

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ  
ФЕДЕРАЦИИ

Федеральное государственное бюджетное образовательное  
учреждение высшего профессионального образования  
«КАЗАНСКИЙ ГОСУДАРСТВЕННЫЙ  
ЭНЕРГЕТИЧЕСКИЙ УНИВЕРСИТЕТ»

Ж.И. АЙТУГАНОВА

**АНГЛИЙСКИЙ ЯЗЫК.  
СБОРНИК УСТНЫХ ТЕМ**

Казань 2013

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СБОРНИК УСТНЫХ ТЕМ

Учебно – методическое пособие  
по дисциплине  
«Иностранный язык»

Казань 2013

УДК 811.111  
ББК 81.2  
А36

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Данное пособие ставит целью развитие у студентов навыков чтения и перевода текстов на английском языке.

Оно состоит из курса обучения чтению текстов со всесторонней информацией: об англоязычных странах, родном крае, профессии инженера, выдающихся ученых, экологических проблемах. Учебно-методическое пособие предназначено для студентов всех специальностей.

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## **ВВЕДЕНИЕ**

Данное учебно-методическое пособие предназначено для студентов всех специальностей, продолжающих изучение английского языка.

Цель пособия – развитие у студентов навыков чтения общественно-политических текстов, работы со словарем, реферирования и устного высказывания по заданной тематике.

Каждый раздел включает текст, словарь к тексту и тренировочные упражнения. Тренировочные упражнения состоят из грамматических и лексических упражнений, которые рекомендуется выполнять после работы над текстом. Грамматические упражнения ставят своей целью развитие навыков и умений опознавать грамматические формы и конструкции в процессе чтения. Лексические упражнения направлены на закрепление лексики разделов.

Пособие дает возможность закрепить и углубить знания, полученные в общеобразовательной школе, и отвечает одному из требований ГОСТа: уметь вести беседу на темы, связанные со специальностью, а также на бытовые темы.

## UNIT 1

### Text A

#### ABOUT MYSELF. MY FAMILY

Let me introduce myself. My full name is Victor Andreevich Ivanov. Victor is my first name and Ivanov is my surname. I was born on April, 7, 1997 in Kazan. I am 17 years old. I am a student of Kazan State Power Engineering University. This year I have finished school number 122.

Certainly I am not married, but I've got a mother and a father. I live in Pushkin street with my parents.

My father's name is Andrei Petrovich. He works at a big plant. He is an engineer. He is 47 years old. He is always busy. He has very little free time. My mother's name is Irina Olegovna. She is two years his junior. She is an office worker at the same plant.

I am not the only child in the family. I have got a sister and a brother. My sister Kate is 6 years my senior. She doesn't work now. She runs the house and looks after the children. My sister is 23 years old. She is married. She has two daughters-baby twins. I adore my lovely nieces.

My elder brother Oleg is single. But he is engaged. His fiancée Ann (my future sister-in-law) is a student. She is in her final year.

We have a grandmother and a grandfather. They live in the country. I love them very much and often go to see them. My grandmother is retired (from service) and receives an old-age pension. But she is still in good health.

My grandfather is not retired yet. When he has free time he likes to work in the garden. I visit my grandparents from time to time.

We have many relatives. My aunts, uncles and cousins live in different parts of Tatarstan. On holidays they often come to our place. We have a very good time together.

I am always very busy, but when I am free I like to read books. I like to go to the museums and art galleries. I have a lot of friends, but my best friend is Nick. I like to travel. I am on friendly terms with my parents, we are deeply attached to each other and we get on very well.

#### Vocabulary

full name - полное имя

to be ... years senior/junior - быть на ... лет старше/моложе

office worker - служащий

to run the house - вести хозяйство

to look after the children - смотреть за детьми

twin-brothers - близнецы/братья-близнецы

niесе - племянница

nephew - племянник

elder brother - старший брат  
 to be engaged - быть помолвленным  
 fiancé(e) - жених (невеста)  
 to be retired - быть на пенсии  
 to receive = to get - получать  
 old-age pension - пенсия по старости  
 to be in good health - хорошо себя чувствовать  
 relative - родственник  
 friendly terms - дружеские отношения

### **Ex.1. Ответьте на вопросы:**

1. What is your name? Your surname?
2. How old are you?
3. Have you got a family?
4. Is your family large?
5. Do you have parents?
6. Where do they live?
7. What are they?
8. Where do they work?
9. What year student are you?
10. Why did you decide to study at our University?
11. When will you graduate from the University?
12. Do you have sisters and brothers?
13. Do you have grandparents?
14. Are they old?
15. Where do they live?
16. Do they get an old-age pension?
17. Do you have any other relatives?
18. Do you spend a lot of time with your family?

### **Ex.2. Найдите русские эквиваленты следующих слов и выражений:**

I was born; my father's name; he is busy; free time; she is two years his junior; the only child; my sister is 6 years my senior; to run the house; to look after the children; to be married; baby-twins; my future sister-in-law; to be retired; an old-age pension; from time to time; we have many relatives; friendly terms.

### **Ex.3. Переведите следующие слова и выражения на английский язык:**

Разрешите представиться; мне 17 лет; я не женат; мой папа работает на заводе; у него мало времени; моложе; старше; не единственный ребенок;

вести хозяйство; смотреть за детьми; близнецы; любимые племянники; старший брат; одинокий; быть на пенсии; учиться на последнем курсе; хорошо себя чувствовать; родственники; у меня много друзей; дружеские отношения.

**Ех.4. Заполните пропуски:**

1. My ... name is Victor Andreevich Ivanov.
2. ... year I have finished school.
3. I... got parents.
4. She ... two years his junior.
5. I am not the ... child in the family.
6. She ... not work now.
7. My sister is 22 years ....
8. She has two daughters - ... twins.
9. I visit my grandparents from .... .
10. I have ... friends.

**Ех.5. Вставьте местоимения и предлоги:**

1. Victor is ... first name.
2. I was born ... April.
3. I am a student... the institute.
4. He works ... a big plant.
5. My sister Kate is 6 years ... senior.
6. She looks ... the children.
7. She is ... her final year.
8. I visit my grandparents ... time ... time.
9. On holidays they often come ... our place.
10. I like to go ... the museums.
11. I am ... friendly terms ... my parents.

**Ех.6. Подберите русские эквиваленты:**

- |                     |                         |
|---------------------|-------------------------|
| 1. my full name     | 1. всегда               |
| 2. in this year     | 2. единственный ребенок |
| 3. always           | 3. моложе               |
| 4. little free time | 4. старше               |
| 5. junior           | 5. в этом году          |
| 6. the only child   | 6. мое полное имя       |
| 7. senior           | 7. племянница           |

8. niece	8. невеста
9. to run the house	9. дружеские отношения
10. baby twins	10. пенсия по старости
11. fiancée	11. близнецы
12. a final year	12. хорошо себя чувствовать
13. to be retired	13. вести хозяйство
14. old-age pension	14. последний курс
15. to be in good health	15. быть на пенсии
16. friendly terms	16. мало свободного времени

**Ex.7. Переведите слова в скобках:**

1. I (родился) on April, 7, 1997 in Kazan.
2. He is (всегда) busy.
3. He has (очень мало) free time.
4. She is (служащая) at the same plant.
5. I am (не единственный ребенок) in the family.
6. She (не) work now.
7. I (обожаю) my lovely nieces.
8. My (тети, дяди и кузины) live in different part of Russia.
9. We have a very good time (вместе).
10. (Я люблю) to go to the museums and galleries.

**Ex.8. Прочитайте, переведите диалог, составьте свой по образцу и воспроизведите его:**

A: What is your name?

B: My name is Oleg Pavlov.

A: How old are you?

B: I am 18 years old.

A: When were you born?

B: I was born on April, 7.

A: What university do you study at?

B: I study at Kazan Chemical Technological University.

A: What year student are you?

B: I am a first year student of the mechanical faculty.

**Ex.9. Подготовьте сообщение, используя слова и выражения:**

My parents

to be ... years old, to work, to live, to be busy, to be ... years his (her) junior, to like, in the summer, to come to see.

My grandparents

in the country, to see, to be retired, good health, the garden, to visit, friendly terms.



**Ex.10. Задайте всевозможные типы вопросов к тексту:****My friend's family**

My friend's name is Ivan. He lives in Moscow. His family is not very large. He has got a wife and two children. His wife's name is Mary and his children's names are Ann and Nick.

His parents are not old. His father is forty five years old. He works at the office as a lawyer. He likes his work very much. His mother is forty. She is a housewife.

Ivan's son is a little boy. I think he was born five or six years ago. His father takes him to a nursery school every morning. My friend's daughter is a girl of 7. She goes to school. She does a lot of subjects at school.

My friend's wife usually takes the children to the country in summer to stay with their grandfather and grandmother. They love their grandchildren very much. She's going to take them to the country again this summer.

**Text B****MY WORKING DAY**

On weekdays the alarm-clock wakes me up at 6.00 and my working day begins. I'm not an early riser, that's why it's very difficult for me to get out of bed. Every day I switch on my tape-recorder and do my morning exercises. Then I go to the bathroom, take a warm shower, and clean my teeth. After that I go to my bedroom to get dressed. At 6.30 I am ready to have breakfast. For breakfast I have a cup of tea or coffee and some sandwiches as a rule. After breakfast I wash dishes and clean the table.

As I live far from State Power Engineering University, I go there by bus. The bus stop is not far from our house. It takes me 30 minutes to get to the University and I leave home at 7.15.

Our classes begin at 8 o'clock. According to the time-table we study six or eight hours a day. We usually have three lectures and one seminar or practical class. I always attend all lectures and practical classes.

At the lectures we listen to the lecturer attentively and make notes. At the seminars we discuss problems and answer the questions of the teachers holding seminars. As for English classes I like them very much. During our English classes we read and translate texts, speak English, learn grammar rules and do exercises. Between classes we have short breaks. At 12.50 we have a long break for lunch. I may go to the refectory and have a full meal or a snack there.

Our classes are over at 3 o'clock and I go home. At home I have a short rest and then prepare my home assignment.

I usually have dinner (supper) at 7 o'clock. In the evening I read books, newspapers, magazines and watch TV. If I have free time I go to the cinema or to

the theatre. Sometimes I go to see my friends. I usually go to bed at 11.30. And still I always look forward to my next working day because I like to study. I think I get a lot of useful knowledge.

### Vocabulary

to switch on - включать  
 to do one's bed - убирать постель  
 as a rule - как правило  
 to go/ get to the University - добираться до Университета  
 to leave home - уходить из дома  
 class – занятие; practical class - практическое занятие  
 according to - в соответствии с ...  
 time-table - расписание  
 it takes me (him, her, them, us) - мне (ему, ей, им, нам) требуется  
 lecture - лекция  
 seminar - семинар  
 attentively - внимательно  
 to make notes - записывать, конспектировать  
 to hold seminar - вести (проводить) семинар  
 break - перерыв  
 refectory / canteen - столовая  
 snack bar - буфет  
 to be over - заканчиваться  
 to have a full meal / a snack - пообедать (перекусить)  
 to prepare home assignment - готовить домашнее задание  
 go to see somebody - навещать кого-либо

#### Ex.1. Ответьте на вопросы:

1. Does your working day begin early?
2. When do you usually get up?
3. What do you do in the morning?
4. What do you usually have for breakfast?
5. When do you leave home in the morning?
6. How do you get to the University?
7. How long does it take you to get there?
8. When do the classes usually begin?
9. How many classes do you have every day?
10. Do you always attend all lectures and practical classes?
11. What do you do at the lectures, at the seminars and at the English classes?
12. Where do you have lunch?
13. When are your classes over?

14. Do you stay at the University after classes or go home?
15. Where do you prepare your home assignment?
16. When do you have supper?
17. What do you do in the evening?
18. Do you go to the cinema or to the theatre?
19. When do you go to see your friends?
20. When do you go to bed?

**Ex.2. Переведите выражения на русский язык:**

To get to the University; to get up; to wake up; to wash up / to wash dishes; to do the bed; to make notes; to have breakfast (lunch, dinner); to go to see smb; to go to bed; to go by trolley-bus (bus, tram); to be over; to leave home; to return home; to come/arrive home; it takes me; as a rule; to hold a seminar (or lecture); as well as.

**Ex.3. Переведите на английский язык следующие слова и выражения:**

Как правило; мыть посуду; делать зарядку; заправлять постель; записывать; конспектировать; мне требуется; ложиться спать; ехать на троллейбусе (автобусе, трамвае); заканчивать; возвращаться домой; приходить (приезжать домой); как правило; проводить семинар; что касается; читать лекции; также как; готовить домашнее задание; столовая; вставать; просыпаться; завтракать (обедать, ужинать); добираться до института; уходить из дома.

**Ex.4. Закончите предложения выражениями из правой колонки:**

- |  |  |
|--|--|
| 1. My working day...                       | 1.... my friends.  |
| 2. Every day I...                          | 2. ... the lecturer very attentively and make notes.                       |
| 3. Then I wash, dress, do my bed and at... | 3. ... prepare my home assignment.   |
| 4. For breakfast I have...                 | 4. ... read books, newspapers, magazines or watch TV.                      |
| 5. The bus stop is not...                  | 5. ... problems and answer the questions of the teachers holding seminars. |
| 6. It takes me 30 minutes...               | 6. ... for lunch.  |
| 7. Our classes begin...                    | 7. ... to get to the University and I                                      |

- |  |   |
|--|---|
|  | leave home at a quarter past seven.                           |
| 8. According to the time-table ...           | 8. ... free time I go to the cinema                           |
| 9. At the lectures we listen to...           | 9. ... half past six I'm ready to have breakfast.             |
| 10. At the seminars we discuss...            | 10. ... to bed at half past eleven.                           |
| 11. Between classes we have...               | 11. ... switch on the radio and do my morning exercises.      |
| 12. At 12.50 we have a long break...         | 12. ... a cup of tea or coffee and some sandwiches as a rule. |
| 13. Our classes are over...                  | 13. ... at 8 o'clock.   |
| 14. At home I have a short rest and then.... | 14. ... at two or three o'clock                               |
| 15. In the evening I...                      | 15. ... we study six hours a day.                             |
| 16. If I have... .                           | 16. ... short breaks.   |
| 17. Sometimes I go to see ... .              | 17. ... far from our house.                                   |
| 18. I usually go...                          | 18. ... begins early.   |

**Ex. 5. Заполните пропуски:**

1. My ... begins ... .
2. I ... at 6 o'clock.
3. Every day I ... and do my ... .
4. After breakfast I ... and ... the table.
5. The ... ... is not far from our house.
6. It takes me 30 minutes ... the University.
7. According to ... we study six hours a day.
8. I always attend all... and..... .
9. At the lectures we listen to the lecturer... and .....
10. At the seminars we ... ... and ... ... of the teachers holding seminars.
11. Between classes we have short....
12. I may go to the ... and have a full meal or a ... there.
13. Our classes ... at two or three o'clock and I go home.

14. At home I have a ... .. and then prepare my ... .

15. If I have ... .. I go to the cinema or to the theatre.

16. Sometimes I ... .. my friends.

17. I ... go to bed at half past eleven.

**Ex.6. Вставьте предлоги:**

1. I get up ... 6 o'clock.

2. Every day I switch ... the radio and do my morning exercises.

3. Then I wash, dress, do my bed and ... 6.30 I'm ready to have a cup ... tea or coffee and some sandwiches as a rule.

4. ... breakfast I wash dishes and clean the table.

5. As I live far ... the Institute I go there ... bus.

6. It takes me 30 minutes to get ... the University and I leave home ... 7.15.

7. ... the lectures we listen ... the lecturer attentively and make notes.

8. ... the seminars we discuss problems and answer the questions . . . the teachers holding seminars.

9. At 12.50 we have a long break . . . lunch.

10. I may go ... the refectory and have a full meal or a snack there.

11. ... home I have a short rest and then prepare my home assignment.

12. I usually have dinner (supper) ... 7 o'clock.

13. ... the evening I read books, newspapers, magazines and watch TV.

14. I usually go ... bed ... 11.30.

**Ex.7. Составьте предложения со следующими словосочетаниями:**

Мне требуется, свободное время, обедать, посещать лекции и семинары, между занятиями, ехать на троллейбусе, согласно расписанию, читать и переводить тексты, учить грамматические правила, делать упражнения, вести семинар, навещать кого-либо, мыть посуду, готовить домашнее задание, делать зарядку.

