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КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ



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**АНГЛИЙСКИЙ ЯЗЫК  
ДЛЯ АУДИТОРНЫХ ЗАНЯТИЙ  
И САМОСТОЯТЕЛЬНОЙ РАБОТЫ  
СТУДЕНТОВ НАПРАВЛЕНИЯ ПОДГОТОВКИ  
36.04.02 ЗООТЕХНИЯ  
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Пособие предназначено для обучающихся по направлению подготовки 36.04.02, изучающих дисциплину «Английский язык». Основной целью пособия является приобретение обучающимися коммуникативной компетенции, необходимой для квалифицированной информационной и творческой деятельности в различных сферах и ситуациях делового партнерства, совместной производственной и научной работы.

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## ВВЕДЕНИЕ

Основной целью обучения в магистратуре является приобретение обучающимися коммуникативной компетенции, необходимой для квалифицированной информационной и творческой деятельности в различных сферах и ситуациях делового партнерства, совместной производственной и научной работы. Обязательным условием достижения поставленной цели является решение следующих задач:

- достижение зрелого владения всеми видами чтения и перевода литературы разных функциональных стилей.
- овладение всеми видами монологического высказывания (информирование, пояснение, уточнение, инструктирование и иллюстрирование высказывания, а также умение сделать доклад на иностранном языке).
- осуществление и понимание высказываний профессионального и научно-го характера в ситуациях приема зарубежных специалистов, обмена профессионально-значимой информацией в процессе повседневных бесед, деловых переговоров, при заключении сделок и контактов, обсуждении условий делового партнерства и деловом общении по телефону.

Предлагаемое учебное пособие построено с учетом преемственности обучения и состоит из самостоятельных блоков (Units). Цель каждого блока - развитие умения чтения и адекватного перевода текстов по направлению подготовки и написания тезисов, докладов, рефератов и аннотаций. Работа с данным пособием способствует формированию у студентов следующих компетенций: ОПК-1, ОПК-3.

Учебные тексты служат для первичного введения языковых явлений и иллюстрацией их употребления в иноязычной речи. При подборе текстов учитывалась их актуальность, информативность, частотность представленной в них лексики и уровень языковой подготовки студентов.

Перед каждым текстом даётся подробный список лексики, предназначенный для активного изучения и закрепления в ходе выполнения послетекстовых упражнений. Упражнения направлены на активизацию лексического материала и развитие навыков устной речи.

Грамматический материал охватывает основные явления грамматики английского языка и направлен на закрепление знаний, полученных на бакалаврском уровне подготовки.

**PART 1. Unit 1**  
**EDUCATION IN MODERN SOCIETY. HIGHER EDUCATION**

**1. Read and translate the text:**

**Text 1. HIGHER EDUCATION IN RUSSIA**

learning materials – учебные материалы

to bring up to date – довести до современных требований

information explosion – информационный взрыв

training and instruction – подготовка и обучение

over years – за многие годы

curricula are enriched and broadened – программы (курсы обучения) обогащаются и расширяются

Higher education plays an important part in the life of any country as it provides the country with highly-qualified specialists for future development and progress. It trains people to become teachers, engineers, doctors and other professional workers.

In all the industrial countries standards of living are steadily changing; this means that the kind of education, which was good enough thirty years ago, is not necessarily good for them today. The serious need to find ways and means of ensuring continuous and thorough adoption of the universities to contemporary needs in our rapidly changing world is widely recognized. And this means that styles of teaching, quality of learning materials and organization of the university itself have to be continuously brought up to date and improved.

Besides, knowledge and information which comes through the mass media must also be taken into consideration. This information explosion has affected every field of study, especially, of course, in the natural and applied sciences and in all other sciences as well. The increase of information requires new methods and new approaches to students' training and instruction.

At present a new system of education is introduced in this country – a distance education system. This computer system of learning helps working professionals to continue their education while remaining at their jobs. This system enables people to get knowledge and a good foundation in the sciences basic to his or her field of study. Distance learning has developed over years from satellite video courses to modern videoconferencing through personal computers.

The academic year usually lasts 9 months and is divided into two terms (semesters). The first- and second-year students obtain thorough instructions in the fundamental sciences of mathematics, physics, chemistry and drawing as well as computer engineering and a number of others. The curricula are enriched and broadened by instructions in such subjects as foreign languages, history and economics.

At the third year students get more advanced knowledge and begin to concentrate on their special interests, so to say, their «major» subject and take many courses in this subject. Specialized study and courses will help students to become specialists and prepare them for their future work.

