

Past Simple and Future Simple forms of the verb *to have*

Past Simple		Future Simple		
I	We	I -----> shall have <----- We		
You	had You	You	You	
He		} will have {		
She	They			They
It				
		Short form – 'll		
		Short negative forms: shan't have, won't have		

1.10. Complete the following sentences with the correct form of the verb *to have* (*got*).

- I ... a good idea!
- The new supermarket ... got everything.
- Last year we ... a very noisy neighbour.
- You ... got eight correct answers.
- They ... an expensive sport car in a year.
- We ... got two sons, but we ... got a daughter.
- We ... terrible weather last summer.
- ... you got 10 dollars? – Sorry, I ... got any money on me.
- A flag of Israel ... got the six-pointed star on it.
- ... they got many friends in Britain? – Only two.
- We ... an old *Mercedes*, but it broke down.
- The house ... got a lot of furniture.
- James ... got a lot of friends in Europe, but he ... got any in the USA.
- We ... a lot of problems but now we haven't.
- I think they are quite rich. They ... got a huge house in London, and one in Paris, too.
- David and Victoria ... lunch in my restaurant last week.
- I'm sorry. I can't help you. I ... got no money.
- ... she got two brothers or just one?
- I hope we ... a wonderful weekend in the country next week.
- We ... a really good time at Dan's birthday party last Saturday.

UNIT 2

Present Simple Tense

I always **do** my homework in the evening.
He always **does** his homework in the evening.

I **do not (don't) do** my homework in the morning.
We **do not (don't) have** lessons on Sundays.
He **does not (doesn't) do** his homework in the morning.
She **does not (doesn't) work** in a shop.

Do you have lunch at the university cafeteria?
– Yes, I **do**. / No, I **don't**.

Does he work in an office?
– Yes, he **does**. / No, he **doesn't**.

What time do you go to bed? – I **go** to bed late.
Where does he live? – He **lives** in the hostel.

2.1. Complete the following sentences with the correct form of the verb.

1. Steve never ... (talk) about his success.
2. I always ... (answer) the teachers' questions.
3. She sometimes ... (come) late for the first lecture.
4. At the weekend David ... (have) a lot of free time.
5. Kelly often ... (phone) to her parents.
6. My friends never (go) for a walk at night.
7. She ... (wake up) at six o'clock every morning.
8. Ann and Kate ... (like) playing tennis.
9. I ... (collect) stamps.
10. Bob ... (want) to be an engineer.

2.2. Make the following sentences negative.

Model: I **have** some free time on Saturday (weekdays).

I **don't have** any free time on weekdays.

1. Fred **has** a shower every morning (evening).
2. On Sundays my parents **go** to the countryside (city park).
3. Kelly **leaves** home at half past eight every day (at half past nine).
4. We **do** our home work on Sundays (on Saturdays).
5. She **does** morning exercises every morning (at weekends).
6. Bob **gets up** early on weekdays (on Sunday).
7. Every Friday they **play** football in the university gym (basketball).
8. Mary **visits** her parents on summer holidays (on winter holidays).
9. Jane **knows** how to ski (to skate).
10. Our volleyball team always **wins** the competitions (football team).

2.3. Complete the following sentences with *do* or *does*.

1. ... your mother like cooking?
2. ... Mike and Kate go to Spain in summer?
3. ... it snow in winter in Great Britain?
4. ... Joe help his parents in the office?
5. ... you want to be a businessman?
6. ... she often visit her parents?
7. ... Cliff work for the computer company?
8. ... they ever go to the cinema?
9. ... he attend all the lectures?
10. ... Bob want to be a shop-assistant?

2.4. Put the questions to the underlined words.

Model: My group-mate knows physics very well. (What subject...?)

What subject does my friend know very well?

1. The students have laboratory works every week. (How often...?)
2. Ann likes classical music. (What music...?)
3. They get to the university by bus. (How...?)
4. Henry leaves home for the university at 8.30. (What time...?)
5. The students of my group have lunch at the university cafeteria. (Where...?)
6. Lucy and Helen work a lot. (Who...?)
7. Our group has three lectures on Friday. (How many...?)
8. On Monday my lessons finish at three p.m. (When...?)
9. I meet my group-mates every morning in the hall. (Who...?)
10. Angela comes from Italy. (Where...?)

2.5. Answer the following questions.

1. Where do you come from?
2. Where do your parents live?
3. Do you play any sports?
4. Does your mother work at weekends?
5. What time do your lessons start?
6. Where do you have lunch?
7. What time do you wake up?
8. When do you do your homework?
9. Do you have laboratory works every week?
10. Which university subject do you like?
11. What do you do at weekends?
12. How often do you go to the gym?
13. Does your best friend have a car?
14. When do you have session exams?
15. Why do you want to be an engineer?

Present Progressive Tense

My friend **is looking** for a well-paid job.

I **am working** on my course project *at the moment*.

We **are preparing** for the test in computer science *now*.

Is your friend **looking** for a well-paid job?

– **Yes, he is.** / **No, he isn't.**

Are you **working** on your course project *at the moment*?

– **Yes, I am.** / **No, I'm not.**

Are you **preparing** for the test on computer science *now*?

– **Yes, we are.** / **No, we aren't.**

My friend **is not (isn't) looking** for a well-paid job.

I **am not ('m not) working** on my course project *at the moment*.

We **are not (aren't) preparing** for the test on computer science *now*.

Where are you **living** *now*?

– I **am living** with my parents in the country.

2.6. Complete the following sentences with the correct form of the verb *to be*.

1. He ... working hard at his French.
2. We ... having lectures at the moment.
3. I ... waiting for my mother near her office.
4. They ... visiting the university museum now.
5. David ... having an important meeting on Wednesday.
6. My group-mates ... preparing for the test in Computer Science.
7. She ... planning to get the second education.
8. Jack ... doing his best to pass session exams with excellent marks.
9. This term the students ... taking part in our project.
10. I ... working hard to get good results.

2.7. Complete the following sentences with the correct form of the verb.

1. Henry ... (not sleep) now. He ... (clean) his room.
2. My friends ... (have) lunch at the university cafeteria.
3. Steve ... (not work) at the office today. He ... (prepare) for the report at home.
4. At the moment I ... (try) to find a well-paid job.
5. My parents ... (come back) from Italy next Saturday.
6. His friends ... (not play) tennis in the sport club. They ... (do) exercises at the university gym.
7. She ... (think) about the results of her test in Maths.
8. We ... (not listen) to the news. We ... (watch) an interesting film.
9. Is Chris at home? - No, he isn't. He ... (relax) in the countryside.
10. They ... (not speak) English. They ... (speak) French.

2.8. Put the questions to the underlined words.

Model: Tom is living in the hostel at the moment. (Where ...?)
Where is Tom living at the moment?

1. He is having a wonderful time in Egypt. (Where ...?)
2. I am planning to finish my project by the end of the week? (What ...?)
3. We are taking books from the library. (Where ...?)
4. Alex is wearing a very smart suit today. (What ...?)
5. She is trying to find a good job now. (Who ...?)
6. They are having two English lessons this week. (When ...?)
7. Ann is talking on the phone with her mother. (Who ...?)
8. My friends are having three exams this term. (How many exams ...?)
9. Right now we are writing a difficult test. (What ...?)
10. Those people are speaking English. – (What language ...?)

2.9. Answer the following questions.

1. Are you preparing for the test now?
2. Is your mother working at the moment?
3. What is your best friend doing?
4. Are your group-mates having English now?
5. What are you doing next weekend?
6. What are you doing at the moment?
7. Is your father reading a newspaper now?
8. Is anybody listening to you now?
9. Are your parents planning to spend a holiday in Thailand?
10. What are you wearing at the moment?

Present Simple Tense and Present Progressive Tense

Present Simple Tense	Present Progressive Tense
I <i>always</i> have lunch with my class-mates at 12.30 in the afternoon.	I am having lunch with his class-mates <i>now</i> .
We do not (don't) <i>usually</i> do our homework <i>at weekends</i> .	We are not (aren't) doing our homework <i>today</i> because it is Saturday.
Do they go to the gym <i>every day</i> ?	Are they going to the gym <i>at the moment</i> ?
– Yes , they do . – No , they don't .	– Yes , they are . – No , they aren't .
Where do you <i>usually</i> go after lessons?	Where are you going ?
– I <i>usually</i> go to the library.	– I am going to the library.

Permanent action (state)	Temporary action (state)
He works as a university teacher.	He is working in a bank <i>at the moment</i> .
She doesn't live in London. She lives in Milan.	She is not (isn't) living in London <i>now</i> . She is living in Milan.
Does she have many lessons <i>every week</i> ? – Yes , she does . – No , she doesn't .	Is she having many lessons <i>this week</i> ? – Yes , she is . – No , she isn't .
What does she like cooking? – She likes cooking meat dishes.	What is she cooking ? – She is cooking something delicious.
time expressions	time expressions
always, never, usually, sometimes, often every day (week, month, year) once a week (a month, a year) twice a week (a month, a year) three times (a month, a year)	now, right now, at the moment at present, today tonight this week (month, year)

2.10. Choose the correct variant.

1. Ann is in the kitchen. She ... a cake.
a) is making b) makes
2. It ... in this part of the world.
a) is often raining b) often rains
3. Peter is an engineer. He ... for Sony Company.
a) works b) is working
4. Why ... to the library on Fridays, but not on Saturdays?
a) do you go b) are you going
5. Ann ... session exams next week.
a) has b) is having
6. I ... listening to rock music.
a) don't like b) am not liking
7. Mary ... her homework. She is in the bathroom.
a) isn't doing b) doesn't do
8. Where is Kate? I ... her.
a) look for b) am looking for
9. Tom is a photographer. He ... beautiful photographs.
a) is taking b) takes
10. I don't know Spanish, but I ... it now.
a) am learning b) learn

11. Most people ... travelling by plane.
a) enjoy b) are enjoying
12. Mary usually ... the shopping on Friday evenings.
a) is doing b) does
13. Soccer ... a popular sport in the United States now.
a) becomes b) is becoming
14. I can't come right now because I ... breakfast.
a) am having b) have
15. I never ... on weekdays.
a) go out b) are going out

2.11. Complete the following sentences with the verbs *am / is / are / do / don't / does / doesn't*.

1. Excuse me. ... you speak English?
2. 'Have a cigarette.' - No, thank you, I ... smoke.
3. Why ... you looking at me?
4. Where ... you come from? - From Canada.
5. I can't talk to you at the moment. I ... working.
6. What ... she do? – She is a dentist.
7. I ... want to go out. It ... raining.
8. George is a good tennis player but he ... play very often.
9. How much ... it cost to send a letter to Canada?
10. It is a cheap hotel. It ... cost too much to stay there.

2.12. Complete the following sentences with the correct form of the verb.

1. I ... (have) solid breakfast every morning.
2. We usually ... (do) the shopping at weekends.
3. He often ... (go) to the gym.
4. I ... (have) an important meeting next Tuesday.
5. Look! Joe ... (talk) to the dean of our faculty.
6. What ... you ... (do) tonight?
7. What book ... you ... (read) now?
8. Keep quiet! My room-mates ... (sleep).
9. Where ... you usually ... (go) on holidays?
10. It ... (rain), take your umbrella.
11. What ... this word ... (mean)?
12. He is a person who ... (like) playing computer games.
13. ... you ... (listen) to me?
14. What ... Fred ... (do) at the weekend?
15. The students of our university ... (take part) at the conferences every year.
16. John ... (hate) having lunch in a restaurant.
17. I am sorry, I can't talk to you, I ... (prepare) for tomorrow meeting.
18. Don't waste time. We ... (wait) for you.
19. Who ... you ... (think) about?
20. When the weather is rainy we never ... (go out).

Future Simple Tense

I'll call you later.

Will you work?

– Yes, I will. / No, I won't.

You will not (won't) get to work in time.

Where will you work? – I will work at home.

Note: I, We *shall* work (in written and official speech)

2.13. Complete the following sentences with the correct form of the verb.

1. I ... (be) twenty-one next week.
2. I think you ... (find) a good job after the graduation from the university.
3. ... you ... (give) me your telephone for a moment?
4. Who ... (go) to the cinema with me next weekend?
5. I ... (start) a new project at the end of the summer.
6. When ... you ... (know) the exam results?
7. I expect your friend ... (join) us soon.
8. ... you ... (show) me your paper before the conference?
9. How ... you ... go to the university tomorrow: on foot or by bus?
10. She ... (have) a Christmas Party soon.

Conditionals I

If you **study** hard, you **will pass** your exams.

If he **runs** fast, he **will win** the race.

If you **don't study** hard, you **will not (won't) pass** your exams.

If he **doesn't run** fast, he **will not (won't) win** the race.

Conditionals I: *if* and *when*

If I **have free time**, I'll go to Paris.

When I **have free time**, I'll go to Paris.

If he **doesn't cook dinner**, we will order a pizza.

We will order a pizza **if** he **doesn't cook dinner**.