**Ex.8. Задайте всевозможные вопросы к тексту и воспроизведите его, используя выделенные слова:**

### **An Englishman's day**

It begins when he sits down to breakfast with his morning paper. After breakfast except on Sundays and Saturdays, which are holidays, he goes to work by train, tube, bus, car, motor bike or even on his own feet. At midday everything stops for lunch. Most offices and small shops close for an hour, say from 1 to 2, and many people hurry to cafes. Factory workers usually eat at their canteens. The usual midday meal consists of two courses - a meat course with plenty of vegetables, then a sweet dish, perhaps fruit pudding with tea or coffee.

Then back to work again with another break in the middle of the afternoon for tea or coffee, sometimes with a cake or biscuit.

The working day finishes at time between 4 and 6. On arrival home many Englishmen like to inspect their gardens before their evening meal, usually a meat course and then a cake or tea. When this evening meal is over, the Englishman can do a little gardening and then have a walk to the nearest beer house. There is a lot of lively company there and he can play dominoes, billiards or discuss the weather or current situation. But if the Englishman stays at home he can listen to the radio, watch TV, talk, read or enjoy his favorite hobby. Then between 10 and 12 he will have a drink and snack then off to bed ready for tomorrow.

#### **Ex. 9. Воспроизведите диалог:**

##### **Working Day of a Businessman.**

N: Donald, you look so tired. You don't feel well, do you?

D: It's not that. I'm really tired. I need a rest.

N: Take a holiday.

D: I can't do it now. We've got a lot of work to do.

N: Excuse my curiosity what do you usually do at your office?

D: You'd better ask me what I don't do at my office. As soon as I come to my office I have to answer telephone calls, sign documents, participate in the talks, send letters and telegrams and do many other things.

N: How long does your working day last?

D: It depends ... I come to the office at 8.45. At 5 p.m. our working day is over. But if we've got many things to do, we stay there until everything is done.

N: I see. I suppose, you've got a break for lunch.

D: Sure. At 1 p.m. we've got a break for lunch which lasts for an hour.

N: Do you sometimes go on business trip?

D: Oh yes, quite often.

## UNIT 2

### Text A

#### TATARSTAN. KAZAN

Tatarstan is my homeland. The Republic of Tatarstan is situated in the Middle Volga region. The territory of Tatarstan is 68 thousand square kilometres. Its population is about 4 million.

There are many rivers, lakes and forests in our republic. The most important rivers are the Volga and the Kama.

Tatarstan is a republic of prodigious potentials. It is rich in natural resources, such as oil and gas.

Tatarstan has a powerful industry, a developed agriculture. We grow wheat, rye, oats, potatoes, sugar beet and other crops in our republic.

There are many cities and towns in Tatarstan: Kazan, Almetyevsk, Bugulma, Chistopol, Naberezhnye Chelny and etc. The most important city is Kazan. It is the capital of our republic.

Kazan is my native city. It is situated on the beautiful Volga river. Kazan is a very old city with many traditions. Kazan is a political, cultural, historic and economic centre. The population of Kazan is over 1 500 000.

There are 8 Institutes, 4 Academies and 12 Universities, where thousands of students master the professions of doctors, teachers, engineers, economists, lawyers and many others. Kazan University named after V.I.Lenin is a very old one. It was founded in 1804.

There are many historical places in Kazan. The most interesting places are: the Kremlin with its beautiful ancient towers, the History Museum, the National Library, ancient churches, mosques and others.

Kazan is a big industrial and economic centre. Hundreds of plants and factories produce medical equipment, chemical products, planes, helicopters, clothes and food. The products of our plants and factories are delivered to different parts of our republic and abroad.

Kazan is a large transport centre: there is a river port, a railway station and 2 airports. Many businessmen and tourists visit our republic and its capital.

Kazan is a cultural centre. There are a lot of museums, libraries, many cinemas, clubs and theatres in it.

There are many parks and gardens in Kazan. In the parks, gardens and squares there are monuments to famous people. Among them are the monuments to the Tatar poet Musa Jalil and to the heroes of the World War II.

We are proud of many famous people who lived and worked in Kazan. The names of Lobachevsky, Butlerov, Tukai, Saidashev are known all over the world.

Kazan is a growing city. Old constructions stand side by side with modern buildings. Kazan becomes more and more beautiful from year to year.

## Vocabulary

to be situated - быть расположенным  
 population - население  
 important - важный  
 prodigious potentials - богатейший потенциал, огромные возможности  
 natural resources - природные богатства  
 coal - уголь  
 powerful - мощный  
 grow - выращивать  
 wheat - пшеница  
 oat - овес  
 rye - рожь  
 sugar beet - сахарная свекла  
 crop - сельскохозяйственная культура  
 to master - овладевать чем-либо  
 ancient - древний, старый  
 tower - башня  
 church - церковь  
 mosque - мечеть  
 equipment - оборудование  
 helicopter - вертолет  
 to deliver - доставлять  
 to be proud - гордиться чем-либо  
 to stand side by side - стоять рядом (бок о бок)  
 from year to year - из года в год  
 construction - строение, сооружение

### **Ex.1. Ответьте на вопросы:**

1. Where is Tatarstan situated?
2. What is its territory and population?
3. What are the most important rivers in Tatarstan?
4. What cities and towns do you know in Tatarstan?
5. What about Tatarstan's natural resources?
6. What can you say about Tatarstan's industry and agriculture?
7. What is the capital of our republic?
8. Where is Kazan situated?
9. When was Kazan University founded?
10. What historical places do you know in Kazan?
11. What are the best monuments in our capital?



**Ex.2. Найдите русские эквиваленты следующих словосочетаний:**

The Middle Volga region; the most important; prodigious potentials; natural resources; powerful industry; sugar beet; historical places; beautiful ancient towers; ancient churches; railway station; a large transport centre; chemical products; helicopters; hundreds of plants; the famous people; a growing city; to stand side by side; from year to year.

**Ex.3. Найдите английские эквиваленты следующих словосочетаний:**

Татарстан – моя родина; огромный потенциал; природные богатства; уголь и газ; развитое сельское хозяйство; сельскохозяйственные культуры; самый важный город; родной город; много традиций; культурный центр; тысячи студентов; Казанский Университет – один из самых старых; Национальная библиотека; Исторический Музей; старинные церкви; железнодорожная станция; памятник знаменитым людям; Вторая мировая война; растущий город; из года в год.

**Ex.4. Закончите предложения подходящими фразами из правой колонки:**

- |   |  |
|---|--|
| 1. The Republic of Tatarstan is...              | a. ... are delivered to different parts of our republic and abroad.        |
| 2. Tatarstan is a republic...                   | b. ... situated in the Middle Volga region.                                |
| 3. Tatarstan has a powerful...                  | c. ... industrial and economic centre.                                     |
| 4. Kazan is a very ...                          | d. ... to the Tatar poet Musa Jalil and to the heroes of the World War II. |
| 5. Kazan University...                          | e. ... industry, a developed agriculture.                                  |
| 6. Kazan is a big...                            | f. ... was founded.  |
| 7. The products of our plants and factories ... | g. ... and squares there are monuments to famous people.                   |
| 8. Kazan is a large transport center ...        | h. .... of prodigious potentials.  |
| 9. In the parks, gardens ...                    | i. ... there is a river port, a railway station and 2 airports.            |
| 10. Among them there are monuments ...          | j. ... side with modern buildings.   |

11. Old constructions stand side by side ... k. ... old city with many traditions.

**Ех.5. Заполните пропуски:**

1. The territory of Tatarstan is ... kilometres.
2. There are many rivers, ... in our republic.
3. Tatarstan is a republic of... potentials.
4. Tatarslan has a ... industry.
5. Kazan ... my native town.
6. ... on the beautiful Volga.
7. The University ... in 1804.
8. Hundreds of... produce medical equipment, planes, helicopters.
9. The products of our plants ... to different parts of our republic and abroad.
10. There is ... port, ... station.
11. There ... monuments to ... people.
12. Old constructions stand ... with modern buildings.
13. Kazan ... more and more beautiful from ... to year.

**Ех.6. Вставьте предлоги и местоимения:**

1. The Republic of Tatarstan is situated ... the Middle Volga region.
2. It is rich ... natural resources, such as coal and gas.
3. Kazan is the capital ... our republic.
4. The products of our plants are delivered ... different parts of ... republic and abroad.
5. Many businessmen and tourists visit our republic and ... capital.
6. There are ... museums, libraries, many cinemas and clubs in ....
7. In the parks, gardens there are monuments ... famous people.
8. Among ... are the monuments ... the Tatar poet Musa Jalil and to the heroes ... the World War II.
9. Old constructions stand side ... side ... modern buildings.
10. Kazan becomes more and more beautiful... year ... year.

**Ех.7. Переведите слова в скобках:**

1. The Republic of Tatarstan (находится) in the Middle Volga region.
2. (Его) population is about 5 million.
3. There are many (рек, озер и лесов) in our republic.
4. It is (богата) in natural resources.
5. Tatarstan has (мощную индустрию).
6. There are 17 Institutes and the University, where (тысячи) of students (овладевают) the professions of doctors, teachers, engineers and many others.
7. It (был основан) in 1804.

8. Hundreds of plants and factories (производят) medical equipment, chemical products, planes, (вертолеты), clothes and food.
9. The products of our plants and factories (поставляются) to different parts of our republic and (за границу).
10. In (парках, садах и площадях) there are monuments to (знаменитым) people.

**Ex.8. Переведите диалог, выучите его наизусть:**

**Two young people are speaking in the compartment:**

- Excuse me, what region are you from?
- I am from Tatarstan.
- Where is it situated? Is it in the Central or in the Northern part of Russia?
- It is in the Central part and there are 2 big rivers: the Kazanka and the Volga in it.
- Oh, they say, that climate there is not good.
- I don't think so. The climate is moderate continental; besides I like all sorts of weather, when it is hot, warm or cold, frosty or cloudy, except windy weather. It gets on my nerves.
- By the way, I have heard that Tatarstan has separated and become a sovereign republic.
- You are mistaken, I am afraid. It's quite true that Tatarstan is a sovereign Republic of which the President is the official head. But still we have much in common with Russia.
- And is your capital a beautiful city?
- Yes, it is a very ancient city with good cultural traditions and I think with a nice future. And why do you want to visit our city?
- You see, I visit your city on business. Kazan has become a big commercial and business centre.

**Ex.9. Составьте диалоги, используя данные слова и выражения:**

1. Homeland, population, republic, city, rivers, centre, industry, agriculture, most important.
2. Capital, beautiful, traditions, University, places, ancient, transport, cultural centre, monuments.

## Text B

### KAZAN STATE POWER ENGINEERING UNIVERSITY

KSPEU is the educational and scientific-research centre of Tatarstan energetics.

KSPEU is a **basic higher educational establishment** of power specialists training in Tatarstan Republic. It occupies one of the leading positions in educational level, technical equipment and scientific work.

KSPEU has the full-time (day-time), part-time (evening-time) and distant-learning (external) education versions. It offers courses on 46 specialities and specializations. KSPEU includes 3 Institutes: **Heat and Power Engineering Institute, Electrical Power Engineering Institute and Institute of Economy and Information Technologies** (humanitarian specialities).

At the moment more than 10 000 students and post-graduate students from different regions of the Russian Federation, countries of CIS (The Commonwealth of Independent States) and distant foreign countries are studying at the University.

Pedagogical process and scientific work at the University are carried out by a team of highly qualified teaching staff and scientific workers. Among the University scientists there are Associate Members of RT Academy of Sciences and also academicians and Associate Members from a number of other Academies.

The University is one of the three specialized Power Engineering High Learning Institutions in Russia. It became the science and technology centre of power engineering specialists training. The University has dissertational councils on maintaining theses for a Doctor's degree and for a Candidates and Masters degrees on directions: Thermal Power and Electrical Power Engineering, Physics, Humanitarian and Social Sciences.

The course of competitors for Doctor's degree and the post-graduate course train the scientific staff for the Volga Region enterprises and organizations.

There are the Institute preparatory centre, the faculties of additional education and post-graduate professional education, the International Relations Department in KSPEU.

The University has a publishing-polygraphic complex with modern equipment for books publishment, educational literature, scientific magazines, etc.

The KSPEU library is divided into several reading halls and owns the most complete literature fund in energetics field. The total library book fund is reflected in electronic catalogues of all-university computer network with the free access of users.

KSPEU has the aim training and work placement department for graduating students, which is purposefully occupied with the university post-graduate student's work arrangement.

## Students life.

The University Students Club organizes the students' leisure time. Students participate in amateur art activities, sing in the choir. For several years KSPEU is a winner of Student's festival "Student's spring".

Students have great opportunities for physical culture, sports activities. They have sport halls, tennis courts, playgrounds at their disposal.

## Vocabulary

scientific research centre - научно-исследовательский центр

establishment - учреждение

power specialists training - подготовка специалистов в области энергетики

occupy - занимать

equipment - оборудование

full-time - дневное обучение

part-time - вечернее обучение

post-graduate students - аспиранты

to carry out - выполнять

staff - штат

council - совет

thesis (pl.theses) - диссертация

leisure time - досуг

be at smb's disposal - быть в чем-либо распоряжении.

### Ex.1. Ответьте на вопросы:

1. What is KSPEU?
2. What positions does KSPEU occupy?
3. What type of education does it provide?
4. How many specialities and specializations are there in KSPEU?
5. How many students study at our University?
6. Is there a post-graduate course at the University?
7. Does the University have a professional staff?
8. The University became the science and technology centre of power engineering specialists training, didn't it?
9. What facilities are there in the University?
10. Who organizes the students' leisure time?

### Ex.2. Найдите в тексте английские эквиваленты следующих слов и выражений:

Высшее образовательное учреждение; занимать; лидирующее положение; техническое оборудование; научная работа; научно-исследовательский

центр; дневное обучение; вечернее обучение; аспиранты; квалифицированный преподавательский штат; академия наук; диссертационный совет; подготовка специалистов в области энергетики.

**Ex.3. Закончите предложения подходящими по смыслу словами:**

1. The University has the full-time, part-time and ... .
2. It is a basic higher educational establishment of ... .
3. It is the educational and scientific-research ... .
4. More than 10000 students and post-graduate students ... .
5. The University Students Club organizes ... .

**Ex.4. Переведите слова в скобках:**

1. Students have (большие возможности) for physical, culture, sports activities.
2. The KSPEU library (делится) into several reading halls.
3. (Педагогический процесс) and scientific work (выполняются) by a team of highly qualified teaching staff.
4. The University has (диссертационный совет).
5. It became (научный) centre of power engineering specialists training.

**Ex.5. Выделите 3 основные идеи текста.**

**Ex.6. Расскажите, что вы знаете о Казанском Государственном Энергетическом Университете.**

## UNIT 3

### Text A

#### THE RUSSIAN FEDERATION

The Russian Federation is the largest country in the world. It occupies about one-seventh of the earth's surface. It covers the eastern part of Europe and the northern part of Asia. Its total area is about 17 million square kilometers. The population of the country is about 143.3 mln. people. The country is washed by 12 seas of 3 oceans: the Pacific, the Arctic and the Atlantic. In the south Russia borders on China, Mongolia, Korea, Kazakhstan, Georgia and Azerbaijan. In the west it borders on Norway, Finland, the Baltic States, Belarus, Ukraine. It also has a sea-border with the USA.

There is hardly a country in the world where such a variety of scenery and vegetation can be found. We have steppes in the south, plains and forests in the midland, tundra and taiga in the north, highlands and deserts in the east.

There are two great plains in Russia: the Great Russian Plain and the West Siberian Lowland. There are several mountain chains on the territory of the country: the Urals, the Caucasus, the Altai and others. The largest mountain chain, the Urals, separates Europe from Asia.

There are over two million rivers in Russia. Europe's biggest river, the Volga, flows into the Caspian Sea. The main Siberian rivers — the Ob, the Yenisei and the Lena — flow from the south to the north. The Amur in the Far East flows into the Pacific Ocean.

Russia is rich in beautiful lakes. The world's deepest lake (1,600 metres) is Lake Baikal. It is much smaller than the Baltic Sea, but there is much more water in it than in the Baltic Sea. The water in the lake is so clear that if you look down you can count the stones on the bottom.