After four years students will get a bachelor's degree. Then the students may go on with their studies and in a year or two of further study and research get a master's degree. After graduating from the university they may go on with their study and research and may get a still higher degree.

About 75 percent of students receive state grants and 15 percent are sponsored by enterprises. Universities have their own students' hostels and some of them have large and excellent sport centers.

Education is a process through which culture is preserved, knowledge and skills are developed, values are formed, and information is exchanged. Education is the way to success.

## **2. Practise the pronunciation of the following words:**

Highly-qualified, steadily, ensuring, thorough, adoption, contemporary, instructions, science, curricula, preserve.

## **3. Answer the questions:**

1. When does the academic year begin in this country? 2. How many exams did you pass to enter the University? 3. Do you pay for your education? 4. Do students get grants? 5. What subjects do students study in the first year? 6. Which subject is the most interesting for you? 7. Is there a sport center in your University? 8. What degree do students get after four years of study? 9. What degree can a student get after two years of further study and research? 10. What new education system is introduced in this country? 11. What specialities do people get after graduating from a university? 12. Why is higher education important in the life of every country?

## **4. Use Active and Passive Voice.**

1. Students asked the lecturer many questions. The lecturer was asked many questions.  
2. The monitor told the first-year students to come to the laboratory. The first-year students were told to come to the laboratory.  
3. Usually a lab assistant shows the equipment to the students. Usually the equipment is shown to the students by a lab assistant. Usually students are shown the equipment by a lab assistant.  
4. Students watched the process with great attention. The process was watched with great attention.  
5. Tomorrow our teacher will give us a new task. A new task will be given tomorrow. We shall be given a new task tomorrow.  
6. Practice accompanies theory. Theory is accompanied by practice.  
7. He asked me to bring a dictionary. He was asked to bring a dictionary.  
8. The teacher told the students to sign their drawings. The students were told to sign their

drawings. 9. The dean will send the students to a big plant in summer. The students will be sent to a big plant in summer. 10. He taught us to use the lab equipment. We were taught to use the lab equipment.

## **5.**

### **A. Transform into Passive Voice.**

1. You open the door. 2. We asked questions. 3. He will finish his project next week. 4. He can do this exercise. 5. They invited me to their conference. 6. I saw a new film. 7. My sister writes letters regularly. 8. Universities develop new methods of students' training. 9. After graduating from the University the students may get a still higher degree. 10. The study of foreign languages, history and economics must improve the curricula of technological universities.

### **B. Translate.**

1. Mathematics, strength of materials, mechanics, elements of machines as well as engineering physics are studied at technological institutes. 2. The development of science is closely connected with the development of higher education. 3. Students are provided with hostels, well-equipped laboratories and libraries. 4. Any country must be provided with good specialists in all branches of science and technology for its further development. 5. Large sums of money are spent by the state to train highly-qualified engineers. 6. Much attention must be paid to improve the standards of higher education. 7. Students of technological institutes are trained to analyse various facts and theories. 8. The scientific and technological progress of a country is determined by the qualification of specialists. 9. Some institutes of technology are reorganized into universities. 10. The country must be provided with specialists capable of working with the technology of tomorrow effectively.

## **6. Find Participle I and Participle II, translate.**

1. The students studying at the institutes passed entrance exams in summer. 2. The subjects studied in the first two years are very important for future engineers. 3. The lecture delivered by our dean was on new methods of technology. 4. The man delivering this lecture is our professor on mathematics. 5. An article discussing the new system of school education appeared in all newspapers. 6. The results of the experiments discussed yesterday will be published. 7. The attention paid to the study of fundamental subjects is great. 8. Students interested in computer engineering enter technological institutes. 9. The number of specialists connected with new branches of science and engineering is increased every year.

## **7. Read and translate the text.**

## **Text 2. HIGHER EDUCATION IN THE UK AND THE USA**

to consist of - состоять из

self-governing - самоуправляющийся

tuition - обучение

to proceed - продолжать делать (что-либо)

a gown - мантия

a major subject - профилирующий предмет

a graduate school - старшие курсы

a five point scale - пятибалльная шкала

### **Part 1**

Cambridge is one of the two main universities of England which is located at the Cam River. It was founded at the beginning of the 12th century. The University consists of 24 different colleges including 4 colleges for women. Each college is self-governing.

The head of the University is the chancellor who is elected for life. The teachers are commonly called «dons» and «tutors». Part of the teaching is by means of lectures organized by the University. Besides lectures teaching is carried out by tutorial system for which Cambridge University is famous all over the world. This is a system of individual tuition organized by the colleges.