2.14. Choose the correct variant.

1. When I ... the exam results, I will phone you.
a) will know b) know
2. If you miss the lecture, you ... problems with the exams.
a) have b) will have
3. When I come back, I ... you some important questions.
a) will ask b) ask
4. If my parents ... a new car, we will travel a lot.
a) buy b) will buy
5. If you ... my advice, give me to know.
a) will want b) want
6. Watch the football match on TV at 11 p.m. if you ... at home tonight.
a) will stay b) stay
7. Mrs. Clay will go shopping today if she ... her work earlier than usual.
a) will finish b) finishes
8. We ... time for tea if he comes in time.
a) will have b) have
9. If you ... less fast food, you will be much healthier.
a) eat b) will eat
10. Your parents will worry, if you ... session exams.
a) don't pass b) won't pass

2.15. Complete the following sentences with the correct form of the verb.

1. If you ... (not study), you ... (fail) the test.
2. If you ... (not know) an English word, look it up in a dictionary.
3. I ... (help) you if you ... (ask) me.
4. ... you ... (give) me a call if you ... (have) time this evening?
5. You ... (get) a lot of knowledge if you ... (attend) all the lectures.
6. If you ... (come) in time, we ... (not be) late for the concert.
7. If you ... (not do) your homework, I ... (not let) you watch TV.
8. If you ... (tell) me about your problems, I ... probably ... (help) you to solve some of them.
9. If Caroline ... (arrive) late for the meeting, her boss ... (be) angry.
10. ... Sarah ... (be) upset if we ... (not go) to her party?
11. If I ... (lose) my money, I ... (ask) my parents to lend me some.
12. What ... (happen) if you ... (miss) this lecture?
13. If Peter ... (do) lots of exercise, he ... (be) fit and healthy.
14. If Dennis ... (not write) soon, I ... (phone) him.
15. What ... you ... (do) if you ... (not pass) an exam?

Past Simple Tense

Two years ago I **finished** school and **entered** the university.
Yesterday she **went** shopping and **bought** some souvenirs for her family.

He **did not (didn't)** play football *yesterday*.
They **did not (didn't)** have lunch together *last week*.
I **did not (didn't)** live in Italy *a year ago*.

Did you **go** shopping *yesterday*?
– Yes, I **did**. / No, I **didn't**.

Did he **listen to** jazz *yesterday*?
– Yes, he **did**. / No, he **didn't**.

What time **did** you **come** home *yesterday*?
– I **came** home *at about 10 in the evening*.

2.16. Complete the following sentences with the correct form of the verb.

1. I ... (take) some interesting books from the library yesterday
2. I ... (receive) an e-mail from Kelly yesterday evening.
3. I was very tired yesterday evening, so I ... (go) to bed early.
4. Sue was hungry in the morning, so she ... (eat) some sandwiches for breakfast.
5. We ... (arrive) at Kate's house but she wasn't at home.
6. The lunch wasn't very expensive and I ... (like) it a lot.
7. I ... (have) a lot of free time yesterday so I ... (meet) with my friends.
8. I was very busy yesterday, so I ... (phone) to you so late.
9. Kate ... (make) a cake yesterday and ... (invite) all her group-mates for dinner.
10. Yesterday my father ... (find) a new job.
11. He ... (come) late yesterday and he ... (go) to bed immediately.
12. She ... (graduated) from Oxford and ... (become) a business woman.
13. I usually go to the university by bus but yesterday I ... (walk).
14. She ... (give) me her address and phone number.
15. He ... (buy) a new computer last month and it ... (cost) too much.
16. I ... (send) an article to the international journal.
17. I ... (start) a new project last week and it takes lots of my time.
18. This morning we ... (drink) some coffee with milk for breakfast.
19. When I was at Helen's party, I ... (see) Jeremy and Ann.
20. Yesterday evening ... (do) my homework, ... (have) a shower and ... (go) to bed.

2.17. Make the following sentences negative, as in the model.

Model: Our teacher **answered** all of our questions. (Our dean)
Our dean **didn't answer** all of our questions.

1. I **asked** e-mails from my colleagues. (phone numbers)

2. I **visited** my grandparents last winter. (parents)
3. Kelly **went** to bed early yesterday evening. (late)
4. Andrew **bought** some interesting books. (magazines)
5. We **went** to the USA last summer. (Italy)
6. They **met** their group-mates at the party. (class-mates)
7. Klaus **graduated from** Oxford University. (Cambridge University)
8. My friends **learnt** English at school. (German)
9. I **knew** a lot about English traditions. (Russian traditions)
10. Chris **finished** his course project. (diploma project)

2.18. Put the questions to the underlined words.

Model: My friend sent me an e-mail yesterday. (When ... ?)

When did your friend send you an e-mail?

1. I finished school two years ago. (When ... ?)
2. Sarah came home at 10 p.m. (What time ... ?)
3. Tom bought two pizzas for lunch. (How many pizzas ... ?)
4. Sally had a wonderful weekend in Rome. (Where ... ?)
5. Terry travelled to Egypt with his girlfriend. (Who ... ?)
6. They started the course of English a month ago. (What ... ?)
7. Greg told me about his plans. (Who ... ?)
8. I went to the university by taxi yesterday. (How ... ?)
9. You saw Mrs. White at the exhibition. (Where ... ?)
10. She came late because she didn't get up in time. (Why ... ?)

2.19. Answer the following questions.

1. When did you enter the university?
2. What time did you get up today?
3. Did you study English at school?
4. Where did you go last summer?
5. How many lessons did you have yesterday?
6. Did you visit your parents last weekend?
7. How did you get to the university yesterday?
8. Why did you enter the university?
9. Who did you go to the cinema with?
10. Did you have breakfast today?

Present Perfect Tense

I **have** *already* **done** my homework.

I **have not (haven't)** **gone** shopping *yet*.

Have you **washed** the dishes *yet*?

– **Yes, I have.** / **No, I haven't.**

She **has written** an article for the conference.

He **has watched** a new film.

I **have known** my friends *since 2001*.

I **have read** "Gone with the Wind" *three times*.

2.20. Complete the following sentences with the correct form of the verb.

1. Barbara ... already ... (prepare) for the seminar.
2. I ... (do) all the tasks so I am ready for the test.
3. Nobody ... (see) Henry since yesterday.
4. I ... (finish) my report but I ... (not send) it to the professor.
5. He feels excited because he ... (pass) all his exams.
6. We ... (make) a lot of delicious dishes for the party.
7. Carol ... (read) three books this month.
8. Janet ... (not call) me back and I feel worried.
9. Lilly ... (be) to Paris twice.
10. I ... (not leave) my native town yet.
11. They feel proud because they ... (take part) in the international conference.
12. ... you ... (meet) Alice today?
13. ... he ... (tell) his friends about the meeting?
14. We ... just ... (return) from Moscow.
15. Our teacher ... (ask) us a lot of questions during the lessons.
16. Jeremy ... (not know) about his failure yet.
17. I ... just ... (e-mail) to my colleagues and ... (inform) them about the changes in timetable.
18. They ... (tell) the boss about their future plans.
19. Bill is not in the town. He ... (not come) back from London yet.
20. What ... you ... (do) with your hair?

Present Perfect and Past Simple Tenses

He **has just passed** his Maths exam.

He **passed** his Maths exam *a week ago*.

I **have not (haven't) read** the fashion magazine *yet*.

I **did not (didn't) read** the fashion magazine *yesterday morning*.

Have you ever been to Italy?

– **Yes, I have.**

– **No, I haven't.**

When **did** you **go** to Italy? – I **went** there *three years ago*.

Did you **like** living there?

– **Yes, I did.**

– **No, I didn't.**

2.21. Choose the correct variant.

- We ... around Europe last year.
 - travelled
 - have travelled
- I ... Pete today.
 - didn't see
 - haven't seen
- He ... home an hour ago.
 - has come
 - came
- He ... to Professor White.
 - never talked
 - has never talked
- Where ... your holidays last summer?
 - have you spent
 - did you spend
- They ... about this man.
 - have never heard
 - never heard
- ... you ... your session exams yet?
 - Have passed
 - Did pass
- James ... three articles this year.
 - published
 - has published
- When I was younger, I ... ice-cream.
 - haven't liked
 - didn't like
- We ... all his problems.
 - solved
 - have solved

2.22. Complete the following sentences with the correct form of the verb.

- I ... just ... (get) a letter from my parents.
- When ... you ... (meet) Alex for the first time?
- ... you ever ... (be) abroad?
- When I was younger I ... (not know) how to cook.
- I ... (have) a wonderful time in Thailand last summer.

6. Since last year I ... (make) a great success in science.
7. I ... never ... (think) about changing my plans.
8. We ... (not see) Kate since October.
9. Mary is happy. She ... (do) the test in English with an excellent mark.
10. She ... (be) good at school so she ... (not have) problems with entrance examinations.
11. ... you ... (receive) my e-mail yet? – Yes, I have. I ... (read) it ten minutes ago.
12. Thomas ... (lose) his wallet yesterday and still ... (not find) it.
13. I ... (do) everything for Computer Science but I ... (not prepare) the report for History yet.
14. When ... you last ... play football?
15. ... you ever ... (take) part in the university conference?

Revising Tenses

2.23. Choose the correct variant.

1. Jack ... from the university two years ago.
 a) has graduated b) graduates c) graduated
2. My mother is a doctor so she always ... home at nine o'clock.
 a) leaves b) leave c) is leaving
3. Where is Ted? – He ... necessary books from the library.
 a) takes b) is taking c) take
4. Barbara ... a lot of clothes last week.
 a) buys b) has bought c) bought
5. I ... all the questions if I have any.
 a) am answering b) will answer c) have answered
6. What are you doing tonight? – I ... yet.
 a) don't know b) not know c) am not know
7. When ... Joe ... his homework? – Every evening from 6 to 9.
 a) is doing b) does do c) will do
8. Excuse me. I ... Professor Green. Have you seen him today?
 a) am looking for b) look for c) will look for
9. I ... to Egypt but last year I went to Turkey.
 a) was not b) have not been c) am not
10. Did you clean your room? – Yes,
 a) I clean b) I do c) I did
11. She ... in London. She lives in Milan.
 a) doesn't live b) don't live c) didn't live
12. What countries ... our university cooperate with?
 a) is b) do c) does
13. My parents ... on holiday next week.
 a) go b) went c) are going
14. When Melanie ... in Manchester, she will phone us.
 a) arrive b) arrives c) will arrive

15. Sarah ... from work half an hour ago.
 a) came b) has come c) will come
16. Lilly is proud because she ... the competition.
 a) won b) wins c) has won
17. When I first ... Ann, she was 19 years old.
 a) met b) have met c) meet
18. Look! Terry ... to our Rector.
 a) talking b) is talking c) talks
19. When ... you last ... a party?
 a) have had b) do have c) did have
20. How many times ... you ... this film? – More than three times.
 a) did see b) have seen c) do see

2.24. Translate the following sentences.

1. The students of our group go to the sport club twice a week.
2. Are you tired? – Yes, I am. I have done a lot of work today.
3. Have you visited the university museum yet?
4. When he was younger, he did not like sport.
5. Are you doing anything tonight? Let's go to the gym.
6. We usually discuss the results of the experiments and plan our work for the next week.
7. Does Pete work for MICRAN Company? – No, he doesn't. He is planning to work there after graduating from TUSUR.
8. Our teacher has taught us how to use the laboratory equipment.
9. Does anybody know the results of the test? I am sure I have done it without any mistakes.
10. Is Kelly in the hostel? – No, she isn't. She is visiting her parents.
11. When they finish this experiment, they will get some important results for the next one.
12. I am very busy today. I have three pairs of lectures and two laboratory works.
13. When I come home from work, I usually have dinner, clean my room and start doing my homework?
14. When did you last phone your parents? – Yesterday my mother phoned me and told me about her new job.
15. Look! Somebody has left the telephone. Does anybody know what to do?
16. What time do you usually wake up? – I always wake up before eight a.m.
17. Do you like winter sports? – Yes, I do. I like skiing and skating a lot.
18. Have you read my article yet? – No, I haven't. I am planning to read it tonight. I am writing an important report now.
19. What will you do if you don't pass Physics exam? – I don't know. I will probably attend additional lessons.
20. Who wants to take part in the conference? If you write an article you will have a better exam result.

2.25. Complete the following sentences on your own.

1. I have never
2. I am learning English because
3. I like people who
4. My group-mates usually
5. My parents ... at the moment.
6. When I was younger, I didn't
7. If I have more free time, I
8. My friends always ... at the weekend.
9. In summer I
10. Last term we
11. Every day
12. Next week
13. When I come home,
14. When I graduate from TUSUR, ...
15. I always think how to

UNIT 3

Present Simple Passive and Past Simple Passive Tenses

TENSE	ACTIVE	PASSIVE
Present Simple Tense	<p>People drink coffee in most countries.</p> <p>We discuss the problems of the faculty once a month.</p> <p>The teachers don't usually ask me about my family.</p> <p>Do you understand my questions?</p>	<p>Coffee is drunk in most countries.</p> <p>The problems of the faculty are discussed once a month.</p> <p>I am not usually asked about my family by the teachers.</p> <p>Are my questions understood?</p>
Past Simple Tense	<p>The students asked Professor Bright a lot of questions yesterday.</p> <p>The students didn't ask Professor Bright many questions.</p> <p>Did you send the letters yesterday?</p>	<p>Professor Bright was asked a lot of questions by the students yesterday.</p> <p>Professor Bright wasn't asked many questions by the students.</p> <p>Were the letters sent yesterday?</p>

3.1. Complete the following sentences with the correct form of the verb.

- English ... (speak) all over the world.
- Physics ... (study) during the whole course of the university.
- Our University ... (locate) in the very centre of the city.
- The new laboratory ... (equip) with some modern devices.
- Mobile phones ... (make) in different countries.
- Our university hall ... (clean) twice a day.
- The university library ... (visit) by the students of different faculties.
- Every lecture the teacher ... (ask) a lot of questions.
- Coffee ... (grow) in Brazil and Colombia.
- Cricket ... (play) in Australia.
- These computers ... (manufacture) in Taiwan.
- A cinema is a place where films ... (show).
- Cheese ... (make) from milk.
- The letters ... (send) every morning.
- The articles ... (publish) for each conference.