Russia has one-sixth of the world's forests. They are concentrated in the European north of the country, in Siberia and in the Far East.

On the vast territory of the country there are various types of climate, from arctic in the north to subtropical in the south. In the middle of the country the climate is temperate and continental.

Russia is very rich in oil, coal, iron ore, natural gas, copper, nickel and other mineral resources.

The capital of Russia is Moscow. It is its largest political, scientific, cultural and industrial centre. It is one of the oldest Russian cities.

The national symbols of the Russian Federation are a white-blue-red **banner** and a double-headed eagle.

The Russian Federation is a presidential republic headed by the President. The country government consists of three branches: **legislative**, **executive** and **judicial**. The President controls only the executive branch — the government, but not the Supreme Court and Federal Assembly.

The legislative power belongs to the **Federal Assembly** comprising two chambers: **the Council of Federation** (upper Chamber) and the **State Duma** (lower Chamber). Each chamber is headed by the Speaker. The executive power belongs to the government (the Cabinet of Ministers) headed by the Prime Minister. The judicial power belongs to the system of Courts comprising the Constitutional Court, the **Supreme Court** and federal courts.

Our country has a multiparty system. The largest and most **influential** political parties are the «United Russia», the Communist party, «The Patriots of Russia», «The Justice Russia», «The Apple», Liberal-Democratic and some others.

The **foreign policy** of the Russian Federation is that of international cooperation, peace and friendship with all nations irrespective of their political and social systems.

But in spite of the problems Russia is facing at present, there are a lot of opportunities for this country to become one of the leading countries in the world. I'm sure that we, the younger generation, can do very much to make Russia as strong and powerful as it used to be.

*Names*

the Russian Federation - Российская Федерация	the Great Russian Plain - Русская (Восточно-Европейская) равнина
Europe - Европа	
Asia - Азия	the West Siberian Lowland - Западно-Сибирская низменность
the Pacific Ocean - Тихий океан	the Urals - Уральские горы
the Arctic Ocean - Северный Ледовитый океан	the Caucasus - Кавказ
the Atlantic Ocean - Атлантический океан	the Altai - Алтай
China - Китай	the Volga - Волга
Mongolia - Монголия	the Caspian Sea - Каспийское море
Korea - Корея	the Yenisei - Енисей
Kazakhstan - Казахстан	the Amur - Амур
Georgia - Грузия	Lake Baikal - озеро Байкал
Azerbaijan - Азербайджан	the Baltic Sea - Балтийское море
Norway - Норвегия	Siberia - Сибирь
Finland - Финляндия	the Far East - Дальний Восток
the Baltic States - Прибалтийские государства	The Ob - Обь
Belarus - Беларусь	
Ukraine - Украина	

*Vocabulary*

to occupy - занимать
surface - поверхность
Eastern - восточный
Northern - северный
total area - общая площадь
square - квадратный
to wash - омывать
to border on - граничить с
sea-border - морская граница
There is hardly a country in the world... - Едва ли найдется страна...
variety - разнообразие, множество
scenery - пейзаж, ландшафт



vegetation - растительность  
steppe - степь  
plain - равнина  
midland - средняя полоса  
tundra - тундра  
taiga - тайга  
highland - нагорье, высокогорная местность  
desert - пустыня  
chain - цепь  
to separate - разделять  
to flow - впадать  
Siberian - сибирский  
to count - считать  
bottom - дно  
to concentrate - сосредотачиваться, концентрироваться  
vast - обширный  
various - различный  
arctic - арктический  
subtropical - субтропический  
temperate - умеренный  
continental - континентальный  
oil - нефть  
coal - уголь  
iron ore - железная руда  
copper - медь  
mineral resources - полезные ископаемые  
parliamentary - парламентский  
head of state - глава государства  
legislative - законодательный  
powers - полномочия  
to exercise - осуществлять, выполнять  
scientific - научный  
complicated - сложный, запутанный  
to decrease - снижаться, падать  
constantly - постоянно  
the rate of inflation - уровень инфляции  
to go bankrupt - обанкротиться  
in spite of - несмотря на  
the younger generation - молодое поколение

**Ex.1. Ответьте на вопросы:**

1. Where is the Russian Federation situated?
2. What is the total area of the country?
3. What countries does Russia border on?
4. What mountain chain separates Europe from Asia?
5. How many rivers are there in Russia?
6. Which is the longest river in Europe?
7. What do you know about Lake Baikal?
8. Do you know what strait separates Russia from America?
9. What mineral resources is the Russian Federation rich in?
10. What is the climate like in Russia?
11. What can you say about the Russian economy?
12. What great Russians do you know?

**Ex.2. Переведите на русский язык слова и словосочетания:**

Occupy; earth's surface; cover; border on; a variety of scenery; mountain chains; flow into; various types of climate; subtropical; in the middle; temperate; iron ore; natural gas; parliamentary republic; legislative powers; exercise; complicated; decrease; rise; the rate of inflation; lose jobs; in spite of; opportunities.

**Ex.3. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Самая большая горная цепь; отделять; сосредотачиваться; занимать поверхность; несколько горных цепей; минеральные ресурсы; законодательная власть; промышленный центр; промышленное производство снижается; возможности.

**Ex.4. Закончите предложения:**

1. The country is washed by ...
2. Its total area is about ...
3. The largest mountain chain, the Urals, separates ... ..
4. Russia is very rich in ...
5. Russia is a ... ..
6. The industrial production is ...

**Ex.5. Поставьте следующие предложения в вопросительную и отрицательную форму:**

1. The Russian Federation is the largest country in the world.

2. The country is washed by 12 seas of 3 oceans.
3. It has a sea-border with the USA.
4. There are two Great Plains in Russia.
5. Russia is a parliamentary republic.
6. The legislative powers are exercised by the Duma.

**Ex.6. Составьте предложения, используя данные слова и словосочетания:**

1. Surface; occupies; one-seventh; about; it; of the; earth's.
2. Covers; the eastern part; Europe; of; it; and; of Asia; the northern; part.
3. The USA; it; has; with; also; a sea-border.
4. Of the country; there are; chains; several; mountain; on the territory.
5. The Duma; by; the legislative; are; powers; exercised.

**Ex.7. Соответствуют ли данные предложения содержанию текста:**

1. The Russian Federation is situated in the western part of Europe and the southern part of Asia.
2. Its total area is about 20 million square kilometers.
3. There are two Great Plains in Russia.
4. There are over five million rivers in Russia.
5. Europe's biggest river, the Lena, flows into the Caspian Sea.
6. Russia is a constitution monarchy.
7. The head of State is the king.

**Ex.8. Переведите слова в скобках:**

1. The Russian Federation (занимает) about one-seventh of the earth's surface.
2. The country (омывается) by 12 seas of 3 oceans.
3. There are (две великие равнины) in Russia.
4. The largest mountain chain, the Urals, (отделяет) Europe from Asia.
5. Europe's biggest river, the Volga, (впадает) into the Caspian Sea.
6. Russia is a (президентская) republic.

**Ex.9. Перескажите текст, используя план:**

1. Geographical position.
2. A variety of scenery and vegetation.
3. Rivers and lakes in Russia.
4. Various resources.
5. Political and economic situation.

## Text B

### MOSCOW

Moscow is the capital of Russia, its political, economic, commercial and cultural centre. It was founded 9 centuries ago by Prince Yuri Dolgoruky. Historians have accepted the year of 1147 as the start of Moscow's history. Gradually the city became more and more powerful. In the 13th century Moscow was the centre of the struggle of Russian lands for the liberation from the tartar yoke. In the 16th century under Ivan the Terrible Moscow became the capital of the new united state. Though Peter the Great moved the capital to St Petersburg in 1712, Moscow remained the heart of Russia. That is why it became the main target of Napoleon's attack. Three-quarters of the city was destroyed by fire during Napoleon's occupation, but by the mid-19th century Moscow had been completely restored. After the October revolution Moscow became the capital again. Now Moscow is one of the largest cities in Europe. Its total area is about nine hundred square kilometers (ancient Moscow occupied the territory of the present day Kremlin). The population of the city is over 15 million.

Moscow is one of the most beautiful cities in the world. The heart of Moscow is Red Square. It has more historic associations than any other place in Moscow. The Kremlin and St Basil's Cathedral (Vasily Blazheny) are masterpieces of ancient Russian architecture. The main Kremlin tower, the Spasskaya Tower, has become the symbol of the country. On the territory of the Kremlin you can see old cathedrals, the Belt Tower of Ivan the Great, the Palace of Congresses, the Tzar-Cannon and the Tzar-Bell, the biggest cannon and bell in the world. St Basil's Cathedral was built in the mid-16th century in memory of the victory over Kazan. There is a legend that Ivan the Terrible blinded the architects Barma and Postnik, because he didn't want them to create another masterpiece.

There are a lot of beautiful palaces, old mansions, cathedrals, churches and monuments in Moscow. Now Moscow is being reconstructed and we all hope that in a few years the city will become even more beautiful.

There are more than 200 museums in Moscow. The largest museums are the Pushkin Museum of Fine Arts and the State Tretyakov Gallery. Other unique museums in Moscow include the All-Russia Museum of Folk Arts, the Andrei Rublev Museum of Early Russian Art, Alexei Bakhrushin Theatre Museum, Mikhail Glinka Museum of Musical Culture and many others.

Moscow is famous for its theatres. The best-known of them is the Bolshoi Opera House. Drama theatres and studios are also very popular.

Moscow is a city of students. There are over 180 higher educational institutions in it, including universities, institutes, academies.

Moscow is the seat of the Russian Parliament (the Duma) and the centre of political life of the country.

## Names

Ivan the Terrible - Иван Грозный  
 Peter the Great - Петр Великий (Петр I)  
 St Petersburg - Санкт-Петербург  
 Napoleon - Наполеон  
 St Basil's Cathedral - собор Василия Блаженного  
 The Bell Tower of Ivan the Great - Колокольня Ивана Великого  
 the Tzar-Cannon - Царь-пушка  
 the Tzar-Bell - Царь-колокол  
 Barma and Postnik - Барма и Постник  
 the Pushkin Museum of Fine Arts - Музей изобразительных искусств имени Пушкина  
 Kazan - Казань  
 the State Tretyakov Gallery - Государственная Третьяковская галерея  
 the All-Russia Museum of Folk Arts - Всероссийский музей декоративного, прикладного и народного искусства  
 the Andrei Rublev Museum of Early Russian Art - Музей древнерусского искусства имени Андрея Рублева  
 Alexei Bakhrushin Theatre Museum - Театральный музей имени Бахрушина  
 Mikhail Glinka Museum of Musical Culture - Музей музыкальной культуры имени Глинки  
 the Bolshoi Opera House - Большой театр оперы и балета

## Vocabulary

historian - историк  
 to accept - принимать, допускать  
 gradually - постепенно  
 powerful - сильный, могущественный  
 liberation - освобождение  
 tartar yoke - татарское иго  
 united - соединенный, объединенный  
 to remain - оставаться  
 target - мишень  
 attack - нападение, атака  
 to destroy - разрушать  
 fire - пожар  
 occupation - оккупация  
 completely - полностью, целиком  
 to restore - реставрировать, восстанавливать  
 ancient - древний  
 masterpiece - шедевр

architecture - архитектура  
 architect - архитектор  
 tower - башня  
 legend - легенда  
 to blind - ослепить  
 palace - дворец  
 mansion - особняк  
 to reconstruct - перестраивать, восстанавливать  
 unique - уникальный, единственный в своем роде  
 drama theatre - драматический театр  
 studio - студия, театр-студия  
 higher educational institution - высшее учебное заведение

### **Ex.1. Ответьте на вопросы:**

1. When was Moscow founded?
2. Is there a monument to Yuri Dolgoruky in Moscow? Where is it?
3. When did Moscow become the capital?
4. In 1712 the capital was moved to St Petersburg, wasn't it? When did Moscow become the capital again?
5. Was ancient Moscow a big city? What's the total area of modern Moscow?
6. What's the population of Moscow?
7. What places of interest in the centre of Moscow do you know?
8. What do you know about St Basil's Cathedral?
9. What can you see on the territory of the Kremlin?
10. What are the most famous Moscow museums? (art galleries?)
11. What theatres in Moscow do you know?
12. What is your favorite place in Moscow?

### **Ex.2. Переведите на русский язык слова и словосочетания:**

Historians; accepted; gradually; struggle; the liberation; the tartar yoke; the new united state; moved; remained the heart; the main target; three-quarters; destroy; during occupation; completely restored; historic associations; masterpieces; blinded; old mansions; cathedrals; churches; reconstruct.

### **Ex.3. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Коммерческий и культурный центр; приняли; постепенно; борьба; за освобождение; объединенное государство; оставалась; цель атаки; оккупация;

полностью восстановить; воспоминания; шедевры; собор; память; ослепить; создать другие шедевры; особняки; парламент.

**Ex.4. Закончите предложения:**

1. Moscow is a political, economic ... ..
2. It was founded 9 centuries ago by ... ..
3. In the 16<sup>th</sup> century under Ivan the Terrible Moscow became ...
4. By the mid-19<sup>th</sup> century ... ..
5. The population of the city is ... ..
6. The heart of Moscow is ... ..

**Ex.5. Поставьте следующие предложения в вопросительную и отрицательную форму:**

1. Moscow is the capital of Russia.
2. In the 13<sup>th</sup> century Moscow was the centre of the struggle of Russian lands for the liberation from the tartar yoke.
3. Peter the Great moved the capital to St Petersburg in 1712.
4. By the mid-19<sup>th</sup> century Moscow had been completely restored.
5. The Spasskaya Tower has become the symbol of the country.
6. Now Moscow is being reconstructed.

**Ex.6. Составьте предложения, используя данные слова и словосочетания:**

1. Moscow; mansions; there are; and; a lot of; palaces; cathedrals; beautiful; churches; old; in.
2. More; 80 museums; in Moscow; there are; than.
3. Theatres; is; Moscow; famous; its.
4. Russian; is; the seat; Parliament; Moscow; of.
5. The start; historians; the year of 1147; history; of Moscow's; have accepted; as.

**Ex.7. Соответствуют ли данные предложения содержанию текста:**

1. Now Moscow is one of the largest cities in Europe.
2. Its total area is about fifteen hundred square kilometers.
3. The population of the city is over nine million.
4. Moscow was founded five centuries ago by Peter the Great.
5. In the 14<sup>th</sup> century under Ivan the Terrible Moscow became the capital of the new united state.

**Ex.8. Переведите слова в скобках:**

1. It (была основана) 9 centuries ago by Prince Yuri Dolgoruky.

2. Historians (приняли) the year of 1147 as the start of Moscow's history.
3. Peter the Great (переместил) the capital to St Petersburg in 1712.
4. The Kremlin and St Basil's Cathedral (являются шедеврами) of ancient Russian (архитектуры).
5. There is a legend that Ivan the Terrible (ослепил архитекторов) Varma and Postnik.
6. (Самый известный) of them is the Bolshoi Opera House.

**Ex.9. Перескажите текст, используя план.**

1. The history of Moscow.
2. Total area and the population.
3. Red Square.
4. Moscow is the centre of culture.

## UNIT 4

### Text A

#### GREAT BRITAIN

Great Britain (official name — the United Kingdom of Great Britain and Northern Ireland) is situated on two large islands, the largest of which is Great Britain, the smaller is Ireland. In addition to these two islands Great Britain includes over five hundred small islands. The total area of Great Britain is 240,000 sq. kms, its population is over 63,000,000 people.

In the north-west and west the country is washed by the Atlantic Ocean and the Irish Sea, in the east by the North Sea. The island of Great Britain is separated from France by the English Channel. Northern Ireland, which is a part of Great Britain and which is situated on the island of Ireland, is separated from Great Britain by the North Channel.

The island of Great Britain is divided into two parts: mountainous (in the north and west of the island) and lowland (in the south and east) There are no very long rivers in Great Britain. The most important rivers are the Thames (the deepest) and the Severn (the longest). The rivers seldom freeze in winter. Due to the moderating influence of the sea Great Britain has an insular climate, rather humid and mild, without striking discrepancy between seasons.