Each student has a tutor who practically guides him through the whole course of studies. The tutor plans the student's work and once a week the student goes to his tutor to discuss his work with him. The training course lasts 4 years. The academic year is divided into 3 terms. The students study natural and technical sciences, law, history, languages, geography and many other subjects.

After three years of study a student may proceed to a Bachelor's degree, and later to the degrees of Master and Doctor. Students are required to wear gowns at lectures, in the University library, in the street in the evening, for dinners in the colleges and for official visits. All the students must pay for their education, examinations, books, laboratories, university hostel, the use of libraries, etc. Very few students get grants. Not many children from the working class families are able to get higher education, as the cost is high. The cost of education depends on the college and speciality.

A number of great men, well-known scientists and writers studied at Cambridge. Among them are: Erasmus, the great Dutch scholar, Bacon, the philosopher, Milton and Byron, the poets, Cromwell, the soldier, Newton and Darwin, the scientists.

### **Part 2**

There is no national system of higher education in the United States. Higher education is given in colleges and universities. There are over 2100 various higher educational institutions, including colleges, technological institutes and universities. The average college course of study is 4 years. The academic year is usually 9 months or 2 terms

(semesters) of four and a half months each. Classes usually begin in September and end in June. The first-year students are called freshmen. Students choose a major subject and take many courses in this subject. After four years, they get a traditional Bachelor's degree. Then the students may go on to graduate school and with a year or two of further study get a Master's degree.

After another year or two of study and research, they may get a still higher degree as Doctor of Philosophy (Ph. D.). The student's progress is evaluated by means of tests, term works and final examinations in each course. The student's work is given a mark, usually on a five point scale. Letters indicate the level of achievement.

«A» is the highest mark. «F» denotes a failure.

Most American colleges and universities charge for tuition. The methods of instruction in the universities are lectures, discussions, laboratory and course works and seminars. Most cities have colleges or universities that hold classes at night as well as in daytime. In this way people may work for a degree or just take a course in the subject that interests them.

### **8. Practise the pronunciation of the following words:**

Tutor, tutorial system, guide, through, languages, chancellor, major, require, sciences, law, scholar, further, evaluated, Bachelor's degree, Master's degree, failure, method.

### **9. Read and translate the text.**

#### **Text 3. OXFORD UNIVERSITY**

Oxford is renowned the world over. It ranks in importance with Athens, Rome and Paris because of the stream scholars who, for hundreds of years, and particularly in the 20th century, have come to sit at the feet of learned men, and have returned to their own countries, their minds enriched with the distilled learning to be found here, and imbued with an abiding love for the place. They have absorbed the almost indefinable "spirit of Oxford", and many of them return again and again, so strong is the pull of the place.

This book is designed to help the visitor whose stay is short. So many visitors want to know where is the University. In their home country, the universities are easily identifiable because they are compact, purpose-built places, and probably isolated from the domestic and commercial buildings which form the heart of the city from which they take their name.

Oxford is different. It has a golden heart - an area of less than half a square mile in which is to be found the most varied assortment of historic buildings in the world. But they do not stand in isolation; they are intermingled, in the most delightful way, with houses, shops and offices.

Over the last decade millions of pounds have been spent in restoring and cleaning



the stonework of college and university buildings, which had become blackened and decayed, and in many cases was in danger of disintegrating. Great care was taken in the restoration, and the result is that the university buildings present the honey-coloured facades which the great architects such as Wren and Hawksmoor created.

Interiors too, have been cleaned and restored - notably those of the Sheldonian Theatre and the Bodleian Library. Oxford is a place of great beauty, but it is not just a shrine to the past. It is a living entity and its historic buildings are the homes of masters and students whose learning, thinking and ideas have a profound influence on culture, education, science and politics, not only in England, but throughout the world.

The University did not come into being all at once. Oxford had existed as a city for at least 300 years before scholars began to resort to it. The end of the 12th century saw the real beginnings of the University. It is known that early in that century distinguished scholars were lecturing in Oxford, but it had no recognition as a place of learning. In about 1184 the University had become an accomplished fact as result of the migration to Oxford of students who brought their own traditions with them.

It is generally assumed that between 1164 and 1169, when Henry II forbade English clerks to go to the University of Paris, which at that time was the foremost in Europe, the scholars had to find somewhere else to continue their studies. Their choice fell on Oxford. The first group of scholars at Oxford may have been joined by others from Paris, and from other parts of Britain.