3.2. Complete the following sentences with the correct form of the verb.

1. This methods ... (work out) many years ago.
2. The latest information ... (summarise) in a scientific journal.
3. A lot of important questions ... (discuss) during yesterday seminar.
4. The picture of a well-known artist ... (give) to the local museum.
5. All the conference diplomas ... (give) to Russian scientists.
6. We ... (invite) to the restaurant the day before yesterday.
7. St. Petersburg ... (found) in 1703.
8. I ... (offer) a good job but I refused it.
9. More than fifty papers ... (present) at the symposium.
10. The classroom ... (paint) last month.
11. The letter ... (send) with a wrong address.
12. The recent concept ... (introduce) in 2013.
13. The effect of this phenomenon ... (discover) in the late 1990.
14. A new scientific library ... (open) two weeks ago.
15. This technology ... (develop) by Russian scientists in 1998.

3.3. Translate the following sentences.

1. Moscow was built in the very middle of Russia and is situated on six hills.
2. The President of Russia is elected every four years.
3. The information was processed by a computer.
4. Nothing is done without my help.
5. Who was the radio invented by?
6. A lot of mistakes in tests are usually done by students who miss lectures and practical lessons.
7. This project is done by all the students of our group.
8. The last Olympic Games were held in Sochi.
9. More than a hundred articles were published by the head of our department.
10. The telephone was left in the classroom and nobody has asked about it so far.
11. A lot of political programs are shown on Russian television.
12. Coca Cola is sold in Russia as well as all over the world.
13. The important agreement for computer equipment was signed with our company.
14. A lot of money is spent by the students for food and entertainments.
15. Football is the most popular sport at our university. It is played by students and teachers.
16. The article was written in English. Can you help me translate it?
17. A lot of flowers and presents were sent for my parents' wedding anniversary.
18. How many cars are imported from Japan?
19. When was our town founded and who was it founded by?
20. Mathematics is studied during the whole course at the university because it is very important for every special subject.

READING COURSE

UNIT 1

REVISING LEXICS

1.1. Match the words to make an expression.

- | | |
|---------------------|------------------|
| 1. communication | a. velocity |
| 2. skilled | b. signal |
| 3. wireless | c. radiation |
| 4. positive | d. system |
| 5. oscillatory | e. operator |
| 6. high | f. wire |
| 7. to propagate | g. communication |
| 8. receiving | h. distance |
| 9. to transmit | i. charge |
| 10. to measure | j. circuit |
| 11. along | k. station |
| 12. electromagnetic | l. waves |

1.2. Read the text.

The clockwork radio

Trevor Baylis is an inventor. In 1999 he heard about the problem of bringing health information to people in rural Africa. Radio was the best way but people had no electricity and couldn't pay for expensive batteries. So he invented a radio which didn't need mains power or batteries. Instead, it consisted of a spring, gears and a small generator.

So how does his clockwork radio actually function? As you turn the handle on the side of the radio, you wind up a spring. It's the same kind of steel spring used in car safety belts. It takes 60 turns to wind up the spring fully.

When the spring starts to unwind, the gears engage. There are three step-up gears. The last step up link is a pulley. Pulleys run more quietly than gears so this reduces noise. Each time the first gear turns, the generator turns one thousand times. As it turns, it generates electricity – a voltage of 3V at about 30mA. The spring has enough power to turn the radio for 30 minutes before you have to wind it up again.

More than two million clockwork radios are in use all over the world. Trevor Baylis has also invented an "electric shoe". It charges batteries as you walk.

1.3. Match the words to make an expression.

- | | |
|----------------|------------------|
| 1. wireless | a. station |
| 2. to transmit | b. laboratory |
| 3. receiving | c. power |
| 4. negative | d. circuit |
| 5. to measure | e. communication |
| 6. oscillatory | f. a message |
| 7. to equip | g. charge |
| 8. electric | h. wave |
| 9. radio | i. speed |
| 10. high | j. field |

1.4. Match the following words with their definitions.

- | | |
|----------------|--|
| 1. battery | a. to operate |
| 2. mains | b. fully |
| 3. spring | c. device that is placed inside a machine to supply it with electricity |
| 4. to function | d. a wheel used to transmit power by means of the chain passing over its rim |
| 5. to engage | e. power supply |
| 6. filly | f. to start working |
| 7. pulley | g. coiled piece of metal which returns to its original shape when it is pressed or stretched |

1.5. Translate the following sentences from Russian into English.

1. В давние времена люди использовали для связи дымовые сигналы и барабаны.
2. А. Бэлл изобрел телефон в 1876 году.
3. Скорость электрических волн равна скорости световых волн.
4. Электрические и световые волны имеют разную длину волны.
5. Ученый использовал прибор для передачи информации на большие расстояния.
6. Г. Герц смог обнаружить радио волны на расстоянии около 20 метров от передатчика в своей лаборатории.
7. А.С. Попов продемонстрировал первый радиоприемник в 1895 году.
8. Он назвал свой прибор аппаратом для обнаружения и регистрации электрических колебаний.
9. Существуют разные средства связи: телефон, телеграф, радио и т. д.
10. Термин «радио» означает излучение волн передающей станцией, их распространение в пространстве и прием принимающей станцией.

REVISING GRAMMAR

Functions of the verbs *to be*, *to have*, *to do*

The verb *to be*

Function	Example
Main verb	The device was in the lab. The device is in the lab.
Part of predicate	They are still waiting for him. The work was finished in time. This question is being widely discussed at the seminar now. Some important problems have been solved.
Modal verb	The teacher is to come at five.

1.6. Point out the function of the verb *to be* in the following sentences and translate them.

1. Radio **is** the transmission of signals, by means of electromagnetic waves with frequencies below those of visible light.
2. PCs **are** now coming in different shapes, sizes and prices.
3. We **are** to translate technical literature in the second year.
4. Bluetooth **is** used to connect and exchange information between devices such as mobile phones, laptops, personal computers, printers, digital cameras, *etc.*
5. GSM **is** a worldwide standard for mobile phones.
6. Monitoring your home and transmitting images via the Web **are** only a couple of the things you can do with your Webcam.
7. Our aim **is** to accomplish this task as soon as possible.
8. The Internet **is** a revolution in communications.
9. This device **was** designed by our engineers last year.
10. The new system **is** to be integrated in all the branches of the chain.
11. Two data signals **are** to be transmitted over two channels.
12. The team **was** given satellite phones.

The verb *to have*

Function	Example
Main verb	They have (got) new laboratory equipment.
Part of predicate	We have introduced a new system of work.
Modal verb	I have to buy another newspaper.

1.7. Point out the function of the verb *to have (got)* in the following sentences and translate them.

1. This mobile phone **has** a battery life of eight hours.
2. Wireless technologies, broadband internet and satellite systems **have** transformed the telecommunications industry.
3. I often **have** to create documents and presentations when I'm away from the office.
4. The price of telecoms services **has** fallen, on average, by around 30% in the past decade.
5. This mobile device **has** GPS so you'll be able to find your clients easily.
6. The scientist **had** to stop the experiment.
7. As many GSM network operators **have** roaming agreements with foreign operators, users can often continue to use their mobile phones when they travel to other countries.
8. Mobile phones **have** provided wireless connectivity for voice calls and text messages.
9. He **had** to work hard to complete his investigation in time.
10. Televisions **have** received broadcast content principally via cable, satellite and radio frequency transmission.
11. Thin and light laptops and ultra-portable designs are the best options when you **have** to travel with your laptop.
12. We have got a lot of problems with our new device.

The verb *to do*

Function	Example
Main verb	They do their homework every day.
Auxiliary verb	‘ Do you go to work every day?’ ‘No, I don’t .’ ‘ Does she study at the university?’ ‘Yes, she does .’ ‘ Did they finish the job yesterday?’ ‘No, they didn’t .’
Substitute	Metals conduct electricity better than semiconductors do .
Emphasis	This device does help them in their work. ‘Why didn’t you translate this article?’ ‘But I did translate it!’

1.8. Point out the function of the verb *to do* in the following sentences and translate them.

1 - main verb

2 - auxiliary verb

3 - substitute

4 - emphasis

SMS **does** (...) have several advantages. It **does** (...) a very important job. When you send a text message to a friend, the message **does not** (...) go directly to your friend’s cell phone. The advantage of this method is that your friend’s cell phone **doesn’t** (...) have to be active or in range for you to send a message. The message is stored (for days if necessary) until your friend turns his cell phone on or moves into range. SMS **doesn’t** (...) overload the network as much as phone calls **do** (...).

Multifunctional words *one (ones), that (those) it*

One (ones)

Function	Example
Numeral (Number)	One example is enough.
Empty subject	One must work hard to get good results.
Empty object	This enables one to observe and record all the changes.
Substitute	I haven’t got a dictionary. I must buy one .

1.9. Point out the function of the word *one (ones)* in the following sentences and translate them.

1. **One** of the problems has been solved with the help of the electronics in space communications.

2. The new devices have a number of advantages over the old **ones**.
3. **One** must have a very good knowledge of general engineering subjects to become a good engineer.
4. It allows **one** to solve this problem.
5. **One** cannot translate such an article without a dictionary in the first year.
6. I know only **one** solution of this problem.
7. He knew that no **one** could help him.
8. Our old laboratory equipment was much worse than the new **one**.
9. We translated many texts, but there is **one** more text to translate.
10. Last summer I read many English articles, and my friend read some German **ones**.
11. **One** must study a lot to become an engineer.
12. A given problem can have more than **one** algorithm for its solution.

That (those)

Function	Example
Demonstrative pronoun	Give me that textbook, please. I like those books.
Substitute	The work of the new device is much more efficient than that of the old one.
Relative pronoun	Spaceships can cover distances that are measured in millions of kilometers.
Conjunction	That he failed in his examination did not surprise anybody.

1.10. Choose the right Russian equivalents of *that (those)* in the following sentences and translate them.

1 - тот (та, то) 2 - те 3 - который 4 - то что

1. **That** student studies in our group. (...)
2. Computers are devices **that** are capable of very rapid and accurate calculations. (...)
3. **That** the Earth is round was unknown for a long time. (...)
4. The simplest materials are **those** which have only one kind of atoms. (...)
5. The professor **that** lectures on mechanics is the dean of our faculty. (...)
6. Do you know **those** girls? They are from our institute. (...)
7. **That** computers and robots are important for industrial uses is well known to scientists and engineers. (...)

1.11. Replace the words in bold by corresponding substitutes *one (ones), that (those)*.

1. **The day** on Mars is a little longer than ... on the Earth.
2. Most countries use **units** of the metric system and not ... of the imperial system.
3. This control **system** is more efficient than ... described in that journal.
4. There are many technical **journals** in our study; the most interesting ... are on that shelf.
5. The experimental **technique** was similar to ... described previously.
6. You should use a new **method**, not the old

The pronoun *It*

Function	Example
Subject / Object (personal)	Repeat the experiment. It is very important. I've read your report. I liked it .
Subject (demonstrative)	What is this? It is a new device.
Subject (impersonal)	It is cold in the laboratory.
Emphasis	It was D.I. Mendeleev who published the Periodic Law of Elements in 1869.

1.12. Point out the function of the pronoun *it* in the following sentences and translate them.

- 1 - personal subject; 2 - demonstrative subject; 3 - impersonal subject;
4 - personal object; 5 - emphasis**

1. Electronics is a young science. **It** belongs to the twentieth century. (...)
2. **It** is the most interesting article on this subject. (...)
3. **It** was he who informed us about the results of their work. (...)
4. The experiment was very difficult but I have done **it**! (...)
5. **It** is expected that software will be cheaper. (...)
6. You have written a test. I've checked **it**. (...)
7. What is this? **It** is a new computer. (...)
8. **It** is necessary to test these devices. (...)
9. **It** is this question that we are interested in. (...)
10. A material which allows electricity to flow through **it** is called a conductor. (...)
11. Our students study strength of materials. **It** is a very difficult subject. (...)
12. **It** is possible that the problem will be solved. (...)
13. Mathematics is studied at all technological institutes because every engineer must know **it** well. (...)
14. **It** was in the 20th century that electronic computers appeared. (...)