Great Britain consists of four main parts: England, Scotland, Wales, and Northern Ireland. Administratively Great Britain is divided into 55 counties. The biggest cities of Great Britain are London, Birmingham, Glasgow, Liverpool, Manchester, Edinburgh, and Cardiff. England is the largest part of Great Britain (it occupies over 50% of the territory and its population amounts to 83 % of the total population of Great Britain). Wales is a peninsula in the south-west of the island of Great Britain. It occupies about 9 % of its territory with the population of 4.8 % of



the total population. Scotland is the most northern part of Great Britain with a territory of 32 % of the total territory and with a population of 9 % of the total population of Great Britain. Northern Ireland occupies the north-east part of the island of Ireland. Its territory amounts to 5.2 % of the total territory of Great Britain. The main cities of Northern Ireland are Belfast and Londonderry.

The Welsh have their own language. However, many Welsh people do not know Welsh, and English is spoken by everyone in Wales. Scotland and Ireland also have their own languages, but these are rarely spoken and English is known by everyone there.

Great Britain is a parliamentary monarchy, officially the head of state is the Queen (or the King). However, the power of the Queen in Great Britain is not absolute. She acts only on the advice of the ministers and Parliament. There is no written constitution in Great Britain. The main principles of British legislation are expressed in other documents, like "Magna Charta", Habeas Corpus Act, "Bill of Rights", the Parliamentary Act which decided the position of the House of Lords, and the Judicature Act. British legislation does not provide written guarantees of individual political rights.

Parliament in Great Britain has existed since 1265 and is the eldest Parliament in the world. It consists of two Houses — the House of Lords and the House of Commons. The House of Lords consists of 1000 peers who are not elected by the people. The House of Commons is a nation-wide representative body which is elected by the people at a general election, within 5 years of the last election. After the general election the Queen appoints the head of the government — the Prime Minister. As a rule the Prime Minister is the leader of the party that has won the election. The Prime Minister appoints the ministers to make up the government.

There are two main political parties in Great Britain: the Conservative party and the Labour party. The Conservative party came into being in the 19th century as a result of the evolution of the Tory party. The Labour party was founded in 1900 but since 1906 it has borne the name of the Labour Party. The Labour Party won the election for the first time in 1945.

Great Britain is a highly-developed industrial country. The main fields of British industry are machine-building, ship-building, metallurgy, and electronics.

### **Names**

The British Isles	Британские острова
Edinburgh	Г. Эдинбург (столица Шотландии, крупный культурный центр)
Cardiff	Г. Кардифф (столица Уэльса, крупный промышленный центр и порт)
Belfast	Г. Белфаст (столица Северной Ирландии, крупный промышленный

	центр)
The English Channel	Английский канал (принятое в Великобритании название пролива Ла-Манш)
The House of Lords	Палата лордов
The House of Commons	Палата общин

### Vocabulary

total area - общая площадь

population - население

separate - отделять, разделять

divide - разделять

due to - благодаря

mountainous - гористый

lowland - низменность

seldom - редко

influence - влияние

insular - островной

striking - поразительный, удивительный, резкий

discrepancy - перепады, разница

peninsula - полуостров

act - действовать, зд. править

exist - существовать

appoint - назначать

bear (bore, borne) - получать

#### Ex.1. Ответьте на вопросы:

1. What is the total area of Great Britain?
2. What is its population?
3. Where is Great Britain situated?
4. What are the main parts of Great Britain?
5. How many islands is Great Britain situated on?
6. Which is the largest island?

7. Are there long rivers in Great Britain?
8. Why is climate humid and mild?
9. What are the biggest cities of Great Britain?
10. When was the British constitution adopted?
11. Who is the head of state in Great Britain?
12. What are the Houses of Parliament?
13. What are the main fields of British industry?
14. What is the official name of Great Britain?

**Ex.2. Переведите следующие слова и выражения:**

Соединенное королевство Великобритании и Северной Ирландии; Британские острова; четыре основные части; официальное название государства; благодаря умеренному влиянию; островной климат; без резких перепадов; графство; население насчитывает; парламентская монархия; Британское законодательство; представительский орган; назначать министров; главные политические партии; основные отрасли промышленности.

**Ex.3. Заполните пропуски подходящими по смыслу словами, используя текст:**

1. The rivers seldom ... in winter.
2. ... the moderating influence of the sea Great Britain has an ... climate.
3. Great Britain is divided into 55 ... .
4. Wales is a ... in the south-west of the island of Great Britain.
5. The Welsh have their own ... .
6. Great Britain is a ... .
7. There is no written ... in Great Britain.
8. Great Britain is a ... industrial country.

**Ex.4. Закончите предложения подходящими фразами из правой колонки:**

- |   |   |
|---|---|
| 1. The United Kingdom of Great Britain and Northern Ireland ... | a) ... England, Scotland, Wales and Northern Ireland. |
| 2. The island of Great Britain is                               | b) ... the Atlantic Ocean, the Irish Sea              |

- |   |   |
|---|---|
| divided into two parts ...                      | and the North sea.                                  |
| 3. Great Britain consists of four main parts... | c) ... is situated on two large islands.            |
| 4. The country is washed by ...                 | d) ... mountainous and lowland.                     |
| 5. The main fields of industry are ...          | e) ... 63,000,000 people.                           |
| 6. The population of Great Britain is ...       | f) ... machine building, ship building, metallurgy. |

**Ex.5. Вставьте пропущенные предлоги, артикли или местоимения:**

- ... the north-west and west ... country is washed ... the Atlantic Ocean.
- ... island... Great Britain is separated ... France... the English Channel.
- Due ... ... moderating influence ... the sea Great Britain has ... insular climate.
- Great Britain consists ... four main parts.
- Great Britain is ... parliamentary monarchy.
- The Queen acts only ... ... advice ... ... ministers and Parliament.
- The Labour Party won the election ... the first time ... 1945.
- Parliament consists ... ... Houses - the House ... Lords and the House ... Commons.

**Ex.6. Подберите соответствующие значения:**

- |                        |                          |
|------------------------|--------------------------|
| 1. to be washed        | a. Уэльс                 |
| 2. British Isles       | b. Северная Ирландия     |
| 3. mountains           | c. столица               |
| 4. climate             | d. омываться             |
| 5. Northern Ireland    | e. Британские острова    |
| 6. Wales               | f. горы                  |
| 7. capital             | g. климат                |
| 8. shipbuilding        | h. монархия              |
| 9. island state        | i. крест                 |
| 10. Atlantic Ocean     | j. власть                |
| 11. European continent | k. запад                 |
| 12. monarchy           | l. европейский континент |

13.power	м. кораблестроение
14.cross	п. самолетостроение
15.west	о. островное государство
16.aircraft	р. Атлантический океан
17.Irish sea	q. Ирландское море

**Ex.7. Соответствуют ли данные предложения содержанию текста:**

1. In the west the country is washed by the North Sea.
2. The island of Great Britain is divided into 6 parts.
3. Administratively Great Britain is divided into 60 counties.
4. Great Britain has an insular climate.
5. Ireland is the largest part of Great Britain.
6. Great Britain is a parliamentary republic.
7. The power of the Queen in Great Britain is absolute.
8. Officially the head of state is the Queen (or the king).
9. The written constitution was adopted in the 17 century.
10. Parliament in Great Britain has existed since 1265 and is the eldest Parliament in the world.

**Ex.8. Составьте предложения, используя данные выражения:**

To be situated on; in addition to; the total area of; population; to be separated from; to be divided into; due to; insular climate; consist of; language; parliamentary monarchy; the powers; absolute; legislation; representative body; political party; is founded; industrial country.

**Ex.9. Переведите слова в скобках:**

1. Great Britain (находится) on two large islands.
2. The island of Great Britain (делится) into two parts: mountainous and lowland.
3. The island of Great Britain (отделяется) from France by the English Channel.
4. Great Britain (состоит) of four main parts: England, Scotland, Wales and Northern Ireland.

5. English is not the only language which people (используют) in the UK.
6. The flag of the UK (состоит) of three crosses.
7. The climate of the country is (влажный и мягкий).
8. Great Britain is a (высокоразвитая) industrial country.
9. Great Britain is a (парламентарная монархия).
10. The Labour party (была основана) in 1900.

**Ex.10. Перескажите текст, используя план:**

1. Geographical position of Great Britain and the main parts it consists of.
2. Language the English people use.
3. Great Britain is a parliamentary monarchy.
4. Parliament.
5. Political parties.
6. Industries of the UK.

## **Text B**

### **LONDON**

London is the capital of Great Britain, its political, economic and commercial centre. It is one of the largest cities in the world and the largest city in Europe. Its population is about 8 million.

London is one of the oldest and most interesting cities in the world.

Traditionally it is divided into several parts: the City, Westminster, the West End and the East End. They are very different from each other and seem to belong to different towns and epochs.

The heart of London is the City, its financial and business centre. Numerous banks, offices and firms are situated there, including the Bank of England, the Stock Exchange and the Old Bailey. Few people live here, but over a million people come to the City to work. There are some famous ancient buildings within the City. Perhaps the most striking of them is St Paul's Cathedral, the greatest of English churches. It was built in the 17th century by Sir Christopher Wren. The Tower of London was founded by Julius Caesar and in 1066 rebuilt by William the Conqueror. It was used as a fortress, a royal palace and a prison. Now it is a museum.

Westminster is the historic, the governmental part of London.

Westminster Abbey has more historic associations than any other building in Britain. Nearly all English kings and queens have been crowned here. Many outstanding statesmen, scientists, writers, poets and painters are buried here: Newton, Darwin, Chaucer, Dickens, Tennyson, Kipling, etc.

Across the road from Westminster Abbey is Westminster Palace, or the Houses of Parliament, the seat of the British Parliament. The Clock Tower of the Houses of Parliament is famous for its big hour bell, known as "Big Ben".

Buckingham Palace is the official residence of the Queen.

The West End is the richest and most beautiful part of London. It is the symbol of wealth and luxury. The best hotels, shops, restaurants, clubs, and theatres are situated there. There are splendid houses and lovely gardens belonging to wealthy people.

Trafalgar Square is the geographical centre of London. It was named in memory of Admiral Nelson's victory in the battle of Trafalgar in 1805. The tall Nelson's Column stands in the middle of the square.

On the north side of Trafalgar Square is the National Gallery and the National Portrait Gallery. Not far away is the British Museum — the biggest museum in London. It contains a priceless collection of ancient manuscripts, coins, sculptures, etc, and is famous for its library.

The East End is the poorest district of London. There are a lot of factories, workshops and docks here. The streets are narrow, the buildings are unimpressive. The East End is densely populated by working class families.

## Names

The Bank of England - Английский банк	Kipling - Киплинг
The Stock Exchange - Лондонская фондовая биржа	Westminster Palace (the Houses of Parliament) - Вестминстерский дворец (здание английского парламента)
The Old Bailey - Центральный уголовный суд, находящийся в Олд-Бейли	Big Ben - Биг Бен, Большой Бен (колокол часов-курантов на здании парламента, бой которых передается ежедневно по радио как сигнал точного времени)
St Paul's Cathedral - собор святого Павла (главный собор англиканской церкви)	Buckingham Palace - Букингемский дворец (главная королевская резиденция в Лондоне)
Sir Christopher Wren - Кристофер Рен	Trafalgar Square - Трафальгарская площадь
The Tower of London - Лондонский Тауэр	Nelson's Column - колонна Нельсона
Julius Caesar - Юлий Цезарь	The National Gallery - Национальная галерея (крупнейшее в Великобритании собрание картин)
William the Conqueror - Вильгельм завоеватель, Вильгельм I (первый король из норманнов в Англии)	The National Portrait Gallery - Национальная портретная галерея
Westminster Abbey - Вестминстерское аббатство	The British Museum - Британский музей (один из крупнейших в мире)
Newton - Ньютон	Dickens - Диккенс
Darwin - Дарвин	Tennyson - Теннисон
Chaucer - Чосер	

## Vocabulary

commercial - торговый  
population - население  
to belong - принадлежать



epoch - эпоха  
financial - финансовый  
numerous - многочисленный  
firm - фирма  
ancient - древний  
striking - поразительный, замечательный  
church - церковь  
to found - основывать  
to rebuild - перестраивать  
fortress - крепость  
royal - королевский  
palace - дворец  
prison - тюрьма  
governmental - правительственный  
association - ассоциация  
to crown - короновать  
coin - монета  
sculpture - скульптура  
to be famous for - быть знаменитым, славиться  
workshop - мастерская  
outstanding - выдающийся  
statesman - государственный деятель  
scientist - ученый  
painter - художник  
to bury - хоронить  
tower - башня  
official residence - официальная резиденция  
wealth - богатство  
wealthy - богатый  
symbol - символ  
luxury - роскошь  
restaurant - ресторан  
splendid - великолепный  
in memory of - в память о  
column - колонна  
to contain - содержать  
priceless - бесценный  
manuscript - рукопись  
narrow - узкий  
unimpressive - невпечатляющий, невыразительный  
densely - густо

to populate - населять

**Ex.1. Ответьте на вопросы:**

1. Is London the largest city in the world?
2. What's the population of London?
3. Traditionally London is divided into several parts. Can you name them?
4. What do you know about the City?
5. Who built St Paul's Cathedral?
6. Who founded the Tower of London? When was it rebuilt?
7. What is the historic, the governmental part of London?
8. What building has more historic associations than any other building in London?
9. What is Big Ben?
10. Can you describe Trafalgar Square?
11. Where do the working people of London live?
12. What are the most famous London museums and art galleries?

**Ex.2. Переведите на русский язык слова и словосочетания:**

Commercial centre; capital; divide; different; to belong to; epochs; business centre; numerous; include; ancient; perhaps; the most striking; was founded; rebuilt; fortress; prison; the governmental part; historic associations; crown; to bury; big hour bell; residence; symbol of wealth and luxury; splendid houses.

**Ex.3. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Торговый центр; самый большой город; один из самых старых городов; принадлежать к различным эпохам; многочисленные фирмы; самый замечательный; крепость; королевский дворец; правительственная часть; выдающиеся государственные деятели; официальная резиденция; великолепные дома; принадлежать богатым людям.

**Ex.4. Закончите предложения:**

1. London is one of the largest cities in the world and ... ..
2. Its population is about ... ..
3. Traditionally it is divided into several parts: ... ..
4. The heart of London is ...
5. The Tower of London was founded by ... ..
6. Buckingham Palace is the ... ..

**Ex.5. Поставьте следующие предложения в вопросительную и отрицательную форму:**

1. London is one of the oldest and most interesting cities in the world.
2. There are some famous ancient buildings within the city.
3. The Tower of London was founded by Julius Caesar.
4. The tall Nelson's Column stands in the middle of the square.
5. The British Museum contains a priceless collection.

**Ex.6. Составьте предложения, используя данные словосочетания:**

1. Economic; and; London; the capital; Great Britain; is; its; of; political; centre.
2. Parts; traditionally; it; is; into; several; divided.
3. Centre; financial; the heart; of; is; the City; London; its.
4. The governmental; Westminster; the Historic; is; part; of London.
5. Queen; the; the official; Buckingham; Palace; is; residence; of.

**Ex.7. Соответствуют ли данные предложения содержанию текста:**

1. The population of London is about 8 million.
2. Traditionally London is divided into 8 parts.
3. The heart of London is the East End.
4. The City is the historic, the governmental part of London.
5. Buckingham Palace is the official residence of the Queen.
6. Trafalgar Square is the geographical centre of London.

**Ex.8. Переведите слова в скобках на английский язык:**

1. London is one of (самых старейших и самых интересных) cities in the world.
2. The heart of London is the City, (его финансовый и деловой центр).
3. The Tower of London (был основан) by Julius Caesar.
4. Westminster is the historic, (правительственная часть) of London.
5. The West End is the symbol of (богатства и роскоши).
6. The British Museum contains a (бесценную коллекцию древних рукописей, монет, скульптур).

**Ex.9. Составьте план текста.**

**Ex.10. Перескажите текст.**

## Text C

### THE USA

The United States of America is the fourth largest country in the world (after Russia, Canada and China). It occupies the southern part of North America and stretches from the Pacific to the Atlantic Ocean. It also includes Alaska in the north and Hawaii in the Pacific Ocean.

The total area of the country is about nine and a half million square kilometers. The USA borders on Canada in the north and on Mexico in the south. It also has a sea-boarder with Russia.

The USA is made up of 50 states and the District of Columbia, a special federal area where the capital of the country, Washington, is situated. The population of the country is about 317 million.