There is no "university" as such. Each college is practically autonomous, with its own set of rules for its good government. There is a central administration, providing services such as libraries and laboratories.

### **10. Practise the pronunciation of the following words:**

Rank, scholars, particularly, imbued, indefinable, short, purpose, varied, delightful, autonomous, distinguished, profound, disintegrating, foremost, migration.

### **11. Answer the questions:**

- 1) Why is Oxford ranking amongst the world's top universities?
- 2) How does Oxford differ from other educational institutions?
- 3) Why do the Oxford's buildings need to be restored?
- 4) What architects have worked on the University's facades?
- 5) Why didn't Oxford deserve any recognition until the 12th century?
- 6) When was the heyday of Oxford?
- 7) Why does the author claim that there's no university such as Oxford?
- 8) Why did English clerks give up going to the University of Paris, which was considered to be the foremost in Europe?

## 12. Make up definitions:

Distinguished	Ahead of all others, especially in position or rank.
A scholar	Something that exists as a particular and discrete unit.
To intermingle	Standing above others in character or attainment or reputation.
An entity	An exposition of a given subject delivered before an audience or a class, as for the purpose of instruction.
Foremost	To mix or become mixed together.
A lecture	One who attends school or studies with a teacher.

## Unit 2

### THE QUALITY OF ENVIRONMENT. ENVIRONMENT PROTECTION

#### 1. Read and translate the text.

##### Text 1.ENVIRONMENT PROTECTION MUST BE GLOBAL

That the problem of pollution and ecology has become the most important one for mankind is evident to all. The more civilization is developing, the greater the ecological problems are becoming. Air and water pollution by industry is now reaching tremendous proportions. In our era it is changing from a national to an international problem, especially in territories where rivers cross several countries. The seas and oceans are also becoming seriously polluted. A similar situation is developing in the atmosphere. It is known that many cities throughout the world suffer from air pollution.

However, our scientific knowledge and technological advancement make it possible to eliminate it if people use good will and make considerable investments for that purpose. The development of natural resources on a global scale is already possible from a scientific and technical standpoint. Large-scale experimental work in this area is successfully being carried out.

At present scientists in industrially developed countries are working on the theory of interaction of all the atmospheric and oceanic global processes that determine the climate and weather of the world. Increasing growth of population, industrialization and the use of resources are slowly but surely changing the global climate and water balance. This can be described as a great experiment, one that may bring about changes in the environment more serious than ever before.

The essential feature in the environment protection is that many problems can be solved only on the level of world community. Therefore, the planning of protection against pollution by human society as a whole is imperative today and in the near future. It is necessary to develop an international program to study data on land, forest, atmospheric and oceanic resources, both renewable and non-renewable. It is the joint

efforts of many scientists and special public organizations that can deal with the problem and take necessary measures to protect the environment.

It is still a big job and much remains to be done. However, scientists are confident that planned actions of all countries can eliminate pollution and achieve successes in purifying air, water and soil and in safeguarding natural resources. At the same time one must realize that social and political circumstances may stand in the way of further progress in this field.

## **2. Answer the questions:**

1. What is this text about? 2. What is ecology? 3. How does water (air) become polluted? 4. Why is the problem of water pollution becoming a global problem?

## **3. Read and translate the following international words:**

Global, resources, problem, ecology, proportion, era, territory, ocean, oceanic, situation, atmosphere, process, climate, balance, experiment, social.

## **4. Read and translate the following words:**

Environment, pollution, achieve, success, successful, successfully, purify, air, natural, however, job, remain, mankind, reach, special, especially, serious, throughout, world, knowledge, advance, eliminate, purpose, scale, weather, essential, therefore, data, joint, measure, realize, circumstance.

## **5. Answer the questions according to the example:**

*What is one of the most important problems for mankind now? (the problem of pollution and ecology).*

*The problem of pollution and ecology is one of the most important problems for mankind now.*

1. What problem is becoming a global problem? (the problem of air and water pollution). 2. What makes it possible to eliminate air and water pollution? (scientific knowledge and technological advance, good will and large investments). 3. What are scientists in industrially developed countries currently working on? (the theory of interaction of the atmospheric and oceanic global processes). 4. What factors are slowly changing the global climate and water balance? (the growth of population, industrialization and use of resources). 5. What actions are necessary to take to deal successfully with the problem of protecting the environment throughout the world? (planning, developing international programs to study ecological data, joint efforts of scientists and special public organizations).