Adjectives and adverbs: degrees of comparison

Adjective	Comparative	Superlative
cheap	cheaper	the cheapest
large	larger	the largest
big	bigger	the biggest
easy	easier	the easiest
difficult	more difficult	the most difficult
good/ well (<i>adverb</i>)	better	the best
bad	worse	the worst
much (<i>adverb</i>)	more	the most
many	more	the most
little (<i>adverb</i>)	less	the least
far	further / farther	the furthest / farthest

1.13. Put the adjectives and adverbs into comparative or superlative degrees.

1. Tom is a ... student than Peter. (good)
2. This book is the ... of all I have read this year. (interesting)
3. Her explanation was ... than yours. (clear)
4. Mathematics is ... for technical students than many other subjects. (important)
5. This classroom is ... than other classrooms. It is the ... room here. (large)
6. This instrument is ... than the other one. (efficient)
7. This article is ... than that one. (easy)
8. I have ... time for reading than my friend has. (little)
9. Is the word 'newspaper' ... than the word 'book'? (long)
10. Who is the ... student in your group? (attentive)
11. Oil is ... than water. (light)
12. My father speaks German ... than English. (well)
13. The building of Moscow University is the ... in the capital. (tall)
14. This article is much ... than that one. (difficult)

1.14. Put the adjectives and adverbs into comparative degree and translate the sentences.

Model: The **higher** the voltage, the **higher** is the electron velocity. (high)

Чем выше напряжение, тем выше скорость электронов.

1. The ... the earth, the ... the atmosphere. (near, dense)
2. The ... the mass, the ... the weight of the body. (big)
3. The ... the temperature, the ... is the motion of the molecules. (high, rapid)
4. The ... the number of free electrons in a substance, the ... this substance conducts electricity. (great, well)

UNIT 2

REVISING LEXICS

2.1. Match the following English words with their Russian equivalents.

- | | |
|-------------------|----------------------|
| 1. device | a. катод |
| 2. equipment | b. прибор |
| 3. to flow | c. электронная лампа |
| 4. to conduct | d. испускать |
| 5. semiconductor | e. сетка |
| 6. plate | f. оборудование |
| 7. filament | g. проводить |
| 8. grid | h. электрический ток |
| 9. frequency | i. анод |
| 10. current | j. проходить |
| 11. valve | k. измерять |
| 12. to consist of | l. цепь, схема |
| 13. to emit | m. частота |
| 14. to measure | n. состоять из |
| 15. circuit | o. полупроводник |

2.2. Match the words to make an expression.

- | | |
|---------------------|---------------|
| 1. control | a. devices |
| 2. metal | b. current |
| 3. vacuum | c. distance |
| 4. copper | d. conductor |
| 5. to conduct | e. off |
| 6. to emit | f. pulse |
| 7. high | g. tube |
| 8. to measure | h. transistor |
| 9. pulse | i. wire |
| 10. switch | j. electrons |
| 11. electron | k. mobility |
| 12. electromagnetic | l. charge |
| 13. solid-state | m. frequency |
| 14. junction | n. grid |
| 15. positive | o. circuit |

2.3. Match the words with the same meaning.

- | | |
|------------------|----------------|
| 1. plate | a. carry out |
| 2. tube | b. demand |
| 3. number | c. anode |
| 4. semiconductor | d. common |
| 5. design | e. amount |
| 6. space | f. solid-state |
| 7. device | g. valve |
| 8. require | h. invent |
| 9. perform | i. room |
| 10. ordinary | j. unit |

2.4. Match the words with the opposite meaning.

- | | |
|---------------|---------------|
| 1. conductor | a. waste |
| 2. light | b. much |
| 3. little | c. heavy |
| 4. save | d. impossible |
| 5. upload | e. slow down |
| 6. familiar | f. cheap |
| 7. attract | g. insulator |
| 8. possible | h. download |
| 9. accelerate | i. reflect |
| 10. expensive | j. unknown |

2.5. Fill in the blanks with the following words.

emits	copper	plate	conductor	electronic	gain	communication
		number	triode	negative		

1. In electric devices current flows in the
2. ... devices pass the electric current through vacuum.
3. In the early years electronic equipment was used for
4. Filament ... electrons.
5. Vacuum tubes are classified according to the ... of electrodes.
6. Filament and ... are the main electrodes of the diode.
7. Electron has a ... charge.
8. The function of the ... is amplification.
9. The stream of electrons passes through the ... wire.
10. The ratio of the output signal to the input signal is called the

2.6. Read the text. Match the words from the text with their definitions.

Tunneling is used to alter the placement of electrons in the floating gate. An electrical charge, usually 10 to 13 volts, is applied to the floating gate. The charge comes from the column, or bitline, enters the floating gate and drains to a ground.

This charge causes the floating-gate transistor to act like an electron gun. The excited electrons are pushed through and trapped on the other side of the thin oxide layer, giving it a negative charge. These negatively charged electrons act as a barrier between the control gate and the floating gate. A special device called a cell sensor monitors the level of the charge passing through the floating gate. If the flow through the gate is greater than 50 percent of the charge, it has a value of 1. When the charge passing through drops below the 50-percent threshold, the value changes to 0.

- | | |
|-------------|---|
| 1. to alter | a. the surface of the earth |
| 2. to apply | b. a device that detects light, sound etc. and reacts to it |
| 3. ground | c. usefulness or importance |
| 4. barrier | d. to change |
| 5. sensor | e. to use |
| 6. value | f. smth. that prevents or blocks movement |

2.7. Translate the following sentences from Russian into English.

1. В электрических приборах ток протекает в металлическом проводнике.
2. С самого начала связь была главной целью электроники.
3. Электронные лампы классифицируются по числу электродов.
4. Триод состоит из анода, катода и управляющей сетки.
5. Главная функция триода – усиление.
6. Электроны испускаются отрицательно заряженным катодом.
7. Анод имеет положительный заряд.
8. Управляющая сетка расположена между анодом и катодом.
9. Электронные лампы работают лучше с высоким напряжением и на высоких частотах.
10. Транзисторы меньше, легче, потребляют меньше энергии, чем электронные лампы.
11. Транзисторы можно использовать для включения и выключения тока в цепи.
12. Транзисторные приборы заменили ламповые приборы, так как они имеют много преимуществ.

REVISING GRAMMAR

Tenses of the Active Voice

2.8. Put the verbs in brackets into the appropriate form.

1. Modern computers ... cache memory. (include)
2. For a programmer it ... time-consuming and tedious to work in machine language.
(be)
3. Such speeds ... the rapid solution of the problem. (permit)
4. To advertise his travel company he ... a Web site. (set up)
5. Mobile phone ... computer as the commonest way to access the Internet now.
(replace).
6. Speech recognition ... probably completely ... other input devices some day.
(replace)
7. The police ... the area for 24 hours. (watch)
8. Global warming ... a change in the world's climate. (cause)
9. The company ... the equipment at the end of the month. (deliver)
10. Now companies ... products that organize information graphically in more
intuitive ways. (develop)
11. Many high-level programming languages ... now universal, varying little from
machine to machine. (be)
12. The hard disk ... data and software programs. (store)
13. I'm sure I ... the essay by then. (finish)
14. Demand for the Internet ... very fast. (increase)
15. Our world ... an increasingly complex place, in which we are dependent on other
people or organizations. (become)

UNIT 3

REVISING LEXICS

3.1. Match the following English words with their Russian equivalents.

- | | |
|--------------------|-------------------------------------|
| 1. production | a. поле |
| 2. record | b. воспроизводить |
| 3. to record | c. питать |
| 4. to reproduce | d. регулировка громкости |
| 5. hi-fi | e. производство |
| 6. field | f. снабжать |
| 7. conversion | g. пластинка |
| 8. portable | h. высокая точность воспроизведения |
| 9. to install | i. записывать |
| 10. to power | j. преобразование |
| 11. to provide | k. устанавливать |
| 12. volume control | l. переносной |

3.2. Match the words to make an expression.

- | | |
|-----------------|--------------|
| 1. record | a. unit |
| 2. production | b. quality |
| 3. recording | c. energy |
| 4. reproduction | d. damage |
| 5. laser | e. player |
| 6. sound | f. beam |
| 7. low | g. process |
| 8. high | h. phone |
| 9. magnetic | i. speed |
| 10. to convert | j. control |
| 11. to install | k. process |
| 12. volume | l. fidelity |
| 13. hearing | m. level |
| 14. sound | n. field |
| 15. mobile | o. equipment |

3.3. Read the text. Choose the correct variant to complete the sentence.

Compact disks

A CD consists of a piece of aluminium coated with transparent plastic for producing sound. It is similar to an ordinary record, but it's read by a laser beam, and the information recorded on it is digital.

A CD can reproduce the original sound perfectly without any distortion. As the system is computerized, there is no loss of quality between the studio disk and the record that you buy. Also, a CD is much tougher than a vinyl record. Dust and dirt won't damage it, and as there is no contact between the laser and the disk, it will never wear out.

The CD player produces an audio signal which you can amplify in a conventional hi-fi system to produce the best sound possible. The new technique is a new exciting development in hi-fi, connecting sound recording with the computer revolution.

1. A CD is used for producing ...
a) picture b) audio c) image
2. Laser reads ... information recorded on the disk.
a) digital b) analogue c) ordinary
3. The sound produced by CD is of high quality because the system is ...
a) electronic b) computerized c) accurate
4. A CD is like to vinyl record in ...
a) quality b) fidelity c) shape
5. A CD doesn't wear out because there is ... between the laser and the disk.
a) a good contact b) no contact c) a problem
6. Dust and dirt are not the problem with ...
a) CD b) ordinary record c) recorder

3.4. Fill in the blanks with the following words.

line	loudspeakers	the best	jump	record	sound	lead
		get	small	poor		

The stereo area is the part of the room in which the listener can hear ... sound. Put the two loudspeakers about two meters apart (more in a very large room, less in a ... one). Turn them slightly inwards. Now imagine a ... from the centre of each speaker. Where these lines meet is the stereo area and the best place to sit and listen.

There are two important points to remember when you are deciding where to put the rest of the system. First the ... between the amplifier and the record deck should be as short as possible. A long lead will give ... sound. The leads between the amplifier and the ... can be as long as you like. Secondly watch out for feedback. This is the sound that you hear when vibrations from the music affect the record deck. Feedback can spoil the ... of the record or make the stylus

If the sound of your stereo is still disappointing, perhaps you've mixed up the leads. If you accidentally put a left-hand lead into a right-hand socket, you won't ... a stereo sound. The quickest way to test your stereo system for this or other problems is to buy a test ... which will have all kinds of sound tests on it.

3.5. Translate the following sentences from Russian into English.

1. Томас Эдисон создал рабочую модель фонографа.
2. Он использовал принцип записи и воспроизведения звука.
3. Игла двигалась по дорожке на фольге и записывала звуки.
4. Цифровая оптическая система использует лазерный оптический механизм.
5. Качество звука в CD не ухудшается при использовании.
6. Информация, записанная на CD, является цифровой и считывается лазером.
7. CD похож на виниловую пластинку.
8. Первые MP3 плееры были установлены в мобильные телефоны в 2001 году.
9. Многие плееры имеют встроенный микрофон.
10. Кнопки используются для просмотра библиотеки, выбора дорожки и воспроизведения звука.
11. Если вы слушаете громкую музыку в течение долгого времени, у вас могут быть проблемы со слухом.

REVISING GRAMMAR

Simple Passive Tenses

be + V_{ed/3}

Tense	Model	Example
Present	am / is / are + V _{ed/3}	The work is done every <i>day</i> . Работа выполняется (ее выполняют) <i>каждый день</i> .
Past	was / were + V _{ed/3}	The work was done <i>yesterday</i> . Работа выполнялась (ее выполняли) <i>вчера</i> .
Future	will be + V _{ed/3}	The work will be done <i>tomorrow</i> . Работа будет выполняться (ее будут выполнять) <i>завтра</i> .

Progressive Passive Tenses

be + being + V_{ed/3}

Tense	Model	Example
Present	am / is / are + being + V _{ed/3}	The work is being done <i>now</i> . Работа выполняется (ее выполняют) <i>сейчас</i> .
Past	was / were + being + V _{ed/3}	The work was being done <i>at 5 o'clock / when he came</i> . Работа выполнялась (ее выполняли) <i>в 5 часов / когда он пришел</i> .
Future	Употребляется форма Future Simple	

Perfect Passive Tenses

have + been + V_{ed/3}

Tense	Model	Example
Present	have / has + + been + V _{ed/3}	The work has just been done . Работа выполнена (ее выполнили) <i>только что</i> .
Past	had + been + + V _{ed/3}	The work had been done <i>by 5 o'clock / before he came</i> . Работа была выполнена (ее выполнили) <i>к 5 часам / до того как он пришел</i> .
Future	will have + + been + V _{ed/3}	The work will have been done <i>by 5 o'clock / before he comes</i> . Работа будет выполнена (ее выполнят) <i>к 5 часам / до того как он придет</i> .