If we look at the map of the USA, we can see lowlands and mountains. The highest mountains are the Rocky Mountains, the Cordillera and the Sierra Nevada. The highest peak is Mount McKinley which is located in Alaska.

America's largest rivers are the Mississippi, the Missouri, the Rio Grande and the Columbia. The Great Lakes on the border with Canada are the largest and deepest in the USA.

The climate of the country varies greatly. The coldest regions are in the north. The climate of Alaska is arctic. The climate of the central part is continental. The south has a subtropical climate. Hot winds blowing from the Gulf of Mexico often bring typhoons. The climate along the Pacific coast is much warmer than that of the Atlantic coast.

The USA is a highly-developed industrial country. It is the world's leading producer of copper and oil and the world's second producer of iron ore and coal. Among the most important manufacturing industries are aircraft, cars, textiles, radio and television sets, armaments, furniture and paper.

Though mainly European and African in origin, Americans are made up from nearly all races and nations, including Chinese and native Americans.

The largest cities are: New York, Los Angeles, Chicago, Philadelphia, Detroit, San-Francisco, Washington and others.

The United States is a federal union of 50 states, each of which has its own government. The seat of central (federal) government is Washington, DC. According to the US Constitution the powers of the government are divided into 3 branches: the executive, headed by the President, the legislative, exercised by the Congress, and the judicial. The Congress consists of the Senate and the House of Representatives.

There are two main political parties in the USA: the Republican and the Democratic.

## Names

The United States of America - Соединенные Штаты Америки  
 Russia - Россия  
 Canada - Канада  
 China - Китай  
 North America - Северная Америка  
 The Pacific Ocean - Тихий океан  
 The Atlantic Ocean - Атлантический океан  
 Alaska - Аляска  
 Hawaii - Гавайи  
 Mexico - Мексика  
 District of Columbia - округ Колумбия  
 Washington - Вашингтон  
 The Rocky Mountains - Скалистые горы  
 The Cordillera - Кордильеры  
 The Sierra Nevada - Сьерра-Невада  
 Mount McKinley - гора Мак-Кинли  
 The Mississippi - Миссисипи  
 The Missouri - Миссури  
 The Rio Grande - Рио-Гранде  
 The Columbia - Колумбия  
 The Great Lakes - Великие озера (5 озер: Мичиган, Онтарио, Гурон, Верхнее озеро и Эри)  
 The Gulf of Mexico - Мексиканский залив  
 Florida - Флорида  
 Los Angeles - Лос-Анджелес  
 Chicago - Чикаго  
 Philadelphia - Филадельфия  
 Detroit - Детройт  
 San-Francisco - Сан-Франциско  
 The Congress – Конгресс  
 The Senate - Сенат  
 The House of Representatives - Палата представителей  
 The Republican and the Democratic parties - Республиканская и Демократическая партии

## Vocabulary

to occupy - занимать  
 southern - южный  
 to stretch - тянуться, простираться  
 to include - включать  
 total area - общая площадь

to border on - граничить с  
 sea-border - морская граница  
 subtropical - субтропический  
 typhoon - тайфун  
 coast - побережье  
 highly-developed - высокоразвитый  
 copper - медь  
 oil - нефть  
 iron ore - железная руда  
 coal - каменный уголь  
 manufacturing - промышленный  
 aircraft - самолеты, самолетостроение  
 textile - текстиль  
 federal - федеральный  
 lowlands - низменность, долина, низина  
 to be located - находиться, быть расположенным  
 to vary - меняться, варьировать  
 arctic - арктический  
 continental - континентальный  
 armament - вооружение  
 origin - происхождение  
 Chinese - китайский; китаец  
 according to - в соответствии с, согласно  
 powers - полномочия  
 branch - ветвь  
 the executive - исполнительная власть  
 the legislative - законодательная власть  
 the judicial - судебная власть

### **Ex. 1. Ответьте на вопросы:**

1. Where is the USA situated?
2. What's the total area of the country?
3. What countries does the USA border on?
4. How many states does the USA consist of?
5. What is the capital of the country?
6. Can you name any other cities in the USA?
7. What is the population of the United States?
8. What mountains in the USA do you know?
9. What are the largest rivers?
10. What can you say about the climate of the country?
11. What does the USA produce?
12. According to the US Constitution the powers of the government are divided into 3 branches. What are they?

13. How many chambers does the Congress of the USA consist?
14. What are the main political parties in the USA?
15. Who is the US president now?

**Ех. 2. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Четвертая по величине страна в мире; общая площадь страны; имеет морскую границу; самое большое и самое глубокое озеро; высоко развитая промышленная страна; железная руда и уголь; согласно конституции США; исполнительная, законодательная и судебная власть; конгресс состоит из Сената и Палаты Представителей.

**Ех. 3. Поставьте следующие предложения в вопросительную и отрицательную форму:**

1. The USA has a sea-border with Russia.
2. The USA is made up of 50 states and the District of Columbia.
3. We can see lowlands and mountains.
4. The climate of the country varies greatly.
5. The coldest regions are in the north.
6. The climate of Alaska is arctic.
7. The Congress consists of the Senate and the House of Representatives.

**Ех. 4. Составьте предложения из следующих слов и выражений:**

1. On; South; the; the USA; in; on; Mexico; borders; in; the north; and; on Canada.
2. Columbia; 50 states; District; of; the USA; is; made up; and; the.
3. Alaska; McKinley; is; in; the; peak; highest; Mount; which; located.
4. Country; a; is; industrial; USA; the; developed; highly.
5. Government; the; Washington, D.C.; is; the; central; seat; of.

**Ех. 5. Составьте план текста.**

**Ех. 6. Расскажите, что вы знаете о США (географическом положении, климате, промышленности страны и т.д.)**

## Text D

### WASHINGTON, DC

Washington is the capital of the United States of America. It is situated in the District of Columbia and is like no other city of the USA. Its population is over 602000. It's the world's largest one-industry city. And that industry is government. The White house, where the US President lives and works, the Capitol, the home of the US Congress, and the Supreme Court, are all in Washington.

Washington was named after the first US President George Washington. He selected the place for the capital and Pierre L'Enfant, a French engineer, designed the city.

Washington was first settled in 1790 and since 1800 it has been the Federal capital.

Washington is one of the most beautiful and unusual cities in the United States. In the very center of it rises the huge dome of the Capitol – a big white dome standing on a circle of pillars. The 535 members of the Congress meet here to discuss the nation's affairs. It's easy to get lost in this huge building, full of paintings and statues.

Not far from the Capitol is the Library of Congress, the largest library in the States. It contains more than 13 million books, more than 19 million manuscripts, including the personal papers of the US presidents.

The White House is the official residence of the US President. He works in the Oval Office.

One can hardly find a park, a square or an open area in Washington without a monument or a memorial. The most impressive and the best-known ones are the Lincoln Memorial and the Washington Monument.

There are some important museums in Washington where you can see different kinds of things: famous paintings and sculptures, the dresses of Presidents' wives, the original of the Declaration of Independence, the largest blue diamond in the world, etc.

There are 5 universities in Washington.

There are no skyscrapers in Washington, because they would hide city's many monuments from view. No building in the city may be more than 40 metres tall.

Thousands of tourists visit Washington every day. People from all parts of the United States come to see their capital.

## Names

Washington - ВАШИНГТОН

The District of Columbia - округ Колумбия

The White House - Белый Дом (резиденция президента США)

The Capitol - Капитолий (здание конгресса США)



The Congress - Конгресс

The Supreme court - Верховный суд

Pierre L' Enfant - Пьер Ланфан

The Library of Congress - Библиотека конгресса

Oval Office - Овальный кабинет (рабочий кабинет президента США)

The Lincoln Memorial - памятник Линкольну

The Washington Monument - обелиск в честь Джорджа Вашингтона

The Declaration of Independence - Декларация независимости (принята 4 июля 1776 года вторым континентальным конгрессом в период войны за независимость Северной Америки (1775 - 1783); провозглашала отделение колоний от метрополий самостоятельного государства - США)

### Vocabulary

to design - проектировать, создавать.

to settle - поселять, заселять.

huge - огромный, колоссальный.

dome - купол.

circle - круг.

pillar - столб, колонна.

affair - дело.

to get lost - заблудиться.

to contain - содержать.

manuscript - рукопись.

personal - личные бумаги.

official residence - официальная резиденция.

impressive - производящий впечатления, впечатляющий.

original - оригинал.

diamond - алмаз, бриллиант.

skyscraper - небоскреб.

### Ex. 1. Ответьте на вопросы:

1. Where is Washington situated?
2. Is Washington a typical American city?
3. It's the world's largest one-industry city, isn't it? What kind of industry is it?
4. What important government buildings are situated in Washington?
5. Where does the US president live and work?
6. Who selected the place for the capital of the USA?
7. Is there a monument to George Washington in the city?
8. Who designed the capital of the USA?
9. When was Washington first settled?
10. What places of interest in Washington do you know?

11. How many universities are there in Washington?
12. Why aren't there any skyscrapers in Washington?

**Ex. 2. Переведите следующие выражения:**

Расположен в округе Колумбия; не похож ни на один город США; президент живет и работает в Белом доме; Верховный суд; Вашингтон был назван в честь первого президента; Французский инженер спроектировал город; Вашингтон был впервые заселен в 1790; огромный купол Капитолия; самая большая библиотека в Штатах; самый впечатляющий - это памятник Линкольну; оригинал Декларации независимости; в Вашингтоне нет небоскребов.

**Ex. 3. Поставьте предложения в вопросительную и отрицательную форму:**

1. Washington is situated in the District of Columbia.
2. The US President lives and works in the White House.
3. Washington was named after the first US President George Washington.
4. The Library of Congress contains more than 13 million books.
5. Washington was first settled in 1790.

**Ex. 4. Составьте предложения из следующих слов и выражений:**

1. The United States; beautiful; one of; unusual; is; the most; and; in; cities; Washington.
2. Oval; works; in; the; he; office.
3. The; US President; is; the; White; House; residence; official; of.
4. No; there; skyscrapers; are; Washington; in.
5. Washington; every day; visit; thousands; tourists; of.

**Ex. 5. Определите, какие утверждения верны (T), а какие нет (F). Исправьте неверные:**

1. Washington, the capital of the United States of America, is situated in Virginia.
2. Washington is the world's largest one-industry city.
3. Washington was named after Abraham Lincoln.
4. George Washington, the first US President, designed the city.
5. There are 10 universities in Washington.
6. There are many skyscrapers in Washington.

**Ex. 6. Перескажите текст.**

## UNIT 5

### Text A

#### ALFRED NOBEL – A MAN OF CONTRASTS

Alfred Nobel, the great Swedish inventor and industrialist, was a man of many contrasts. He was the son of a bankrupt, but became a millionaire; a scientist with a love of literature, an industrialist who managed to remain an idealist. He made a fortune but lived a simple life, and although cheerful in company he was often sad in private. A lover of mankind, he never had a wife or family to love him. A patriotic son of his native land, he died alone on foreign soil.

He invented a new explosive, dynamite, to improve the peacetime industries of mining and road building, but saw it used as a weapon of war to kill and injure his fellow men. During his useful life he often felt he was useless: «Alfred Nobel», he once wrote of himself, «ought to have been put to death by a kind doctor as soon as, with a cry, he entered life». World-famous for his works he was never personally well known, for throughout his life he avoided publicity. «I do not see» he once said, «that I have deserved any fame and I have no taste for it», but since his death, his name has brought fame and glory to others.

He was born in Stockholm on October 21, 1833 but moved to Russia with his parents in 1842, where his father, Immanuel, made a strong position for himself in the engineering industry. Immanuel Nobel invented the landmine and made a lot of money from government orders for it during the Crimean War, but went bankrupt soon after. Most of the family returned to Sweden in 1859, where Alfred rejoined them in 1863, beginning his own study of explosives in his father's laboratory. He had never been to school or university but had studied privately and by the time he was twenty was a skilful chemist and excellent linguist, speaking Swedish, Russian, German, French and English.

Like his father, Alfred Nobel was imaginative and inventive but he had better luck in business and showed more financial sense. He was quick to see industrial openings for his scientific inventions and built up over 80 companies in 20 different countries. Indeed his greatness lays in his outstanding ability to combine the qualities of an original scientist with those of a forward-looking industrialist. But Nobel's main concern was never with making money or even with making scientific discoveries.

Seldom happy he was always searching for a meaning of life and from his youth had taken a serious interest in literature and philosophy. Perhaps because he could not find ordinary human love — he never married — he came to care deeply about the whole of mankind. He was always generous to the poor: «I'd rather take care of the stomachs of the living than the glory of the dead in the form of stone memorials», he once said. His greatest wish, however, was to see an end to wars and thus peace between nations, and he spent much time and money

working for this cause until his death, in Italy in 1896. His famous will in which he left money to provide prizes for outstanding works in Physics, Chemistry, Physiology, Medicine, Literature and Peace is a memorial to his interests and ideals. And so, the man who felt he should have died at birth is remembered and respected long after his death.

### Vocabulary

inventor - изобретатель  
 industrialist - промышленник  
 cheerful - жизнерадостный  
 soil - земля  
 injure - ранить  
 useless - бесполезный  
 deserve - заслужить  
 fame - слава  
 glory - гордость  
 sense - чувство  
 concern - интерес, забота, зд. цель  
 generous - щедрый  
 cause - дело  
 will - воля

### Ex.1. Ответьте на вопросы:

1. Was Alfred Nobel the son of a millionaire?
2. How did he make a fortune?
3. What did Alfred invent?
4. Did he have a family?
5. Was Alfred personally well known?
6. When and where was he born?
7. Why did Alfred move to Russia?
8. Did Immanuel Nobel invent the landmine or dynamite?
9. What kind of person was Alfred?
10. What was his greatest wish?

### Ex.2. Переведите на русский язык слова и словосочетания:

Great inventor; manage to remain; make a fortune; cheerful in company; native land; foreign soil; mining; fellow men; useless; publicity; deserve; fame; glory; strong position; order; skilful chemist; greatness; ability; concern; generous; stomach; cause; will; respect.

**Ех.3. Переведите на английский язык слова и словосочетания:**

Жизнерадостный; промышленник; разбогатеть; чужая земля; улучшить; ранить соотечественников; бесполезный; всемирно-известный; избегать гласности; заслужить славу; прочная позиция; превосходный лингвист; изобретательный; главная цель; щедрый для бедных; уважать.

**Ех.4. Подберите антонимы:**

Bankrupt; foreign soil; manage; make a fortune; millionaire; simple life; sad; native land; useful life; world-famous; strong position; excellent linguist; skilful chemist; luck; generous; cheerful; useless; respect.

**Ех.5. Соответствуют ли данные предложения содержанию текста:**

1. Alfred Nobel's father went bankrupt before the birth of Alfred.
2. Alfred's father was a successful inventor.
3. Alfred studied chemistry.
4. Alfred knew science but was a poor linguist.
5. Immanuel Nobel was quick to see industrial openings for his scientific inventions and built up over eighty companies in different countries.
6. Throughout his life Alfred Nobel avoided publicity.
7. Nobel's inventions made him a millionaire.
8. He was interested in literature and philosophy.
9. Alfred Nobel died in Paris in 1896.
10. After Alfred Nobel's death his name brought him fame and glory.

**Ех.6. Выделите пять основных идей текста.****Ех.7. Перескажите текст.****Text B****ALBERT EINSTEIN**

Albert Einstein is known all over the world as a brilliant theoretical physicist and the founder of the theory of relativity. He is perhaps the greatest scientist of the 20th century. Some of his ideas made possible the atomic bomb, as well as television and other inventions.

He was born in 1879 in a small German town. The Einstein family soon moved to Munich, where Albert went to school. Neither his parents, nor his school teachers thought much of his mental abilities. His uncle often joked: "Not everybody is born to become a professor."

In 1895 Albert failed the entrance examination to a technical college in Zurich. A year later, however, he managed to pass the exam and entered the college.

After graduating from the college, Einstein started to work at the Swiss Patent Office in Bern. In 1905 he wrote a short article in a science magazine. This was his “Special Theory of Relativity”, which gave the world the most famous equation relating mass and energy ( $E = mc^2$ ), the basis of atomic energy.

Later, he became a professor in several European universities and in 1914 moved to Berlin as a member of the Prussian Academy of Sciences. After ten years of hard work he created his “General Theory of Relativity”.

In 1921 Einstein received the Nobel Prize for Physics.