3.6. Put the verb in brackets into appropriate form.

1. Digital computers now ... for a wide range of personal, business, scientific and governmental purposes. (use)
2. The operations of a digital computer ... by logic circuits. (carry out)
3. Earlier the total memory of the computer ... in thousands of bytes. (measure)
4. Read-only memory (ROM) cannot ... to. (write)
5. Random access memory (RAM) ... each time the computer ... off. (lose, turn)
6. Programs and data that ... currently ... in main storage can ... on secondary storage. (not use, save)
7. Since computers ... to operate with binary numbers, all data and instructions must ... in this form. (design, represent)
8. Such mathematical operations as addition, subtraction, multiplication and division ... by computer circuits. (perform)
9. A digital computer ... to process data in numerical form. (design)
10. Great success ... in space research by now. (achieve)
11. Vacuum tubes ... according to the number of electrodes. (classify)
12. Keyboards and mice soon ... for using personal computers. (not require)
13. Computers produce electronic waste, plastic cases and microchips that have to and ... away. (recycle, throw)
14. Another way to access the Internet ... now through the use of a satellite dish. (introduce)
15. Because transistors use less power and have a much longer life, computers ... a lot. (improve)

Revising Tenses

3.7. Put the verbs in brackets into appropriate form (active or passive).

1. The computer ... to translate a high-level language into machine language. (program)
2. The program ... for solving this original problem (write)
3. In most computers the moment-to-moment control of the machine ... in a special software program called an operating system. (reside)
4. The GPS ... by the US military. (develop)
5. Soon most people probably ... in elections online. (vote)
6. The problem in a month. (investigate)
7. Demand for the Internet ... very fast. (increase)
8. The CPU controls how fast the computer ... data or information. (process)
9. You should ... your files regularly to avoid losing data. (back up)
10. Speech ... a major component of user interfaces and applications completely ... to incorporate speech input. (become, redesign)
11. More people ... computers because computer functions ... into other electronic devices. (use, integrate)

12. Cache memory ... faster than RAM. (be)
13. The processor ... data in the cache memory first. (look for)
14. Four hackers ... yesterday. (arrest)
15. The house ... when I came. (build)
16. Most computers use instructions that ... in memory. (store)
17. We are at the threshold of new computer era, when artificial intelligence could (invent)
18. A worldwide system of satellites ... and it's possible to transmit signals around the globe. (create)
19. Databases store information so that it can ... easily (search)
20. Much attention in the telecommunication market ... to the spectrum of services. (pay)

3.8. Choose the correct variant.

1. Mobile phones ... for use by emergency services.
a) were developed b) developed c) are developed
2. Finger scanning already ... by large companies.
a) is being used b) is used c) uses
3. Cameras ... by the police and private security companies to discourage crimes.
a) are operated b) are being operated c) are operating
4. Some car rental companies already ... GPS to keep track of their vehicles.
a) is using b) are using c) have been used
5. We live in the world where our every move
a) is watching b) is being watched c) is watched
6. Every time we use a credit card or cash card our personal information ... somewhere.
a) is being recorded b) are being recorded c) recorded
7. A young man ... to 5 years in prison yesterday for car theft.
a) is sentenced b) sentenced c) was sentenced
8. The equipment ... in time.
a) is delivered b) was delivered c) deliver
9. Young hackers ... into a local Internet server and ... credit card numbers.
a) have broken/have stolen b) break/steal c) broke/stole
10. A new computer manual ... two weeks ago.
a) is released b) have been released c) was released

3.9. Choose the right English equivalent to the Russian verb.

1. Что он **делает** в данный момент?
a) do b) does c) is doing
2. Какую систему ты **используешь** в своем компьютере?
a) use b) are using c) used
3. Вчера в 7 вечера я **разговаривал** по телефону.
a) was talking b) talked c) had talked

4. Американские ученые **изобрели** транзистор в середине 20 века.
 a) invented b) had invented c) were inventing
5. Как **классифицируются** вакуумные лампы?
 a) is classified b) classify c) are classified
6. Вакуумные лампы до сих пор **используются** в высокочастотных передатчиках.
 a) are used b) have used c) have been used
7. В транзисторах электричество **проходит** через переход.
 a) pass b) passes c) is passing
8. Некоторые преимущества **сделали** транзистор незаменимым.
 a) did b) have done c) do
9. Вакуумные лампы **были заменены** на транзисторы в бытовых электронных приборах.
 a) are replaced b) were replaced c) replaced
10. Фонограф **был изобретен** в 1887 году.
 a) invented b) had been invented c) was invented

UNIT 4

REVISING LEXICS

4.1. Match the following English words with their Russian equivalents.

- | | |
|--------------------|-------------------------------------|
| 1. set | a. проводить |
| 2. to replace | b. точность |
| 3. brightness | c. настраивать |
| 4. to switch | d. влиять |
| 5. high-definition | e. развитие |
| 6. ratio | f. нагрузка |
| 7. development | g. прибор |
| 8. to tune | h. отношение, коэффициент |
| 9. to carry out | i. заменять |
| 10. load | j. яркость |
| 11. to affect | k. высокая точность воспроизведения |
| 12. accuracy | l. переключать |

4.2. Fill in blanks with the following words.

facility	from	band	digital	downlink	transmitted
		different	strength		

Until 2000s broadcast TV programs were generally recorded and transmitted as an analog signal, but in recent years public and commercial broadcasters have been progressively introducing ... television broadcasting technology.

The first satellite television signal was ... from Europe to the Telstar satellite over North America in 1962. The world's first commercial communication satellite, called Intelsat, was launched in 1965.

Satellite television, like other communications relayed by satellite, starts with a transmitting antenna located at an uplink Uplink satellite dishes are very large, as much as 9 to 12 meters in diameter. The increased diameter results in more accurate aiming and increased signal ... at the satellite. The uplink dish is pointed toward a specific satellite and the signals are transmitted within a specific frequency ... , so as to be received by one of the transponders tuned to the frequency range of the satellite. The transponder 'retransmits' the signals back to Earth but at a ... frequency band, usually in the C-band (4-8GHz) or Ku-band (12-18GHz) or both. The leg of the signal path ... the satellite to the receiving Earth station is called

4.3. Read the text.

Each year teams take part in an international football competition. The teams are organized into five leagues and the prize is the cup. Not just any cup, but the Robocup, for the players are all robots. But the objective is the same – to hit a ball into a goal. The aim of the Robocup is to promote the development of robots which can work together. Football is a good test of cooperation for any team and the robots are no exception. Although robot footballers are poor competition for a human team, each year their performance gets better and each year the standards expected are raised so that competitors must constantly develop better hardware and software.

A humanoid league will start as soon as there are sufficient two-legged players. The organizer of the Robocup is confident in the future of robotics. “By mid-21st century a team of fully autonomous humanoid soccer players will win a soccer game, complying with the official rules of FIFA, against the winner of the most recent World Cup” he says.

Other sporting events for robots exist. For example, the British Association for the Advancement of Science organizes a two-a-side event called Robot Volley Ball. The players’ task is simply to return a ball within 60 seconds of its being served. The objective again is to promote the development of robots which can work cooperatively. The advantages of having robots which can solve a range of tasks together rather than constructing single expensive robots designed for one task only are obvious.

4.4. Match up the words which have a similar meaning.

- | | |
|------------------|-------------------|
| 1. team | a. play |
| 2. to take part | b. to increase |
| 3. football | c. group |
| 4. for | d. to design |
| 5. game | e. aim |
| 6. to work | f. to participate |
| 7. to raise | g. sure |
| 8. confident | h. because |
| 9. objective | i. to operate |
| 10. to construct | j. soccer |

4.5. Answer the questions to the text.

1. What is the aim of the Robocup?
2. Do robot footballers take part in a soccer game with human players? Why?
3. What are the advantages of designing robots which can work together?

4.6. Read the text.

Walking robot carries a person

The first walking robot capable of carrying a human was demonstrated in Tokyo, Japan. Its creators at university in Tokyo and the robotics company Tsmuk hope their two-legged creature will one day enable wheelchair users to climb up and down and assist the movement of heavy goods over uneven ground.

The battery-powered robot is made of an aluminium chair mounted on two sets of telescopic poles. The poles are bolted to flat plates which act as feet. The robot uses 12 actuators to move forwards, backwards and sideways while carrying an adult weighing up to 60 kilograms. The robot can adjust its posture and walk smoothly even if the person it is carrying shifts in the chair. At present it can only step up or down a few millimeters, but the team plans to make it capable of dealing with a normal flight of stairs.

“ I believe this robot, which I prefer to call a two-legged walking chair rather than a wheelchair, will eventually enable people to go up and down the stairs”, says Atsuo Takanishi from Tokyo University.

The scientist is sure that multi-legged robots will be more useful than so-called “caterpillar model” for moving over uneven ground. Robot’s normal walking stride measures 30 centimeters and it can stretch its legs to 136 cm apart. The prototype is radio-controlled, but the research team plans to equip it with a joy stick – like controller for the user in future. The scientist says it will take at least two years to develop this robot into a working model.

4.7. Match the following words with their definitions.

- | | |
|----------------|---|
| 1. creature | a. having a smooth or even surface |
| 2. wheelchair | b. not flat or smooth |
| 3. uneven | c. a series of steps that go from one level or floor to another |
| 4. pole | d. an imaginary or very strange kind of a thing |
| 5. flat | e. a series of stairs going from one floor to another |
| 6. to adjust | h. a small creature which is like a worm with many legs |
| 7. stairs | g. a chair with wheels which is used by people who can't walk as they are injured |
| 8. caterpillar | h. to change in order to work better |
| 9. to develop | i. to cause smth to become bigger or more advanced |
| 10. flight | j. a long straight piece of wood, metal etc. which is placed in the ground to stand straight up |

4.8. Translate the following word groups.

1. robotics company
2. two-legged creature
3. wheelchair user
4. battery-powered robot
5. radio-controlled model
6. research team

4.9. Translate the following sentences from Russian into English.

1. Первый телевизор был продемонстрирован в 1939 году в Нью Йорке.
2. Черно-белые картинки были плохого качества и передавались на короткое расстояние.
3. Производство телевизоров прекратилось во время Первой мировой войны.
4. Сегодня телевизионная связь обеспечивается с помощью системы искусственных спутников земли.
5. Кабельное телевидение – это система, использующая провода для передачи TV программ.
6. В цифровой системе аналоговый сигнал заменяется цифровым кодом, содержащим информацию о яркости, цвете и т.д.
7. HDTV – это телевидение с высокой разрешающей способностью.
8. Слово робот произошло от чешского слова “robota”, означающего рабский труд.
9. Роботы делятся на три поколения: программируемые, адаптивные и интеллектуальные.
10. Роботы заменяют людей в монотонной и опасной работе.
11. Преимуществами роботов являются высокая производительность, улучшение качества продукции и т.д.

REVISING GRAMMAR

Attribute group

4.10. Choose the correct variant.

1. Electron mobility

- a) электрон мобильности
- b) электронная мобильность
- c) подвижность электронов

2. Signal processing

- a) сигнальный процессор
- b) сигнал обработки
- c) обработка сигнала

3. Control function

- a) контроль функции
- b) функция управления
- c) контрольное функционирование

4. Atmospheric nuclear explosion

- a) атмосферный ядерный взрыв
- b) взрыв ядерной энергии
- c) атмосфера ядерного взрыва

5. Speech recognition

- a) распознавание речи
- b) речевое распознавание
- c) речь признания

6. Consumer electronics

- a) потребитель электроники
- b) потребительская электроника
- c) электроника потребителя

7. Audio recording system

- a) звуко-записывающая система
- b) звук системы записи
- c) аудио система записи

8. Sound quality

- a) качество звука
- b) звуковое качество
- c) качественный звук

9. Artificial Earth satellite

- a) искусственный спутник Земли
- b) спутник искусственной Земли
- c) искусственный земной спутник

10. Flat television screen

- a) плоский экран телевизора
- b) квартира с телевизионным экраном
- c) экран плоского телевизора

11. Data input

- a) данные ввода
- b) ввод данных
- c) дата ввода

12. Person's identification code

- a) идентификация кода человека
- b) код идентификации человека
- c) человеческий код идентификации

13. Satellite system

- a) спутниковая система
- b) спутник системы
- c) система спутников

14. Laser printer manual

- a) ручной лазерный принтер
- b) лазерный справочник по принтерам
- c) руководство по использованию лазерного принтера

4.11. Choose the best translation.

1. fibre laser

- a) волоконный лазер
- b) лазерное волокно

2. industry commentators

- a) обозреватели производства
- b) индустриальные обозреватели

3. production building

- a) производство здания
- b) здание для производства

4. measurement equipment

- a) измерительное оборудование
- b) измерение оборудования

5. night vision device

- a) прибор ночного видения
- b) ночное изображение устройства

6. laser industry market

- a) лазер рыночного оборудования
- b) рынок лазерного оборудования

7. laser application centre

- a) центр применения лазеров
- b) применение лазерного центра

8. high-quality metal components

- a) высококачественные компоненты металла
- b) металлы с высококачественными элементами

9. production facilities

- a) производственные мощности
- b) производство мощностей

10. market prices

- a) рынок цен
- b) цены на рынке

11. knowledge exchange

- a) знание обмена
- b) обмен знаниями

12. laser communication technology

- a) технология лазерной связи
- b) связь лазерных технологий

13. consumer electronics

- a) бытовая электроника
- b) потребитель электроники

14. design support system

- a) система поддержки проектов
- b) проект системы поддержки

15. development path

- a) развитие траектории
- b) траектория развития

4.12. Translate the following word-groups.

1. Belgian photonics cluster
2. laser instrumentation
3. system engineer
4. complex design support
5. new generation information society
6. delegation members
7. optical systems design conference
8. photonics devices
9. investment group
10. surface roughness
11. customer service
12. optics cameras manufacturer
13. apprenticeship programmes
14. energy efficiency
15. data acquisition time
16. power output
17. roadside billboard displays
18. inspection systems
19. halogen units
20. fibre lasers use

Complex sentences

4.13. Translate complex sentences of different types.

1. I was working so hard that I forgot what time was.
2. I know he had done everything before he went to the conference.
3. The book that I am reading is very interesting.
4. My boss phoned me yesterday but he didn't leave a message.
5. What you mean about this problem is not quite clear.
6. Who will finish the project depends on the results of this experiment.
7. Whether these problems are important has to be decided soon.
8. Whether or not these processes are interrelated has not discovered yet.
9. The difficulty of distance education is that you must do your best.
10. Everybody knows that one must improve English regularly to speak it perfectly.
11. I am not sure if we will finish the project in time.
12. They want to know what time they have to arrive.
13. He was the first who discovered this phenomenon.
14. The test the students are doing now is very difficult.