A Jew, and a pacifist, he was attacked by the Nazis, and when Hitler came to power in 1933 he decided to settle in the United States.

In 1939 Albert Einstein wrote a letter to President Roosevelt, at the request of several prominent physicists, outlining the military potential of nuclear energy and the dangers of a Nazi lead in this field. His letter greatly influenced the decision to build an atomic bomb, though he took no part in the Manhattan Project. After the war he spoke out passionately against nuclear weapons and repression.

Einstein died in 1955. The artificial element einsteinium has been named in his honour.

### Names

Albert Einstein - Альберт Эйнштейн

Nobel Prize - Нобелевская премия

Munich - Мюнхен

Roosevelt - Рузвельт (президент США с 1933 по 1945г.)

Zurich - Цюрих

Manhattan Project - Манхэттенский проект (кодовое название работы по созданию атомной бомбы в США в период второй мировой войны)

Bern - Берн

Berlin - Берлин

The Prussian Academy of Sciences -  
Прусская академия наук

Hitler - Гитлер

## Vocabulary

theoretical physicist - физик-теоретик  
 theory of relativity - теория относительности  
 atomic bomb - атомная бомба .  
 invention - изобретение  
 mental abilities - умственные способности  
 to fail examinations - провалиться на экзаменах  
 patent office - патентное бюро  
 equation - уравнение  
 to relate - связывать, устанавливать отношение  
 mass - масса  
 energy - энергия  
 basis - основа, основание  
 Jew - еврей  
 pacifist - пацифист  
 Nazi - нацист  
 to come to power - прийти к власти  
 to settle - поселиться  
 at the request - по просьбе  
 prominent - видный, выдающийся  
 to outline - обрисовать, наметить в общих чертах  
 military potential - военный потенциал  
 passionately - страстно  
 nuclear - ядерный  
 lead - ведущее, первое место  
 to influence - оказывать влияние  
 to speak out against - выступить против  
 nuclear weapons - ядерное оружие  
 repression - репрессия  
 artificial - искусственный  
 element - элемент  
 einsteinium - эйнштейний  
 in smb's honour - в чью-либо честь

### Ex.1. Ответьте на вопросы:

1. Why is Einstein generally thought of as being the greatest scientist of the 20th century?
2. When and where was he born?
3. What did his parents and relatives think of his mental abilities?
4. Did he manage to pass his entrance exams at once?
5. Where did Einstein work after graduating from the college?
6. When did he create his 'Special Theory of Relativity'? Why is it considered

- to be one of the greatest discoveries ever made?
7. How long did it take him to form his 'General Theory of Relativity\*?
  8. Why did Einstein leave Germany?
  9. Why did he write a letter to President Roosevelt? What was it about?
  10. Did Einstein take part in the Manhattan Project?
  11. What do you know about nuclear weapons? Why are they dangerous?
  12. What other outstanding physicists do you know?

**Ex.2. Переведите на русский язык слова и словосочетания:**

Brilliant theoretical physicist; the theory of relativity; perhaps; possible; invention; mental abilities; entrance examination; manage; enter; after graduating; famous equation; the basis of atomic energy; hard work; to create; come to power; to settle; at the request; influence; honour.

**Ex.3. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Ядерное оружие; блестящий физик-теоретик; основатель теории относительности; изобретения; умственные способности; провалить вступительный экзамен; сдать экзамен; короткая статья; научный журнал; известное уравнение; Нобелевская премия; поселиться в США; по просьбе; выступить против; ядерное оружие и репрессии.

**Ex.4. Закончите предложения подходящими по смыслу словосочетаниями:**

- |  |                              |
|--|------------------------------|
| 1. Albert Einstein is known all over the world as the founder of | a. computer machines.        |
|  | b. railways.                 |
|  | c. the theory of relativity. |
| 2. Some of his ideas made possible                               | a. pocket calculator.        |
|  | b. the atomic bomb.          |
|  | c. refrigerator.             |
| 3. He was born in 1879 in  | a. Russia.                   |
|  | b. Zurich.                   |
|  | c. a small German town.      |
| 4. In 1914 Einstein moved to                                     | a. Berlin.                   |
|  | b. Boston.                   |
|  | c. Moscow.                   |
| 5. In 1921 he received the Nobel Prize for                       | a. Mathematics.              |
|  | b. Physics.                  |
|  | c. Literature.               |



**Ex.5. Поставьте следующие предложения в вопросительную и отрицательную форму:**

1. Some of Einstein's ideas made possible the atomic bomb.
2. He was born in 1879 in a small German town.
3. He is perhaps the greatest scientist of the 20<sup>th</sup> century.
4. Einstein was attacked by the Nazis.
5. He died in 1955.

**Ex.6. Составьте предложения, используя данные слова и словосочетания:**

1. Bomb; made; some; ideas; of; possible; his; the; atomic.
2. Zurich; Albert; the entrance; to; a; college; in 1895; failed; examination; technical; in.
3. Hard; after; work; ten years; he; of; created; Relativity; General; of; theory; his.
4. Nobel; for Physics; in 1921; received; Einstein; the; Prize.
5. Against; repression; after the war; passionately; he; nuclear; spoke out; weapons; and.

**Ex.7. Расскажите, что вы знаете о Альберте Эйнштейне.**

**Text C**

**ANDREI SAKHAROV**

Andrei Dmitrievich Sakharov, an outstanding scientist and public figure, was born on the 21st of May, 1921, into a family of teachers. He graduated from Moscow University in 1942. In 1947 he defended his thesis for the degree of Candidate of Science. In 1953 he defended his Doctorate thesis and was elected member of the Academy of Sciences.

Sakharov played a decisive role in developing the Soviet hydrogen bomb. While working on the bomb he came to the conclusion that any atomic and nuclear weapons should be banned.

In 1966 he took part in his first human rights demonstration, a one-minute silent protest in Pushkin Square. A year later, he wrote a letter to Communist Party leader Leonid Brezhnev defending imprisoned dissidents.

He fought courageously for human rights in the former USSR and in 1975 he was awarded the Nobel Peace Prize.

His international repute as a scientist kept him out of jail, but in 1980 he was deprived of all his titles and orders and exiled to the city of Gorky. In Gorky he continued to work for peace, justice and human rights.

It was Michail Gorbachev who helped A. Sakharov to return to Moscow. He was given back all his titles and 3 years later he was elected deputy of the Supreme Soviet.

Sakharov died in 1989. He is remembered by everybody as an outstanding humanist, one of the best representatives of humankind who could teach and inspire and who foresaw the changes that are taking place now.

### *Names*

Andrei Dmitrievich Sakharov -	Nobel Peace Prize - Нобелевская
Андрей Дмитриевич Сахаров	премия мира
the Academy of Sciences - Академия наук	Gorky - г. Горький

### *Vocabulary*

outstanding - выдающийся

public figure - общественный деятель

to defend one's thesis - защищать диссертацию

degree of Candidate of Science - ученая степень кандидата наук

atomic and nuclear weapons - атомное и ядерное оружие

jail - тюрьма

to ban - запрещать

title - зд. титул, звание

protest - протест

representative - представитель

to exile - ссылать, изгонять

to inspire - вдохновлять, воодушевлять

to allow - позволять, разрешать

courageously - мужественно

to award - награждать, присуждать

to elect - выбирать, избирать

decisive - решающий

develop - зд. разрабатывать

hydrogen bomb - водородная бомба

human rights - права человека

to defend - защищать

dissident - диссидент

former - бывший

repute - репутация

to imprison - заключать в тюрьму, лишать свободы

justice - правосудие

humanist - гуманист

to smb's credit - благодаря кому-либо

humankind - человечество

to foresee - предвидеть

### **Ex.1. Ответьте на вопросы:**

1. When was Andrei Sakharov born?
2. What were his parents?
3. What university did he graduate from? When?
4. What is Sakharov famous for as a scientist?
5. When did he defend his Doctorate thesis?
6. What conclusion did he come to while working on the bomb?
7. When did he take part in his first human rights demonstration?
8. What kind of prize did he receive?
9. Why was he exiled to Gorky?
10. Who helped him to come back to Moscow?
11. Was he given back all his titles?
12. Why is Sakharov known all over the world?

### **Ex.2. Переведите на русский язык слова и словосочетания:**

An outstanding scientist; public figure; graduate from; defend member; a decisive role; hydrogen bomb; come to the conclusion; atomic weapon; nuclear reactor; to ban; to defend; imprisoned dissidents; to fight for human rights; to fight courageously; to deprive of all titles; to exile to; justice.

### **Ex.3. Подберите соответствующие значения:**

- |                  |                         |
|------------------|-------------------------|
| 1. graduate from | a. защищать             |
| 2. thesis        | b. предвидеть           |
| 3. defend        | c. закончить            |
| 4. decisive role | d. диссертация          |
| 5. hydrogen bomb | e. решающая роль        |
| 6. ban           | f. заключенный в тюрьму |

7. imprisoned	g. водородная бомба
8. award	h. запрещать
9. jail	l. лишать
10. deprive	m. тюрьма
11. humankind	n. награждать
12. inspire	o. вдохновлять
13. foresee	p. человечество

#### **Ex.4. Переведите слова в скобках:**

1. A.D. Sakharov (выдающийся учёный и общественный деятель) was born on the 21 of May, 1921.
2. He (закончил) Moscow University in 1942.
3. Sakharov played a (решающую роль) in developing the Soviet (водородную бомбу).
4. He fought (мужественно) for human rights in the former USSR
5. In Gorky he continued to work (за мир, справедливость и права человека).

#### **Ex.5. Поставьте предложения в вопросительную и отрицательную форму:**

1. A. D. Sakharov was born on the 21 of May, 1921.
2. He played a decisive role in developing the Soviet hydrogen bomb.
3. In 1975 he was awarded the Nobel Peace Prize.
4. In Gorky he continued to work for peace, justice and human rights.

#### **Ex. 6. Расскажите, что вы знаете о А.Д.Сахарове.**

## **UNIT 6**

### **Text A**

#### **ECOLOGICAL PROBLEMS**

Since ancient times Nature has served Man, being the source of his life. For thousands of years people lived in harmony with environment and it seemed to them that natural riches were unlimited. But with the development of civilization man's interference in nature began to increase.

Large cities with thousands of smoky industrial enterprises appear all over the world today. The by-products of their activity pollute the air we breathe, the water we drink, the land we grow grain and vegetables. Every year world industry pollutes the atmosphere with about 1000 million tons of dust and other harmful substances. Many cities suffer from smog. Vast forests are cut and burn in fire. Their disappearance upsets the oxygen balance. As a result some rare species of

animals, birds, fish and plants disappear forever, a number of rivers and lakes dry up.

The pollution of air and the world's ocean, destruction of the ozone layer is the result of man's careless interaction with nature, a sign of ecological crises.

The most horrible ecological disaster befell Belarus and Ukraine, their people in the result of the Chernobyl tragedy in April 1986. About 18 per cent of the territory of Belarus was polluted with radioactive substances. A great damage has been done to the republics' agriculture, forests and people's health. The consequences of this explosion at the atomic power-station are tragic for the Belarusian and Ukrainian nations.

Environmental protection is a universal concern. That is why serious measures to create a system of ecological security should be taken.

Some progress has been already made in this direction. As many as 159 countries — members of the UNO — have set up environmental protection agencies. Numerous conferences have been held by these agencies to discuss questions of ecologically poor regions including the Aral Sea, the South Urals, Kuzbass, Donbass, Semipalatinsk and Chernobyl. The international environmental research centre has been set up on Lake Baikal. The international organization Greenpeace is also doing much to preserve the environment. But these are only the initial steps and they must be carried forward to protect nature, to save life on the planet not only for the sake of the present but also for the future generations.

### **Vocabulary:**

nature - природа  
 source - источник  
 environment - окружающая среда  
 interference - вмешательство  
 interaction - взаимодействие  
 increase - возрастаять  
 by-product - побочный продукт  
 power-station - электростанция  
 pollute - загрязнять  
 breathe - дышать  
 harmful - вредный  
 careless - небрежный  
 substance - вещество  
 upset - нарушать  
 oxygen - кислород  
 prevent - предотвращать  
 dry up - высыхать  
 rare - редкий  
 animal - животное  
 destruction - разрушение

disaster - несчастье, беда  
 damage - вред  
 consequence - следствие  
 explosion - взрыв  
 protection - защита, охрана  
 concern - забота  
 security - безопасность  
 research centre - научно-исследовательский институт  
 save - спасать  
 measure - мера  
 to take measures - принимать меры  
 to take care of - заботиться  
 carry forward - проводить, продолжать дальше

### Ex. 1. Ответьте на вопросы:

1. Is nature the source of people's life?
2. For thousands of years people lived in harmony with nature, didn't they?
3. Has man's interference in nature increased with the development of civilization?  
What has it led to?
4. Why did some species of animals, birds, plants disappear from the Earth?
5. What is the result of man's careless interaction with nature?
6. What do you know about the Chernobyl ecological disaster?
7. What are the consequences of this tragedy?
8. Environmental protection is a universal concern of everyone, isn't it?
9. Has anything been done to solve ecological problems?
10. Is international cooperation necessary to create a system of ecological security?  
Why do you think so?

### Ex. 2. Составьте предложения, используя выделенные слова и словосочетания:

1. **The protection of nature** is a subject that concerns everybody.
2. **Environmental problems** are very acute in densely populated regions.
3. **Air pollution** in this city is the worst.
4. Many cities **suffer from smog**.
5. Urgent measures to protect environment **should be taken**.

### Ex. 3. Спросите своего друга:

- знает ли он что-либо об экологических проблемах нашей республики;
- что является источником загрязнения окружающей среды;

- какие последствия небрежного вмешательства человека в природу можно наблюдать сейчас;
- что он знает об экологической обстановке в зоне Чернобыльской аварии;
- какова экологическая обстановка в районе Аральского моря (Белого моря, озера Байкал, Кузбасса, Донбасса).
- почему охрана окружающей среды является всеобщим делом;
- какие меры принимаются для предотвращения экологической катастрофы.

#### **Ex.4. Переведите предложения:**

1. Взаимодействие человека и природы неотделимо от самой истории человечества.
2. Экологические изменения - одна из важнейших проблем, с которой столкнулось человечество.
3. Загрязнение воды и воздуха является результатом небрежного отношения человека к природе.
4. Планета Земля наш общий дом, поэтому охрана окружающей среды должна стать нашей общей заботой.
5. Международное сообщество предпринимает конкретные меры для охраны природы.

#### **Ex.5. Переведите текст и ответьте на вопросы:**

### **CONTROL OF POLLUTION IN GREAT BRITAIN**

Government measures to control environmental pollution are long established and are complimentary to the planning system to conserve the country's heritage. The Control of Pollution Act 1974, which applies to England, Scotland and Wales, sets out a wide range of powers and duties for local authorities, including control over wastes, air and water pollution and noise. It contains important provisions on the release of information on environmental conditions to the public.

The Act also increases the penalties for a large number of pollution offences. The provisions relating to noise and air pollution are fully in force, as are a substantial number of those relating to waste on land. Similar legislation applies in Northern Ireland.

1. What are the government measures to control environmental pollution in Great Britain?
2. Are there any similar measures taken in our country?

**Ex.6. Прочитайте текст и озаглавьте его:**

In the past wars left their scars only where they were waged and did not affect the atmosphere or the World Ocean. The impact of nuclear weapons is global and will affect land, air and sea environment. Nuclear explosions on the ground will cause irreversible changes in the chemical composition of the upper atmosphere. Life on the Earth is impossible without ozone. This gas, concentrated chiefly in the stratosphere (at an altitude of 10—50 kilometers), creates an "ozone shield" which protects life on the planet from the deadly impact of harsh ultraviolet radiation from the Sun.

Observations of anomalous phenomena in the atmosphere and data on weather and climatic changes in the period between 1958 and 1962, when the most powerful atmospheric nuclear tests were held, indicate that nuclear conflict would bring about an ecological disaster and the death of civilization on the Earth.

**Text B****POLLUTION**

Scientific and technological progress has resulted in man's intervention in nature. And man's activity has created the threat to the environment. Many scientists consider that our world is going through a global ecological crisis which will lead to a gradual destruction of the human race. Factors ignored today may turn out to be very dangerous for the environment. All these problems are studied by ecology.

Modern ecology is based on Physics, Chemistry, Biology, Geography, Technology and other sciences.