15. No problems can be solved until we combine our efforts.
16. Although this new method is considered to be one of the most important we shouldn't forget about some old ones.
17. That the production of computer parts is still expensive is clear to everybody.
18. It appears to be a very exciting time for photonics? As new applications are emerging all the time.
19. The medical market is among the strongest at the moment because solid-state lasers are practically good in aesthetic applications, such as hair removal, tattoo removal and wrinkle treatment.
20. He could complete the paper in time if he had more time.

UNIT 5

REVISING LEXICS

5.1. Match the following English words with their Russian equivalents.

- | | |
|------------------|-----------------------|
| 1. circuit | a. преимущество |
| 2. design | b. ячейка |
| 3. performance | c. зависеть от |
| 4. die | d. легкий |
| 5. substrate | e. диапазон |
| 6. advantage | f. схема |
| 7. band | g. настраивать |
| 8. lightweight | h. подложка |
| 9. to depend on | i. помехи |
| 10. interference | j. конструкция |
| 11. to tune | k. производительность |
| 12. cel | l. кристалл |

5.2. Match the words to make an expression.

- | | |
|---------------|---------------|
| 1. circuit | a. strength |
| 2. integrated | b. transistor |
| 3. passive | c. board |
| 4. manual | d. phone |
| 5. discrete | e. circuit |
| 6. little | f. service |
| 7. frequency | g. components |
| 8. telephone | h. band |
| 9. to make | i. assembly |
| 10. signal | j. centre |
| 11. mobile | k. station |
| 12. emergency | l. exchange |
| 13. base | m. a message |
| 14. to send | n. a call |
| 15. switching | o. power |

5.3. Fill in the blanks with the following words.

depend on	computer	level	passive	receive	substrate
quickly	communications	lightweight	to contact		

1. IC consists of active and ... and components.
2. IC is manufactured on the surface of semiconductor
3. Performance is high since the components switch ... and consume little power.
4. Early aerospace projects needed ... digital computers for their control systems.
5. Modern computing, communication and transport systems ... the existence of ICs.
6. In mobile phone systems all ... take place through a control base station.
7. A cellphone can transmit and ... telephone calls in the cellular network area.
8. The main switching center contains a ... to select frequencies and control communication.
9. The MSC knows where to send signals ... each cellphone.
10. If the signal ... is too strong, it will cause interference to other users.

5.4. Fill in the blanks with the following words.

binary	data	advantages	analogue	represent
		speed	digital	

... transmission has been in use for many years as the basis of telephone technology and is very effective for this purpose, but it is not so suitable for high-speed transmission of information. ... transmission consists of electrical pulses representing data in code as a series of on/off pulses. A number of different codes exist, some of which are based on a 6-,7-, or 8-bit structure. The codes ... characters, transmission control signals, information separators, and device control. Digital technology has a number of ... compared to analogue, including higher transmission ..., lower incidence of errors, and the facility for mixing data consisting of voice, image, and text on the same circuit. It is for this reason that ... transmissions will be increasingly digital in the future.

5.5. Translate the following sentences from Russian into English.

1. Интегральная схема состоит из активных и пассивных компонентов.
2. Интегральные схемы собираются на поверхности тонкой подложки и полупроводникового материала.
3. Преимуществами ИС над дискретными схемами являются стоимость и производительность.
4. Производительность ИС высокая, так как компоненты быстро переключаются и потребляют мало энергии.
5. ИС является основой всех электронных приборов.

6. Связь пользователей мобильных телефонов осуществляется через центральную контрольную базовую станцию.
7. Проблему нехватки подходящих частот можно решить с использованием сотовой сети связи.
8. Частоты, используемые в одной соте, не используются в соседней.
9. Каждая сота имеет маленькую электронную базовую станцию, связанную с главным переключающим центром.
10. Главный переключающий центр содержит компьютер для выбора подходящих частот и для управления связью.
11. Базовая станция постоянно контролирует уровень сигнала телефона.

REVISING GRAMMAR

Participle I

Aspect	Active	Passive
Simple	translating coming	being translated –
Perfect	having translated having come	having been translated –

Form	Example
Simple Active	This is an out-of-date translating system. (<i>attribute</i>) The girl translating the article is my sister. (<i>attribute</i>) While translating the article the student consulted the dictionary. (<i>adverbial modifier</i>)
Perfect Active	Having translated the article I went to the University. (<i>adverbial modifier</i>) Having come home I wrote a letter to my friend. (<i>adverbial modifier</i>)
Simple Passive	The property depends on the materials being used . (<i>attribute</i>) Being invited to the conference he left for Moscow. (<i>adverbial modifier</i>)
Perfect Passive	Having been translated the article was sent to the journal. (<i>adverbial modifier</i>)

Participle II

Functions	Examples
Attribute	A written letter was on the table.
	The device used is very reliable.
Part of predicate	This problem remains unsolved .
	The article was translated by my colleague.
Adverbial modifier (Participle construction)	(When) given some time to think he always answered well.

5.6. Choose the correct form of the participle.

1. Each cell has a small base station ... in a public place.
a) situated b) being situated c) having situated
2. The main switching centre (MSC) is connected to other MSCs and to the public telephone exchange, ... cell phones to make or receive calls from other cell phones or fixed telephones.
a) being allowed b) having allowed c) allowing
3. The size of cells varies ... on the output power of the cell phone transmitter.
a) having depended b) depending c) depended
4. The work ... is of great importance.
a) done b) doing c) having done
5. ... doing his homework, he was allowed to go for a walk.
a) Having finished b) Finished c) Having been finished
6. ... computer games you must remember the time
a) playing, consumed b) played, consumed c) being played, consuming
7. He told us about the problem
a) solved b) solving c) being solved
8. ... a registration card, he couldn't go to the library.
a) Lost b) Having lost c) Losing
9. ... an unknown text it is better to write down new words.
a) Translated b) Translating c) Being translated

5.7. Form an appropriate participle from the verb given in brackets.

1. He has a GPS (Global Positioning System) ... in his car. (fit)
2. Peripherals are physical units ... to the computer. (attach)
3. A computer is a system ... of five distinct elements: a central processing unit, input devices, memory storage devices, output devices and a communication network ... a bus. (compose, call)
4. Cybercrime, crime ... with the help of computers is creating serious problems. (commit)
5. Some computers have smart card readers ... you to buy things on the Web easily and safely with digital cash. (allow)
6. A student ... artificial intelligence wants to write some programs for a course project. (study)
7. A hub is an electronic device ... all the data cabling in a network. (connect)
8. A router is a special computer ... messages when several networks are linked. (direct)
9. A network is a number of computers and peripherals ... together. (link)
10. Her house has a network, ... basic file-sharing and multi-player gaming. (allow)
11. The house has an electronic door-keeper ... to recognize you, ... access to family only. (program, give)

UNIT 6

REVISING LEXICS

6.1. Match the following English words with their Russian equivalents.

- | | |
|-----------------|----------------------------|
| 1. data | a. выполнять |
| 2. to process | b. заменять |
| 3. to perform | c. клавиатура |
| 4. calculations | d. обрабатывать |
| 5. programmer | e. информация |
| 6. to replace | f. маршрутизатор |
| 7. reliable | g. программное обеспечение |
| 8. to store | h. вычисления |
| 9. keyboard | i. хранить |
| 10. hardware | j. аппаратное обеспечение |
| 11. software | k. надёжный |
| 12. router | l. программист |

6.2. Match the words to make an expression.

- | | |
|---------------|-----------------|
| 1. personal | a. disk |
| 2. numerical | b. display |
| 3. punched | c. supply |
| 4. data | d. computer |
| 5. recording | e. instructions |
| 6. transistor | f. calculations |
| 7. power | g. unit |
| 8. disk | h. card |
| 9. hard | i. drive |
| 10. storage | j. equipment |
| 11. program | k. processing |
| 12. visual | l. device |

6.3. Read the text. Match the following words from the text with their definitions.

Flash memory

The electrons in the cells of a Flash-memory chip can be returned to normal (“1”) by the application of an electric field, a higher-voltage charge. Flash memory uses in-circuit wiring to apply the electric field either to the entire chip or to predetermined sections known as blocks. This erases the targeted area of the chip, which can then be rewritten. Flash memory works much faster than traditional EEPROMs because

instead of erasing one byte at a time, it erases a block or the entire chip, and then rewrites it.

You may think that your car radio has Flash memory, since you are able to program the presets and the radio remembers them. But it is actually using Flash RAM. The difference is that Flash RAM has to have some power to maintain its contents, while Flash memory will maintain its data without any external source of power. Even though you have turned the power off, the car radio is pulling a tiny amount of current to preserve the data in the Flash RAM. That is why the radio will lose its presets if your car battery dies or the wires are disconnected.

- | | |
|---------------|---|
| 1. chip | a. physical force or strength |
| 2. block | b. a device that is placed inside a machine to supply it with electricity |
| 3. to program | c. a very small piece of silicon in a computer that contains many electronic circuits |
| 4. power | d. to give a computer a set of instructions to perform a particular action |
| 5. contents | e. switch off |
| 6. source | f. section, unit |
| 7. turn off | g. the things that are in smth |
| 8. battery | h. smth that provides what is wanted or needed |

6.4. Translate the following sentences from Russian into English.

1. Компьютер - это электронный прибор, который выполняет сложные вычисления и обрабатывает данные с большой скоростью.
2. Компьютеры можно использовать как обучающие машины.
3. Оператор вводит инструкции и данные через устройство ввода.
4. Запоминающее устройство получает информацию и хранит её.
5. Все данные в цифровых компьютерах представлены цифрами.
6. Обработанные данные отображаются на экране.
7. Компьютеры широко используются в нашей жизни.
8. Клавиатура - самое простое и распространенное устройство ввода.
9. В 60-е годы транзисторные компьютеры заменили ламповые устройства.
10. Транзисторные компьютеры потребляли меньше энергии и были более надежными, чем ламповые.

REVISING GRAMMAR

Gerund

Gerund forms

Aspect	Active	Passive
Simple	translating going	being translated –
Perfect	having translated having gone	having been translated –

6.5. Form a suitable form of gerund from the verb given in brackets.

1. An optical CPU is capable of ... trillion discrete operations per second or it is as fast as the speed of light. (execute)
2. I improve photos in my computer by ... a few touches and then save them on a CD. (make)
3. I enjoy ... at music portals on the Web. (look)
4. Citizens may feel a loss of privacy because of ... unwanted electronic messages. (receive)
5. A young hacker was fined 1,000 after ... an offence. (admit)
6. ... into a system is strictly illegal nowadays. (hack)
7. After ... from university you can get a technical role in a company. (leave)
8. It is worth ... for a training course if you get serious about your career. (pay)
9. He is reasonable for ... and ... the software. (develop, implement)
10. You get the satisfaction of ... that you passed a tough test. (know)
11. GPS can be used for ... the navigation of ships. (aid)
12. ...the computer resources is an important function of the operating system. (manage)
13. ...large amounts of information or data quickly is the most important function of the computer. (process)

Gerund functions

Function	Example
Subject	Reading English papers is necessary for every engineer.
Part of predicate	His favorite occupation is reading .
Object	He likes reading .
	He is thinking of reading his report at the conference.
Attribute	I like his way of reading .
Adverbial modifier	After reading the article he made a short summary of it. (= having read – причастие I) By reading much we learn much.

Gerund and Participle I

Function	Gerund	Participle I
Subject	Driving a car is a profession.	–
Part of predicate	His hobby is driving .	He is driving to Moscow.
Object	He writes articles <i>about</i> driving .	–
Attribute	His plan <i>of</i> driving to Moscow is not good.	The man driving a car is our chief engineer.
Adverbial modifier	<i>Before</i> driving a car one must learn to do it properly.	Driving a car a man tries to keep steady speed and watch the car in front of him.

6.6. Translate the sentences and choose the right variant. Pay attention to the functions of the gerund and participle I.

1. **Measuring** temperature is necessary in many experiments.
 a) Измеряя b) Измерение c) Измеряющий
2. **Making** this experiment they came across some very interesting phenomena.
 a) Делая b) Проведение c) Делающий
3. The engineer insisted on **experimenting** as the best method to solve this problem.
 a) Эксперименты b) Экспериментируя c) Экспериментальный
4. **Solving** such problems helps us greatly.
 a) Решая b) Решающий c) Решение
5. **Applying** the method we get better results.
 a) Применение b) Применяя c) Применяющий
6. **Saving** your work on a computer is of great importance.
 a) Сохраняя b) Сохраняющий c) Сохранение

6.7. Translate the following pairs of sentences. Point out what parts of speech the words in bold are: gerund or participle I.

1. **Overcoming** these difficulties is not so easy as it may seem.
Overcoming these difficulties the designers can increase the fuel efficiency.
2. **Setting** a problem the scientist makes the first step to its solution.
Setting a problem is the first step to its solution.
3. **Covering** the distance between Tokyo and Moscow in less than two hours this superliner develops a speed five times above the speed of sound.
Covering the distance between Tokyo and Moscow on board a superliner requires about two hours.
4. **Putting** the discovery into practice the engineers will solve a complicated technological task.
Putting the discovery into practice sometimes requires more effort than making it.
5. He persisted in **trying** to solve that difficult problem.
Trying to solve that difficult problem he came to an interesting conclusion.
6. **Using** the new method has brought very good results.
Thousands of scientists **using** the most modern equipment are studying the atmosphere.
7. A fax machine is used for **sending** and receiving copies of original documents via a phone line.
Don't forget to write down your address when **sending** a letter.
8. Joystick is an input device especially helpful in **playing** computer games.
They are **playing** computer games now.

UNIT 7

REVISING LEXICS

7.1. Match the following English words with their Russian equivalents.

- | | |
|-----------------|--------------------|
| 1. navigate | a. доступ |
| 2. aerial | b. компилятор |
| 3. network | c. двоичный |
| 4. access | d. передвигаться |
| 5. up-to-date | e. сеть |
| 6. to display | f. с помощью |
| 7. advantage | g. преобразовывать |
| 8. compiler | h. антенна |
| 9. instruction | i. отображать |
| 10. binary | j. команда |
| 11. to convert | k. преимущество |
| 12. by means of | l. современный |

7.2. Match the words to make an expression.

- | | |
|------------------|-----------------|
| 1. networking | a. code |
| 2. to surf | b. intelligence |
| 3. dish | c. technology |
| 4. to avoid | d. engineer |
| 5. telephone | e. language |
| 6. communication | f. satellite |
| 7. machine | g. lines |
| 8. portable | h. Internet |
| 9. programming | i. interference |
| 10. software | j. aerial |
| 11. artificial | k. program |

7.3. Fill in the blanks with the following words.

to talk to	little	global	compiler	high-level	resources
	directly	links	modem	cables	

1. The Internet is a ... system of interconnected computer networks.
2. The internet carries a vast range of information ... and services.
3. Hypertext is the text that contain ... to other documents.
4. Internet Video conferencing programs enable users ... and see each other.

5. Networks can be linked together by telephone lines or fiber-optic
6. The cables require ... physical space and they are safe.
7. Computers are connected by means of a ... to ordinary telephone lines.
8. Programming languages are classified into low-level and ... languages.
9. Computers can't work ... with a program written in high-level language.
10. Programs written in a high-level language are converted into a program written in a low-level language by means of

7.4. Translate the following sentences from Russian into English.

1. Интернет – это глобальная система, связанных между собой компьютерных сетей.
2. Через интернет можно получить доступ к любым материалам, которые вас интересуют.
3. Браузер – это программа, которая помогает вам найти любую информацию.
4. Программа в режиме видео конференции помогает пользователям разговаривать и видеть друг друга.
5. Сети могут быть связаны между собой с помощью телефонных проводов или волоконно-оптического кабеля.
6. Современные системы используют волоконно-оптический кабель, так как у него много преимуществ.
7. Компьютер не может работать непосредственно с программой, написанной на языке высокого уровня.
8. Машинный язык – это язык низкого уровня.
9. Программирование – это написание подробных инструкций для машины.
10. Языки программирования делятся на языки высокого уровня и языки низкого уровня.

REVISING GRAMMAR

Infinitive

Infinitive forms

Aspect	Active / Passive	Passive
Simple	to help to be helped	I am glad to help him. – Я рад помочь ему. I am glad to be helped . – Я рад, что мне помогают .
Perfect	to have helped to have been helped	I am glad to have helped . – Я рад, что помог ему. I am glad to have been helped . – Я рад, что мне помогли .

Infinitive functions

Function	Example
Subject	To translate articles is difficult.
Part of predicate	His task was to translate the article in time.
	He can translate articles.
	He will translate this article next week.
Object	He likes to translate technical articles.
	I am glad to have translated this article.
Attribute	He was the first to translate the article.
	Here is the article to translate .
	Here is the article to be translated .
Adverbial modifier	He went home to translate the article. To translate articles you must know English well.

7.5. Complete the following sentences with the correct infinitive forms, as in the model. Pay attention to the functions of the infinitive.

Model: He was the first **to translate** this text. (перевел; *to translate*)

1. ... this experiment will not take much time. (завершение; *to complete*)
2. He hates (когда его прерывают; *to interrupt*)
3. ... computers more reliable transistors were used. (Для того (чтобы) изготовить; *to make*)
4. The information ... is taken from the journal. (которую нужно использовать / которая будет использована; *to use*)

5. We must have all the data ... the right answer. (чтобы дать; *to give*)
6. ... this work one must have all the necessary equipment. (Для того чтобы выполнить / Для выполнения; *to perform*)
7. I am happy (что меня наградили; *to award*)
8. ... an experiment of this kind seems nearly impossible. (Проведение / Провести; *to conduct*)
9. I am gladthis important experiment. (что закончил; *to finish*)
10. Telecoms companies were among the first ... their customers facilities such as Internet access or mobile telephony. (предоставили; *to give*)
11. A problem ... by a digital computer must be expressed in mathematical terms that the computer can work with. (которая будет решена / которую нужно решить; *to solve*)
12. I am ready ... it for you. (сделать; *to do*)
13. Analytical engine was invented ... data. (для сохранения / чтобы сохранять; *to store*)
14. ... a message requires some energy. (Передача / Передать; *to transmit*)

7.6. Change the following complex sentences according to the model and translate them.

Model: This scientist was the first **who developed** the new process.
This scientist was the first **to develop** the new process.

1. The engineer was the last **who made** the report at the conference.
2. The famous scientist was the first **who proved** this theory.
3. These metals were the first **that were used** in industry.
4. These devices were the first **that were tested** in our laboratory.
5. This radio station was the first **that was built** in our country.

7.7. Change the following complex sentences given below according to the model and translate them.

Model: The method **that will be used** was developed in our laboratory.
The method **to be used** was developed in our laboratory.

1. The method **which will be used** is reliable.
2. The results **which will be received** will be published next month.
3. The data **that are to be obtained** will be of great interest.
4. The measurements **that must be made** should be accurate enough.
5. The experiments **which will be demonstrated** are closely related to our research.
6. The problem **that must be solved** is very difficult.
7. The work **that must be done** is of great importance.
8. The process **to be described** in this article is known as ionization.
9. The equipment **that is to be installed** is very effective.
10. The instrument **which will be used** must make precise measurements.

UNIT 8

REVISING LEXICS

8.1. Match the following English words with their Russian equivalents.

- | | |
|----------------|----------------------------|
| 1. routine | a. разрушительный |
| 2. to run | b. стирать |
| 3. payload | c. резервная копия |
| 4. destructive | d. преступление |
| 5. to replace | e. программа |
| 6. firewall | f. отображать |
| 7. harm | g. запускать |
| 8. to display | h. вред |
| 9. to delete | i. полезная нагрузка |
| 10. software | j. программное обеспечение |
| 11. backup | k. защитное устройство |
| 12. crime | l. заменять |

8.2. Match the words to make an expression.

- | | |
|-----------------|--------------|
| 1. reproduction | a. security |
| 2. to run | b. data |
| 3. to take | c. supply |
| 4. information | d. hardware |
| 5. encrypted | e. firewalls |
| 6. computer | f. routine |
| 7. to stay | g. measures |
| 8. to press | h. file |
| 9. to delete | i. keyboard |
| 10. to protect | j. program |
| 11. to install | k. resident |
| 12. power | l. virus |

8.3. Fill in the blanks with the following words.

decryption	information	vital	provide	encryption	limited
	encoding	competitors	passwords		

Cryptography

From e-mail to cellular communications, from secure Web access to digital money, cryptography is an essential part of today's ... systems. The only way to protect a

message is to encode it with some form of Data encryption is very important for network security, particularly when sending confidential information. Encryption is the process of ... data so that unauthorized users can't read it. ... is the process of decoding encrypted data transmitted to you. The most common methods of protection are ... for access control, encryption and decryption systems, and firewalls. Firewall is software and hardware device that allows ... access to an internal network from the Internet.

Cryptography helps ... accuracy and confidentiality. It can prove your identity or protect your anonymity. It can prevent vandals from changing your Web page and industrial ... from reading your confidential documents. And in the future, as commerce and communications continue to move to computer networks, cryptography will become more and more

8.4. Translate the following sentences from Russian into English.

1. Компьютерный вирус – это маленькая программа, которая заражает компьютерную систему.
2. Вирус может содержать полезную нагрузку, которая остается неактивной до тех пор, пока пользователь не нажмет на определенную кнопку.
3. Полезная нагрузка может быть безвредной, когда, например, на экране отображаются сообщения.
4. Полезная нагрузка может быть и разрушительной, когда, например, с жесткого диска удаляются файлы.
5. Программа воспроизведения копирует себя в другие программы.
6. Троянский конь – это программа, которая имеет полезную нагрузку, но не имеет подпрограмму воспроизведения.
7. Чтобы защитить аппаратное и программное обеспечение, вы должны принять меры безопасности.
8. Пиратство – это незаконное копирование программы для продажи.
9. Природа компьютерного преступления такова, что его трудно обнаружить.
10. Большинство компьютерных преступлений раскрываются случайно.

UNIT 9

REVISING LEXICS

9.1. Match the words to make an expression.

- | | |
|-----------------|------------------|
| 1. light | a. regenerator |
| 2. glass | b. protection |
| 3. signal | c. information |
| 4. carrier | d. performance |
| 5. electrical | e. communication |
| 6. light-wave | f. pulse |
| 7. telephone | g. fiber |
| 8. copper | h. system |
| 9. to require | i. technology |
| 10. to increase | j. conversation |
| 11. optical | k. cable |
| 12. to record | l. signal |

9.2. Match up the words which have an opposite meaning.

- | | |
|-----------------|---------------|
| 1. rapid | a. dielectric |
| 2. conventional | b. to worsen |
| 3. to improve | c. a lot of |
| 4. increase | d. to receive |
| 5. to transmit | e. unusual |
| 6. thin | f. weak |
| 7. conductor | g. decrease |
| 8. single | h. thick |
| 9. powerful | i. slow |
| 10. little | j. attached |

9.3. Match the following words with their definitions.

- | | |
|------------------|--|
| 1. to transmit | a. relating to information that is stored in the form of binary code |
| 2. sophisticated | b. one having the same function or characteristics as another |
| 3. to install | c. to send information in the form of electrical signals to a radio, TV, <i>etc.</i> |
| 4. enormous | d. to set up for use or service |
| 5. capacity | e. the act of talking in an informal way |
| 6. digital | f. highly developed and complex |

- | | |
|-----------------|---|
| 7. to undermine | g. to make smth weaker or less effective |
| 8. conversation | h. the largest amount or number that can be contained, volume |
| 9. counterpart | i. extra ordinarily great size |

9.4. Fill in the blanks with the following words.

integrated	generation	computing	photons	parallel
	basis	cross	radically	

Not long ago the scientists demonstrated their experimental ... machine based on optics. It took them five years to develop it. The device – a collection of lasers, lenses and prisms – can serve as the ... for future optical computers 100 to 1,000 times as powerful as today's most advanced supercomputers. The potential applications are remarkable: robots that can see, computers that can design aircraft, processors that can ... spoken words into written text and vice versa.

Many scientists are predicting that the device will have an impact similar to that of the ... circuit which made small personal computers possible.

... , the basic unit of light beams, can in theory be much better than electrons for moving signals through a computer. First of all, photons can travel about the times as fast as electrons. And while electrons react with one another, beams of photons which have no mass or charge can ... through one another without interference. Thus, photons can move in free space. This could open the door to ... new and different computer designs, including so-called ... processors that could work on more than one problem at a time instead of one after another, as today's new ... computers do.

9.5. Translate the following sentences from Russian into English.

1. Оптические системы связи являются эффективными и универсальными.
2. Они передают огромное количество информации на большие расстояния за несколько секунд.
3. Преимуществами стекловолокна являются их размер, вес.
4. Оптические волокна не подвержены интерференции.
5. Свет встречает маленькое сопротивление, когда проходит по стекловолокну.
6. Обычные системы требуют один регенератор сигналов на одну милю.
7. Компакт диски делают из пластика, покрытого алюминием.
8. Информация, записанная на диске, является цифровой.
9. Информация записывается и считывается лазером.
10. Оптические технологии находят новые применения каждый день.