At present we often hear about air pollution. Air pollution is a major problem of the environment. The air we breathe is becoming polluted by the products of man's activities. At present the air contains 140 harmful substances: dust, smoke, soot, carbon dioxide, sulphur dioxide, nitric oxide, etc. Industry and transport are major sources of environmental pollution. The air of big cities is polluted greatly.

Plants and factories on our planet emit more than 250 million tons of toxic waste. The main air pollutants in cities are automobiles. Every car consumes many tons of air. It exhausts gases containing poisonous carbon dioxide. This gas prevents the emission of the Earth's heat into space, which results in the so called "greenhouse effect" and global warming.

Water is considered to be the most essential material of civilization. Man cannot live and industry cannot operate without water. Rivers, seas and lakes are becoming highly polluted. This pollution comes from many sources: industrial wastes, thermal wastes from power stations, domestic wastes. Ships often pollute sea and river water with oil products. Pesticides from agricultural waste water and dangerous bacteria in municipal waste water discharges are also responsible for



water pollution. Water pollution is harmful not only to people, but to fish, animals and birds as well.

Soil pollution is another current problem. The destruction of forests, rising salinity in the soil and erosion of farmlands affects soil fertility. Fruit and vegetables polluted with chemicals may affect people's health.

Technological progress has resulted in increasing noise levels. High levels of noise at factories reduce work efficiency and may be dangerous for the workers' health. Special laboratories have been set up to measure and control noise.

The end of the 20<sup>th</sup> century has brought man a number of natural and manmade disasters. Among them one can mention collisions and explosions of tankers in the sea, explosions and leakage of chemicals at industrial enterprises and accidents at nuclear power plants. Oil pollution of the sea has become a serious problem as well as the radioactive fallout. Chemical and radioactive pollution affects flora and fauna. People are developing dangerous illnesses.

Protection of natural environment is becoming increasingly important. A good deal of work in observing and estimating man's impact on the biosphere is carried out by a number of international organizations. They develop programs of monitoring global changes in the earth atmosphere and in the state of the World Ocean. There are many control stations for checking the quality of air, land, fresh water and sea water. All large factories have purification systems.

Scientists all over the world develop ecologically pure and no-waste technologies. Powerful electric filters are used to purify air and water.

As to the automobiles, they will use environmentally friendly fuel-cells and electric cars have already appeared on the roads. All these measures will help to protect the environment.

There are over 150 "super cities" in the world with population from 1 to 15 million and more. Tokyo, New York, London, Mexico, Moscow are just a few of the "super cities". Their number and size is growing rapidly and their population is increasingly affected by the polluted environment. Smog hanging over large cities is a major threat to human health. The environmental problems of "super cities" is a cause for concern of world scientists.

### Vocabulary

intervention - вмешательство

threat - угроза

destruction - разрушение

pollution - загрязнение

soot - сажа

to consume - потреблять

emission - выпуск

waste - выброс

salinity - кислотность

fertility - плодородие

collision - столкновение  
 leakage - утечка  
 estimating - оценка  
 impact - влияние  
 purification - очищение  
 concern - беспокойство

### Ex.1. Ответьте на вопросы:

1. What sciences is modern ecology based on?
2. What does the future of our planet depend on?
3. Is our world going through a global ecological crisis?
4. Has man's activity created a threat to the environment?
5. What problems does ecology study?
6. What harmful substances does the air contain?
7. What is "the greenhouse effect"?
8. What are the main sources of soil pollution?
9. What affects soil fertility?
10. Why do people not want to live near airports?
11. What measures are taken to reduce noise?
12. What has the end of the 20<sup>th</sup> century brought with it?
13. What does chemical and radioactive pollution affect?
14. What factors affect man's health?
15. What disasters does the polluted environment bring?
16. Which ecological disaster do you consider the most dangerous?
17. What kind of work do international organizations carry out?
18. What do the scientists all over the world develop?
19. How many "super-cities" are there in the world? Name some of them.

### Ex.2. Выберите правильный ответ:

1. Man's activity has created the ... to the environment.  
 a) goal b) state c) threat d) benefit
2. Water is considered to be the most ... material of civilization.  
 a) essential b) harmful c) indefinite d) fluid
3. The pollution comes from many ...: industrial wastes, thermal wastes, domestic wastes.  
 a) countries b) sources c) questions d) reasons
4. Carbon dioxide ... the emission of the earth's heat into space which results in the so-called "greenhouse effect" and global warming.  
 a) helps b) produces c) escapes d) prevents
5. High levels of noise at factories ... work efficiency and may be ... for the workers' health.

- a) estimate, good b) increase, destructive c) reduce, dangerous d) rise, helpful
6. The main air pollutants in big cities are ....
- a) automobiles b) smoking people c) factories d) animals
7. At present the air contains around 140 ... substances: dust, smoke, soot, carbon dioxide, sulphur dioxide, nitric oxide, etc.
- a) beautiful b) bad c) harmful d) strong
8. ... often pollute sea and river water with oil products.
- a) cars b) ships c) boats d) sailing vessels
9. Scientists all over the world develop ecologically pure and ... technologies.
- a) direct b) no-pollute c) comfortable d) no-waste
10. The major threat to human health is ... hanging over "super-cities".
- a) smog b) fog c) frog d) cloud

**Ex.3. Составьте предложения, используя данные слова и словосочетания:**

1. Sciences; is based on; physics, chemistry, biology, geography ; as ; ecology; such; modern ; and others.
2. Pollution ; not only ; water ; is harmful ; to fish, animals, birds ; as well ; to people ; but.
3. Essential ; water ; civilization ; is ; material ; the most ; of ; considered to be.
4. Have ; factories ; all ; purification ; large ; systems.

**Ex.4. Расскажите, что вы знаете о проблемах экологии.**

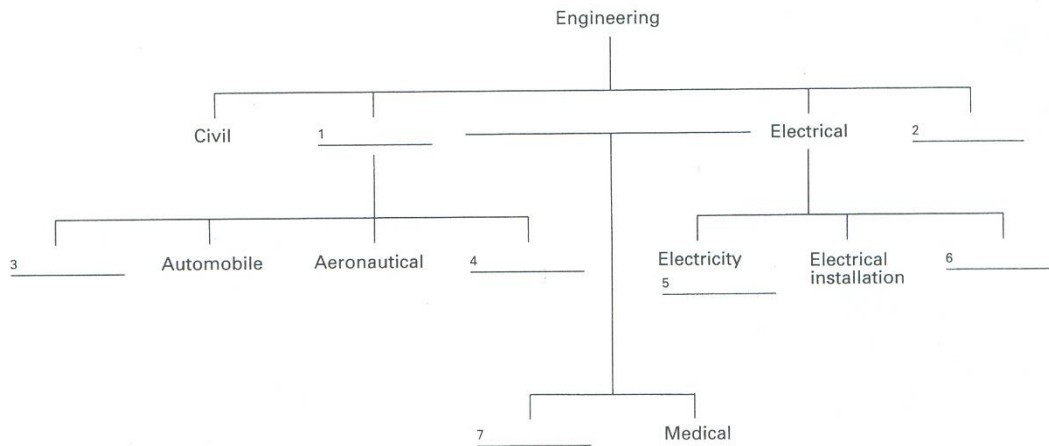
## UNIT 7

### ENGINEERING –WHAT’S IT ALL ABOUT?

Engineering is largely a practical activity. It is about putting ideas into action. Civil engineering is concerned with making bridges, roads, airports, etc. Mechanical engineering deals with the design and manufacture of tools and machines. Electrical engineering is about the generation and distribution of electricity and its many applications. Electronic engineering is concerned with developing components and equipment for communications, computing, and so on.

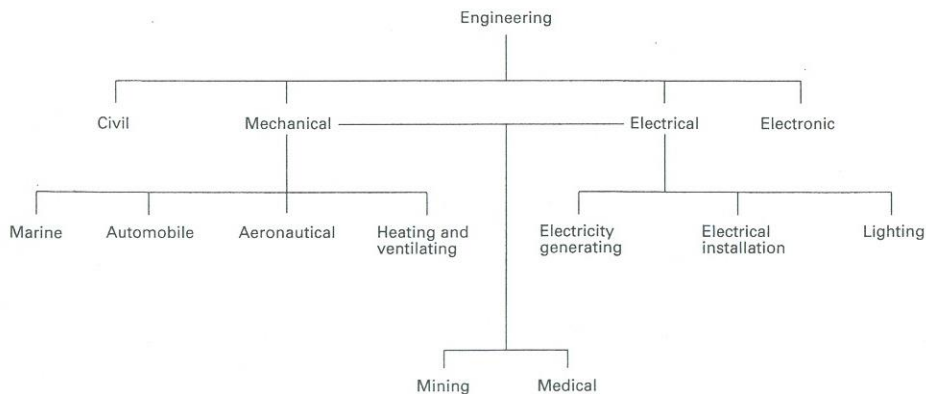
Mechanical engineering includes marine, automobile, aeronautical, heating and ventilating, and others. Electrical engineering includes electricity generating, electrical installation, lighting, etc. Mining and medical engineering belong partly to mechanical and partly to electrical.

**Ex.1 Прочитайте текст, скажите о каких отраслях инженерии идет речь.**



**Ex.2 Заполните схему, используя информацию из текста:**

**Ex.3. Заполните пропуски, используя информацию из диаграммы:**



The main branches of engineering are civil, 1 \_\_\_\_\_, 2 \_\_\_\_\_ and electronic. Mechanical engineering is 3 \_\_\_\_\_, 4 \_\_\_\_\_ machinery of all kinds. This branch of engineering includes 5 \_\_\_\_\_, automobile, 6 \_\_\_\_\_, and heating and ventilating. The first three are concerned with transport: 7 \_\_\_\_\_, cars and planes. The last 8 \_\_\_\_\_ with air-conditioning, refrigeration, etc. Electrical engineering deals with 9 \_\_\_\_\_ from generation to use. Electricity generating is concerned with 10 \_\_\_\_\_ stations. Electrical installation deals 11 \_\_\_\_\_ cables, switchgear, and connecting up electrical equipment.

Two branches of engineering include both 12 \_\_\_\_\_ and 13 \_\_\_\_\_ engineers. These are mining and 14 \_\_\_\_\_ engineering. The former deals with mines and mining equipment, the latter with hospital 15 \_\_\_\_\_ of all kinds.

## Choosing a course

### Ex.1. Прочитайте утверждения и отметьте те, которые относятся к вам:

- 1 You enjoy practical projects-creating and investigating things.
- 2 You like finding out how things work.
- 3 You are interested in improving the environment.
- 4 You like helping people.
- 5 You enjoy solving problems.
- 6 You enjoy organizing activities.
- 7 You enjoy science programmes on TV or on the radio.
- 8 You sometimes read articles on scientific or engineering topics.
- 9 You have a lot of determination and stamina.

If you have ticked most of these statements, engineering is the right course of study for you.

Source: Adapted from Cyberpunks and Technophobes, BBC Education

### Ex.2. Заполните пропуски, используя слова после текста:

In the United Kingdom you can 1\_\_\_\_\_engineering at a college of further education or a university. Most college courses 2\_\_\_\_\_ from one to two years. University undergraduate courses 3\_\_\_\_\_engineering last from three to four years.

A college will take 4\_\_\_\_\_after four years of secondary school education.

Most students study full-time, 5\_\_\_\_\_day-release courses are available for people who 6\_\_\_\_\_in local engineering companies.

Students will be given a certificate 7\_\_\_\_\_a diploma at the 8\_\_\_\_\_of their course.

Most university students will have completed six 9\_\_\_\_\_of secondary school.

Others will have taken a diploma course at college. 10\_\_\_\_\_give degrees.

A Bachelor's degree 11\_\_\_\_\_three to four years. A Master's

12\_\_\_\_\_requires a further year.

(students, study, in, or, last, but, although, end, work, degree, years, tales, Universities)

## CAREERS IN ENGINEERING

### Ex.3. Прочитайте текст:

#### Jobs in engineering

##### A

*Professional engineers may work as:*

**Design engineers:** They work as part of a team to create new products and extend the life of old products by updating them and finding new applications for them.

Their aim is to build quality and reliability into the design and to introduce new components and materials to make the product cheaper, lighter, or stronger.

**Installation engineers:** They work on the customer's premises to install equipment produced by their company.

**Production engineers:** They ensure that the production process is efficient, that materials are handled safely and correctly, and that faults which occur in production are corrected. The design and development departments consult with them to ensure that any innovations proposed are practicable and cost-effective.

##### B

Just below the professional engineers are the technician engineers. They require a detailed knowledge of a particular technology - electrical, mechanical, electronic, etc. They may lead teams of engineering technicians. Technician engineers and engineering technicians may work as: **Test/Laboratory technicians.** They test samples of the materials and of the product to ensure quality is maintained.

**Installation and service technicians:** They ensure that equipment sold by the company is installed correctly and carry out preventative maintenance and essential repairs.

**Production planning and control technicians:** They produce the manufacturing instructions and organize the work of production so that it can be done as quickly, cheaply, and efficiently as possible.

**Inspection technicians:** They check and ensure that incoming and outgoing components and products meet specifications.

**Debug technicians:** They fault find, repair, and test equipment and products down to component level.

**Draughts men/women and designers:** They produce the drawings and design documents from which the product is manufactured.

##### C

The next grades are craftsmen/women. Their work is highly skilled and practical. Craftsmen and women may work as:

**Toolmakers:** They make dies and moulding tools which are used to punch and form metal components and produce plastic components such as car bumpers.

**Fitters:** They assemble components into larger products.

**Maintenance fitters:** They repair machinery.

**Welders:** They do specialized joining, fabricating, and repair work.

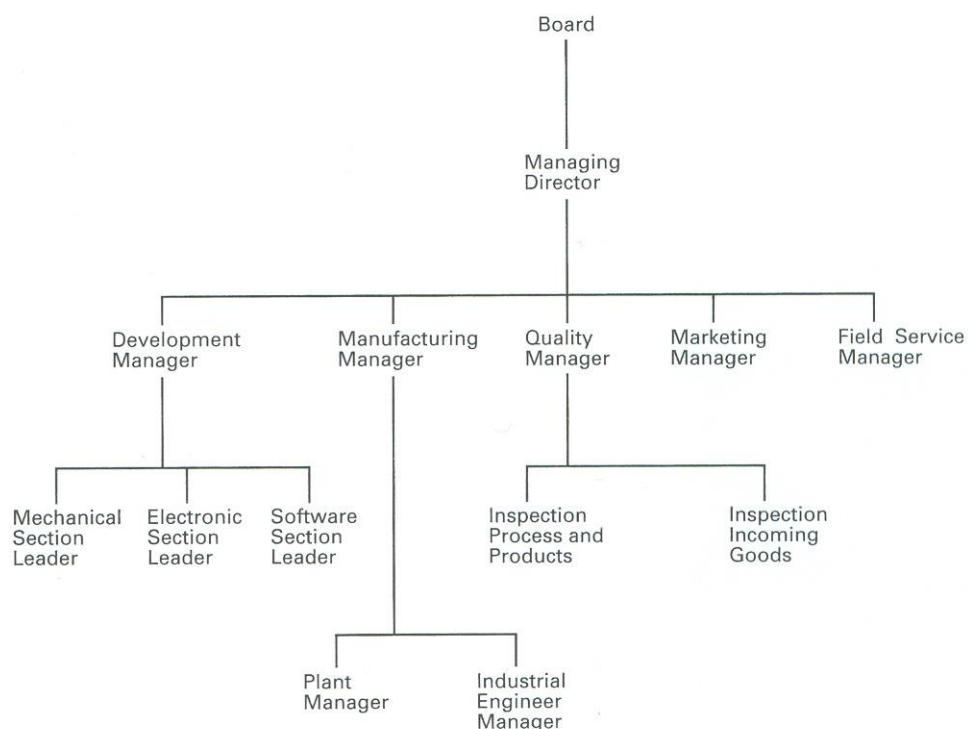
Electricians: They wire and install electrical equipment.

Operators require fewer skills. Many operator jobs consist mainly of minding a machine, especially now that more and more processes are automated. However, some operators may have to check 45 components produced by their machines to ensure they are accurate. They may require training in the use of instruments such as micrometers, verniers, or simple go/no go gauges.