REVISING GRAMMAR

Absolute Participle and Gerund Constructions

Absolute Participle I Construction

Form	Example
Simple Active	My brother translating the article , we couldn't go home. Так как мой брат переводил статью, мы не могли пойти домой.
Perfect Active	My brother having translated the article , we went home. Когда брат перевел статью, мы пошли домой.
Simple Passive	They worked hard, the articles being translated into English . Они много работали, причем статьи были переведены на английский язык.
Perfect Passive	The translation having been done , I gave it to the teacher. После того как перевод был выполнен, я сдал его преподавателю.

9.6. Choose the Russian equivalents of the English sentences containing the absolute participle constructions.

1. D. Mendeleev having arranged the elements in a table, the existence of yet unknown elements could be predicted.

- После того как Д.И. Менделеев расположил химические элементы в таблице, стали известны все элементы.
- После того как Д.И. Менделеев расположил химические элементы в таблице, стало возможным предсказать существование тогда еще неизвестных элементов.
- То что Д.И. Менделеев расположил химические элементы в таблице, позволило предсказать существование тогда еще неизвестных элементов.

2. The CPU controls the operation of the entire system, commands being issued to other parts of the system.

- То что центральный процессорный блок управляет работой всей системы, позволило посылать команды к другим частям системы.
- Центральный процессорный блок управляет работой всей системы, при этом команды посылаются к другим частям системы.
- Центральный процессорный блок управляет работой всей системы, посылая команды к другим частям системы.

3. The conference being over, they went home.

- Они пошли домой после окончания конференции.
- Конференция закончилась, и они пошли домой.
- Когда конференция закончилась, они пошли домой.

4. The engineers having tested this device, we can use it.

- a) После того как инженеры испытают этот прибор, мы сможем его использовать.
- b) После того как инженеры испытали этот прибор, мы можем его использовать.
- c) Инженеры испытали этот прибор, поэтому мы можем использовать его.

5. Any moving object is able to do the work, the quantity of kinetic energy depending on its mass and velocity.

- a) Любое движущееся тело способно совершать работу, при этом количество кинетической энергии зависит от массы и скорости.
- b) Количество кинетической энергии зависит от массы и скорости при работе любого движущегося тела.
- c) Любое движущееся тело способно совершить работу, при которой количество кинетической энергии зависит от массы и скорости.

6. The work having been done, they decided to have a rest.

- a) Они решили отдохнуть после того, как работа была сделана.
- b) Они решили отдохнуть после того, как сделали работу.
- c) Работа была сделана, и они решили отдохнуть.

9.7. Match the Russian sentences containing the absolute participle constructions with their English equivalents.

1. Поскольку элементы обладают неизвестными свойствами, эксперименты с ними невозможны.

- a) The elements, having unknown properties, cannot be used for experiments.
- b) The elements have unknown properties, experiments with these elements being impossible.
- c) Having unknown properties, the elements cannot be used for experiments.
- d) The elements having unknown properties, experiments with them are impossible.

2. Когда свободные электроны проходит через проводник, возникает электрический ток.

- a) When passing through a conductor free electrons form an electric current.
- b) Free electrons passing through a conductor, an electric current is generated.
- c) Free electrons pass through a conductor, an electric current being generated.
- d) Free electrons passing through a conductor form an electric current.

3. Когда подаются команды, устройство управления заставляет другие устройства выполнять необходимую операцию.

- a) Instructions being obtained, the control unit causes other units to perform the necessary operation.

- b) Instructions are obtained, the control unit causes other units to perform the necessary operation.
- c) Having obtained the instructions, the control unit causes other units to perform the necessary operation.
- d) Obtaining the instructions, the control unit causes other units to perform the necessary operation.

4. Результаты арифметических операций возвращаются на накапливающий сумматор, причем регистр запоминающего устройства передает их оперативной памяти.

- a) Having returned to the accumulator, the results of the arithmetic operations are transferred to main storage.
- b) The results of arithmetic operations are returned to the accumulator, the storage register transferring them to main memory.
- c) The results of the arithmetic operations being returned to the accumulator, the storage register transfer them to main memory.
- d) Being returned to the accumulator, the results of the arithmetic operations are transferred to main memory.

Absolute Participle II Construction

<p>The article having been published, I got my author's fee. = The article published, I got my author's fee.</p>

9.8. Choose the Russian equivalents of the English sentences containing the absolute participle II construction.

1. The compositions written, the students showed them to their teacher.

- a) Написав сочинения, студенты показали их преподавателю.
- b) После того как сочинения были написаны, студенты показали их преподавателю.
- c) Студенты показали преподавателю написанные ими сочинения.

2. The question settled, he went to the university.

- a) Когда вопрос был решен, он пошел в университет.
- b) После решения вопроса он пошел в университет.
- c) Решив вопрос, он пошел в университет.

3. The necessary data obtained, we could continue our experiment.

- a) Получив необходимые данные, мы смогли продолжить эксперимент.
- b) Поскольку все необходимые данные были получены, мы смогли продолжить эксперимент.
- c) Мы смогли продолжить эксперимент после получения всех необходимых данных.

4. The necessary data obtained, we could continue our experiment.

- a) Получив необходимые данные, мы смогли продолжить эксперимент.
- b) Поскольку все необходимые данные были получены, мы смогли продолжить эксперимент.
- c) Мы смогли продолжить эксперимент после получения всех необходимых данных.

5. The session was over, with many problems left unsolved.

- a) Сессия закончилась, причем многие аспекты проблемы остались нерешенными.
- b) Сессия закончилась с многими нерешенными проблемами.
- c) Сессия закончилась, причем многие проблемы так и не были решены.

6. The book translated into many languages, everybody was able to read it.

- a) Книгу перевели на многие языки, поэтому все могли прочитать ее.
- b) После того как книгу перевели на многие языки, все смогли прочитать ее.
- c) Все имели возможность прочитать эту книгу, поскольку она была переведена на многие языки.

Gerund Construction

Form	Example
Simple Active	I know of his translating the article. Я знаю, что он переводит статью.
Perfect Active	I know of his having translated the article. Я знаю, что он перевел статью.
Simple Passive	I know of the article being translated . Я знаю, что статью переводят .
Perfect Passive	I know of the article having been translated . Я знаю, что статью перевели .

9.9. Укажите вариант, который наиболее точно передает смысл данного предложения.

1. We know of Jakobi's having invented an electromagnetic engine for practical purpose.

- a) Мы знаем, что Якоби занимается разработкой электромагнитного двигателя для практических целей.
- b) Мы знаем, что Якоби изобрел электромагнитный двигатель для практических целей.
- c) в) Мы узнали, что электромагнитный двигатель для практических целей был изобретен Якоби.

2. We know of their improving methods of production.

- a) Мы знаем об их усовершенствованных методах производства.
- b) Мы знаем, что они усовершенствовали методы производства.
- c) Мы знаем, что они усовершенствуют методы производства.

3. The students were happy about their having completed the difficult course.

- a) Студенты были счастливы, что закончили этот трудный курс.
- b) Студенты были счастливы, что этот трудный курс закончился.
- c) Этот трудный курс закончился, и студенты были счастливы.

4. I remember of their having been shown the letter.

- a) Я помню, что им показали это письмо.
- b) Я помню, что они показывали это письмо.
- c) Я помню письмо, которое им показали.

5. His taking part in the development of the new cooling system was of great help to us.

- a) То что он принимал участие в разработке новой системы охлаждения, было для нас большой помощью.
- b) Его участие в разработке новой системы охлаждения было для нас большой помощью.
- c) Он принимал участие в разработке новой системы охлаждения, что очень помогло нам.

6. Pavlov's having devoted all his life to the progress of science is known to everybody.

- a) Известно, что Павлов посвятил всю свою жизнь прогрессу науки.
- b) То что Павлов посвятил всю свою жизнь прогрессу науки, известно всем.
- c) Павлов посвятил всю свою жизнь прогрессу науки, и это известно всем.

UNIT 10

REVISING LEXICS

10.1. Match up the words which have a similar meaning.

- | | |
|------------------|-------------------|
| 1. wire | a. problem |
| 2. to unite | b. to place |
| 3. to move | c. way |
| 4. to set up | d. lead |
| 5. to contain | e. to conduct |
| 6. to send | f. ground |
| 7. since | g. to connect |
| 8. to take place | h. to make better |
| 9. trouble | i. rate |
| 10. earth | j. to travel |
| 11. beam | k. to have |
| 12. to improve | l. by chance |
| 13. solid | m. to happen |
| 14. means | n. to transmit |
| 15. occasionally | o. audio |
| 16. change | p. ray |
| 17. conversion | q. hard |
| 18. sound | r. because |
| 19. speed | s. variation |
| 20. to carry out | t. transformation |

10.2. Translate the sentences into English.

1. Чтобы использовать световые волны для связи, на орбите необходимо устанавливать зеркала или ретрансляционные станции.
2. Радиоволны распространяются по прямой линии.
3. Ионосфера отражает длинные волны.
4. Микроволны не отражаются ионосферой, а проходят через неё.
5. Ученые могут обнаружить нейтрино с помощью телескопов, которые устанавливают под землей.
6. Нейтрино не подвергается воздействию электромагнитных полей.
7. GPS – это система, состоящая из 24 спутников.
8. GPS приемник может определить точное положение пользователя и отобразить его на электронной карте.
9. Сигналы от GPS спутников не могут проходить через высокие здания и горы.
10. Когда сигнал проходит через атмосферу, его скорость уменьшается.

REVISING GRAMMAR

Infinitive Constructions

Complex Object

We know **him to be** a good programmer. = We know **(that) he is** a good programmer.

Мы знаем, что он хороший программист.

I hope **her to come**. = I hope **that she will come**.

Мы надеемся, что она придёт.

10.4. Change the following complex sentences given below according to the model and translate them.

Model: I know **that he is** a great scientist.

I know **him to be** a great scientist.

1. I hate **when you repeat** this nonsense.
2. I expect **that he will understand** your problem and help you to solve it.
3. The teacher wants **that our homework will be prepared** well.
4. We expect **that everybody will be ready** by seven.
5. I hate **when you do** this work so slowly.
6. I want **that the work will be done** in time.
7. We expect **that you will help** us.
8. He hates **when we play** computer games.

Complex Subject

He is known to be a good programmer. = *It is known* **that he is** a good programmer.

Известно, что он хороший программист.

to think, to consider, to know, to expect, to believe

to see, to hear

to suppose, to report, to prove, to turn out, to appear, to seem, to say

to be (un)likely

to be certain

to be sure

Julia is sure to come back in time.

He seems to know English.

10.5. Change the following complex sentences given below according to the model and translate them.

**Model 1: Scientists consider that his invention is of great importance.
His invention is considered to be of great importance.**

**Model 2: It is said that the book is popular with both old and young.
The book is said to be popular with both old and young.**

1. It is expected that some new textbooks will be published soon.
Some new textbooks ... soon.
2. Scientists consider that electricity exists throughout space.
Electricity ... throughout space.
3. It is said that radium is very radioactive.
Radium ... very radioactive.
4. They say that he is a good translator.
He ... a good translator.
5. It is expected that this company will pay on time.
This company ... on time.
6. We consider that these devices are very effective.
These devices ... very effective.

to be sure

to be certain

to be (un)likely

He **is sure to be back**. – Он обязательно вернется.

Under these conditions the output **is certain to increase**. – При этих условиях выпуск продукции, несомненно, возрастет.

She **is unlikely to change** her opinion. – Непохоже, что она переменит свое мнение.

10.6. Translate the following phrases into English.

1. He ... (обязательно расскажет) me my about this event even I don't ask him.
2. The article ... (похоже, что появится) in the next issue of the journal.
3. He ... (вероятно, знает) her address.
4. He ... (наверняка, спросят) about it.
5. We ... (несомненно, закончим) this work today.

to seem, to appear, to turn out, to happen

They seem to know about it. – Кажется, они знают об этом.

He appears to know his subject well. – Он, по-видимому, хорошо знает свой предмет.

The experiment turned out to be a success. – Опыт оказался удачным.

He happened to be there. – Он случайно был там.

10.7. Change the following complex sentences given below according to the model and translate them.

Model: It seems **that they have heard** all about it.

They seem **to have heard** all about it.

1. It seems **that you don't approve** of the idea.
You ... seem ... of the idea.
2. It appeared **that he was losing** patience.
He appeared ... patience.
3. It turned out **that the language of the article was** quite easy.
The language of the article turned out ... quite easy.
4. It happened **that I was present** at the opening session.
I happened ... at the opening session.
5. It turned out **that he was** a good programmer.
He turned out ... a good programmer.
6. It appears that this new method of work **is** very effective.
The new method of work appears ... very effective.
7. It seems **that he is writing** a new article.
He seems ... a new article.
8. It doesn't seem **that she wants to do** anything I suggest.
She ... seem to want ... anything I suggest.