**Ex.4. Объясните, как выполнить следующие задания:**

1. Test completed motors from a production line.
2. Find out why a new electronics assembly does not work.
3. Produce a mould for a car body part.
4. See that the correct test equipment is available on a production line.
5. Find a cheaper way of manufacturing a crankshaft.

**Ex.5. Рассмотрите рисунок «Company structure» и переведите значения слов:**



**Ex.6. Закончите предложения, используя информацию из рисунка выше:**

The head of an engineering company in the UK is the 1 \_\_\_\_\_ or the Chief Executive Officer (CEO). If it is an American subsidiary, the head may be known as the Vice President. Unless the person at the top is the Chairman of the company, or the owner, he or she will be responsible to a 2 \_\_\_\_\_, or, in the case of a

US subsidiary, the President. In turn, the Chairman or President is responsible to the company shareholders.

The managers of the various departments which are vital to a company report directly to the Managing Director. These managers may be referred to as the Management Team. They are required to advise the Director on the consequences of any decision made by the Board in terms of costs, personnel, materials, time, plant, etc. They also have to brief the Director on any matters which should be taken to the Board for decision.

The 3 \_\_\_\_\_, with the support of the Mechanical, Electronic, and 4 \_\_\_\_\_ Sections, is responsible for the introduction of new products. The 5 \_\_\_\_\_ decides how the new products will be produced. The 6 \_\_\_\_\_ and Industrial Engineer Manager report to this member of the Management Team.

The 7 \_\_\_\_\_ ensures that the products are fault-free and that the components and materials used in their manufacture meet company standards.

The 8 \_\_\_\_\_ handles market research, promotion, and sales.

The Field Service Manager is responsible for the installation and maintenance of the company's products wherever required.

The structure shown in Fig. 1 is common to most engineering companies but there can be differences in reporting channels. For example, in some companies the Field Service Department may report through Marketing, through Quality, or even through a separate Product Assurance and Support Group.

Although the company structure shows managers for each separate department, departments are interdependent. For example, the Development Manager would not start the design of a new product without first discussing the project with other managers. The design would not be completed without regular meetings with other departments to ensure that it fitted the customers' requirements, and that cost targets would be met without adversely affecting quality, manufacturability, and serviceability. These meetings would ensure that trained manpower, tooling, documentation, etc., were in place at the correct time for each stage of the product's launch.

### **Ex.7. Ответьте на вопросы:**

1. What is the US equivalent of the Managing Director?
2. Who is the Chairman of a company responsible to?
3. Who comprise the Management Team?
4. In what way might companies differ in structure from the example given?
5. Which department would advise on whether a new product would meet customers' requirements?



## Text A

### MY FUTURE PROFESSION

I will become a specialist in computer technologies — a computer engineer. Computer industry is developing so fast, that it comprises almost all spheres of professional life. No business now is possible without computers. This is especially true about automated manufacturing of products and robotics. Computer control of automated production opens new horizons for the cheap and quality production of goods. Information is now generated, transmitted, received, and stored electronically through computer networks on a scale unprecedented in history, and there is every indication that the explosive rate of growth in this field will continue.

Computer engineering is a general field. It deals with both electric and electronic industries.

Electronic engineering deals with the research, design, integration, and application of circuits and devices used in the transmission and processing of information.

Engineers in the field of electric and electronic engineering are concerned with all aspects of electrical communications, from fundamental questions such as "What is information?" to the highly practical, such as the design of telephone systems. In designing communication systems, engineers rely on various branches of advanced mathematics, such as Fourier analysis, linear systems theory, linear algebra, differential equations, and probability theory.

Engineers work on control systems which are used extensively in automated manufacturing and in robotics.

Major developments in the field of communications and control have been the replacement of analogue systems with digital systems; fibre optics are used now instead of copper cables. Digital systems offer far greater immunity to electrical noise. Fibre optics are likewise immune to interference; they also have great carrying capacity, and are extremely light and inexpensive to manufacture.

Computer engineering is now the most rapidly growing field. The electronics of computers is the design and manufacture of memory systems, of central processing units, and of peripheral devices. The most prospective industry now is the Very Large Scale Integration (VLSI) and new computer architectures. The field of computer science is closely related to computer engineering; however, the task of making computers more «intelligent» (artificial intelligence), through creation of sophisticated programs or development of higher level machine languages or other means, is generally regarded as the dream of computer science.

One current trend in computer engineering is microminiaturization. Engineers continue to work to fit greater and greater numbers of circuit elements into smaller and smaller chips.

Another trend is towards increasing the speed of computer operations through the use of parallel processors and superconducting materials.

So, as you see, there are a lot of employment opportunities in my field. I don't worry about finding a job. The most important thing for me now is to study well and to graduate from the university.

### Vocabulary

to comprise - включать в себя  
 automated manufacturing of products - автоматизированное производство товаров  
 robotics - робототехника  
 horizons - горизонты  
 cheap - дешевый  
 to generate - генерировать, производить  
 to transmit - передавать  
 to store - хранить  
 scale - масштаб  
 unprecedented in history - не имеющий прецедентов в истории  
 indication - указание, свидетельство  
 explosive - взрывной  
 to deal with - иметь дело с, заниматься чем-либо  
 integration - интеграция  
 application - приложение, использование  
 circuits - электрические схемы, цепи  
 device - устройство  
 transmission - передача  
 processing - обработка  
 to rely - полагаться  
 Fourier analysis - анализ Фурье  
 linear systems theory - теория линейных систем  
 linear algebra - линейная алгебра  
 differential equations - дифференциальные уравнения  
 probability theory - теория вероятности  
 extensively - широко  
 replacement - замещение  
 fibre optics - оптоволоконные технологии  
 copper - медь  
 digital - цифровой  
 immunity - защищенность, невосприимчивость  
 carrying capacity - пропускная способность  
 rapidly growing - быстрорастущий  
 artificial intelligence - искусственный разум  
 sophisticated - сложный  
 superconducting - сверхпроводимость

**Add to your active vocabulary:**

- a) mechanical engineer - инженер-механик  
 electric engineer - инженер-электрик  
 electronic engineer - инженер электроник  
 computer engineer - инженер-компьютерщик  
 military engineer - военный инженер
- a) prestigious job (work) - престижная работа  
 well-paid job - высокооплачиваемая работа  
 employee - наемный рабочий  
 employer - наймодатель  
 state-employed - государственный служащий  
 white-collar worker - «белый воротничок», работник умственного труда  
 blue-collar worker - «синий воротничок», работник физического труда  
 skilled worker - квалифицированный рабочий  
 unskilled worker - неквалифицированный рабочий  
 experienced worker - опытный работник
- c) to be hired for a job - быть нанятым на выполнение работы  
 to look for a new job (work, position) - искать новую работу  
 to apply for a new job - претендовать на какую-либо должность  
 application for a position of - заявление на какую-либо должность  
 resume - резюме  
 C.V. (curriculum vitae) - автобиография  
 to be fired - быть уволенным  
 to retire - уходить на пенсию  
 to be unemployed - быть безработным

**Ex.1. Ответьте на вопросы:**

1. What does computer industry comprise?
2. How is computer industry developing?
3. What does computer engineering deal with?
4. What does electronic engineering deal with?
5. Are engineers in the field of electric and electronic engineering concerned with all aspects of electrical communications?
6. What systems do engineers work?
7. Are there a lot of employment opportunities in computer engineering? Why?

**Ex.2. Найдите в тексте английские эквиваленты следующих слов и выражений:**

Робототехника; автоматизированное производство; информация передается и хранится; электронная инженерия занимается; дифференциальное уравнение; главные достижения; замещение аналоговых систем; медные кабели; цифровые системы; невосприимчивость к электрическому шуму.

**Ex.3. Закончите предложения подходящими по смыслу словами:**

1. Computer control of automated production opens ...
2. Computer engineering deals with both ...
3. Engineers in the field of electric and electronic engineering are concerned with ...
4. Engineers work on control systems which are used extensively in ...
5. Computer engineering is now the most...

**Ex.4. Обсудите следующее:**

1. What kind of work are you interested in?
  - a) well paid
  - b) interesting
  - c) in a large and famous company
  - d) quiet
  - e) in an industry which has a future
  - f) prestigious
  - g) not to sit the whole day in the office
  - h) to travel a lot
2. What position would you like to have?
  - a) to manage people - manager
  - b) to work for someone else - an employee
  - c) to be your own boss - self-employed, businessman
  - d) be responsible for everything - top manager, director
  - e) to work for the state - state employee

**Ex.5. Обсудите в группе преимущества и недостатки вашей будущей профессии:**

1. Do you think that engineering profession is prestigious?
2. Is it well-paid?
3. How difficult is it to find a good work in this field?

### **Ex.6. Переведите следующие предложения на английский язык:**

1. Никакой современный бизнес не возможен без компьютерной техники.
2. Компьютерная индустрия - наиболее быстроразвивающееся производство.
3. Компьютерное управление автоматизированными производственными линиями открывает новые горизонты дешевого и качественного производства товаров.
4. Крупным достижением в сфере коммуникации является замена аналоговых систем на цифровые.
5. В настоящее время оптоволоконные цифровые технологии обеспечивают более качественную и доступную связь, чем аналоговые системы.

### **Ex.7. Расскажите о своей будущей профессии.**

#### **Text B**

### **THE FUTURE OF THE ENGINEERING PROFESSION**

Among various recent trends in the engineering profession computerization is the most widespread. The trend in modern engineering offices is also towards computerization. Computers are increasingly used for solving complex problems as well as for handling, storing, and generating the enormous volume of data modern engineers must work with.

Scientific methods of engineering are applied in several fields not connected directly to manufacture and construction. Modern engineering is characterized by the broad application of what is known as systems engineering principles.

Engineers in industry work not only with machines but also with people, to determine, for example, how machines can be operated most efficiently by workers. A small change in the location of the controls of a machine or of its position with relation to other machines or equipment, or a change in the muscular movements of the operator, often results in greatly increased production. This type of engineering work is called time-study engineering.

A related field of engineering, human-factors engineering, also known as ergonomics, received wide attention in the late 1970s and 1980s when the safety of nuclear reactors was questioned following serious accidents that were caused by operator errors, design failures, and malfunctioning equipment.

Human-factors engineering seeks to establish criteria for the efficient, human-centred design of, among other things, the large, complicated control panels that monitor and govern nuclear reactor operations.

## Vocabulary

trend - тенденция, уклон  
 widespread - широко распространенный  
 increasingly - увеличено, усиленно  
 solve - решать  
 apply - применять, прилагать  
 to determine - определять  
 efficiently - эффективно, продуктивно  
 related field - родственная область  
 cause - причина  
 error - ошибка  
 failure - провал, неудача

### Ex.1. Ответьте на вопросы:

1. What is the most widespread trend in the engineering profession?
2. What are computers used for in modern engineering?
3. What approaches are used in modern engineering?
4. What is «ergonomics»?
5. What does human-factors engineering deal with?

### Ex.2. Найдите в тексте английские эквиваленты следующих слов и выражений:

Тенденция в современной инженерии; компьютеризация; усиленно используется; для решения комплекса проблем; научные методы; широкое применение; родственная область; получать большое внимание.

### Ex.3. Переведите слова и словосочетания в скобках:

1. Computerization is (самая широко распространенная).
2. (Тенденция в современной инженерии) is also towards computerization.
3. Scientific methods of engineering (применяются в нескольких областях).
4. (Инженеры в промышленности) work not only with machines but also with people.
5. Human-factors engineering seeks (установить критерии) for the efficient design.

**Ex.4. Поставьте следующие предложения в вопросительную и отрицательную формы:**

1. The trend in modern engineering offices is computerization.
2. Computers are used for solving complex problems.
3. Modern engineering is characterized by the broad application.
4. Engineers work not only with machines but also with people.
5. This type of engineering work is called time study engineering.

**Ex.5. Выделите 3 основные идеи текста.**

**Ex.6. Расскажите, что вы знаете о будущем инженерии.**

## **Texts for additional reading**

### **ENGINEERING AS A PROFESSION**

#### **Electrical and Electronics Engineering**

Electrical and electronics engineering is the largest and most diverse field of engineering. It is concerned with the development and design, application, and manufacture of systems and devices that use electric power and signals. Among the most important subjects in the field are electric power and machinery, electronic circuits, control systems, computer design, superconductors, solid-state electronics, medical imaging systems, robotics, lasers, radar, consumer electronics, and fibre optics.

Despite its diversity, electrical engineering can be divided into four main branches: electric power and machinery, electronics, communications and control, and computers.

#### **Electric Power and Machinery**

The field of electric power is concerned with the design and operation of systems for generating, transmitting, and distributing electric power. Engineers in this field have brought about several important developments since the late 1970s. One of these is the ability to transmit power at extremely high voltages in both the direct current (DC) and alternating current (AC) modes, reducing power losses proportionately. Another is the real time control of power generation, transmission, and distribution, using computers to analyze the data fed back from the power system to a central station and thereby optimizing the efficiency of the system while it is in operation.

A significant advance in the engineering of electric machinery has been the introduction of electronic controls that enable AC motors to run at variable speeds by adjusting the frequency of the current fed into them. DC motors have also been made to run more efficiently this way.

#### **Electronics**

Electronic engineering deals with the research, design, integration, and application of circuits and devices used in the transmission and processing of information. Information is now generated, transmitted, received, and stored electronically on a scale unprecedented in history, and there is every indication that the explosive rate of growth in this field will continue unabated.

Electronic engineers design circuits to perform specific tasks, such as amplifying electronic signals, adding binary numbers, and demodulating radio signals to recover the information they carry. Circuits are also used to generate



waveforms useful for synchronization and timing, as in television, and for correcting errors in digital information, as in telecommunications.

Prior to the 1960s, circuits consisted of separate electronic devices - resistors, capacitors, inductors, and vacuum tubes - assembled on a chassis and connected by wires to form a bulky package. The electronics revolution of the 1970s and 1980s set the trend towards integrating electronic devices on a single tiny chip of silicon or some other semiconductive material. The complex task of manufacturing these chips uses the most advanced technology, including computers, electron-beam lithography, micro-manipulators, ion-beam implantation, and ultraclean environments. Much of the research in electronics is directed towards creating even smaller chips, faster switching of components, and three-dimensional integrated circuits.

### **Communications and Control**

Engineers work on control systems ranging from the everyday, passenger-actuated, such as those that run a lift, to the exotic, such as systems for keeping spacecraft on course. Control systems are used extensively in aircraft and ships, in military fire-control systems, in power transmission and distribution, in automated manufacturing, and in robotics.

### **Computers**

Computer engineering is now the most rapidly growing field. The electronics of computers involve engineers in design and manufacture of memory systems, of central processing units, and of peripheral devices. The field of computer science is closely related to computer engineering; however, the task of making computers more «intelligent» (artificial intelligence), through creation of sophisticated programs or development of higher level machine languages or other means, is generally regarded as the aim of computer science.

One current trend in computer engineering is microminiaturization. Engineers try to place greater and greater numbers of circuit elements onto smaller and smaller chips. Another trend is towards increasing the speed of computer operations through the use of parallel processors and superconducting materials.

### **Mechanical Engineering**

Engineers in this field design, test, build, and operate machinery of all types; they also work on a variety of manufactured goods and certain kinds of structures. The field is divided into (1) machinery, mechanisms, materials, hydraulics, and pneumatics; and (2) heat as applied to engines, work and energy, heating, ventilating, and air conditioning. The mechanical engineer, therefore, must be trained in mechanics, hydraulics, and thermodynamics and must know such subjects as metallurgy and machine design. Some mechanical engineers specialize in particular types of machines such as pumps or steam turbines. A mechanical

engineer designs not only the machines that make products but the products themselves, and must design for both economy and efficiency. A typical example of modern mechanical engineering is the design of a car or an agricultural machine.

### **Safety Engineering**

This field of engineering has as its object the prevention of accidents. In recent years safety engineering has become a speciality adopted by individuals trained in other branches of engineering. Safety engineers develop methods and procedures to safeguard workers in hazardous occupations. They also assist in designing machinery, factories, ships and roads, suggesting alterations and improvements to reduce the possibility of an accident. In the design of machinery, for example, the safety engineer tries to cover all moving parts or keep them from accidental contact with the operator, to put cutoff switches within reach of the operator and to eliminate dangerous sharp parts. In designing roads the safety engineer seeks to avoid such hazards as sharp turns and blind intersections that lead to traffic accidents.

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