## 6. Read and translate the following text without a dictionary:

It is difficult for mankind to predict changes in the environment accurately. It is known that natural changes in weather and climate may have more catastrophic global effects than human activity. But scientists are developing a new concept that can help make such prediction more accurately. It is based on our understanding that the Earth is an integral system. Its parts – oceans, atmosphere, land or life – cannot be understood in isolation to predict changes in the most accurate way. Modern scientific and technological progress made it possible to use new technologies for that purpose. That satellites can control physical, chemical, biological and geological changes on a global scale is well-known now. One must also know that the study of environmental problems with the help of satellites is becoming international. Russia, the US, France, Japan, Canada, India, China and Italy are planning to send their satellites in both polar and geostationary orbits.

## 7. Read and translate the text 2.

### Text 2. LAST CHANCE FOR MOTHER EARTH?

*(From Scientific American)*

man's intrusion upon nature - вторжение человека в природу

to intrude upon - вторгаться

to violate the laws of nature - нарушать законы природы

to destroy the balance - нарушать равновесие

to combat pollution - бороться с загрязнением атмосферы

to be faced with the problem of - стать перед проблемой

environment - окружающая среда

industrial waste - промышленные отходы

to govern the process - управлять процессом

to harm - наносить ущерб

to be aware of the consequences - осознавать последствия

radioactive fallout - радиоактивные осадки

to affect nature - влиять на природу

to threaten - угрожать

to contaminate the atmosphere - загрязнять атмосферу

The U.S. environment is seriously threatened by the garbage of the economy. The Apollo 10 astronauts could see Los Angeles as a smudge from 25000 miles in outer space. What most Americans now breathe is closer to filth than to air. Americans know pollution well. It is car-clogged streets and junk-filled landscape – their country's visible decay.

California's air pollution is already so bad that on many days Los Angeles school children are warned not to breathe too deeply because of heavy smog conditions.

The United States is far from alone in its pollution and waste. The smog is dense in Tokyo. Some of Norway's legendary fjords are awash with stinking industrial wastes.

Sections of the Rhine River which flows through the industrial Ruhr Valley to the North Sea are so toxic that even hardy eels have difficulty surviving. In Sweden, not long ago, black snow fell on the province of Smoland.

The earth has its own waste-disposal system, but it has limits. The winds that ventilate the earth are only six miles high; toxic garbage can kill the tiny organisms that normally clean rivers. Meanwhile, modern technology is pressuring nature with tens of thousands of synthetic substances, many of which almost totally resist decay. This includes aluminum cans that do not rust, inorganic plastics that may last for decades, floating oil that can change the thermal reflectivity of oceans and radioactive wastes whose toxicity lingers for centuries.

Where do most of the pollutants end up? Probably in the oceans, which cover 70 per cent of the globe and have vast powers of self-purification. Yet even the oceans can absorb only so much filth; many scientists are worried about the effects on plankton – passively floating plants and animals, which produce about one fifth of the earth's oxygen. Emerging now is the importance of the science of survival – ecology. Trying to awaken a sense of urgency about the situation, ecologists sometimes do not hesitate to predict the end of the world. Yet they hold out hope too.

Ecology is the study of how living organism and the nonliving environment function together as a whole, or ecosystem, in the biosphere – that extraordinarily thin global envelope which sustains the only known life in the universe. Hundreds of millions years ago, plant life enriched the earth's atmosphere to a life supporting mixture of 20 per cent oxygen, plus nitrogen, argon, carbon dioxide and water vapour. The mixture has been maintained ever since by plants, animals and bacteria, which use and retain the gases at equal rates. The result is a closed system, a balanced cycle, in which nothing is wasted and everything counts.

The process is governed by distinct laws of life and balance. One is adaptation; each species finds a precise niche in the ecosystem. Another law is the necessity of diversity: the more different species in an area, the less chance that any single type will destroy the balance. Man has violated these laws – and endangered nature as well as himself.

A primitive community could harm only its own immediate environment. When it ran out of food, it had to move on or perish. But a modern community can destroy its land and still import food, thus possibly destroying ever more distant land without knowing or caring. Technological man forgets that his pressure upon nature may provoke revenge.

What most appalls ecologists is that technological man remains so ignorant of his impact. Neither the politicians nor the physicists who developed the first atomic bomb were fully aware of the consequences of radioactive fallout. The men who de-signed the automobile did not foresee that its very success would turn cities into parking lots and destroy greenery in favour of highways, all over the world.

Man's inadvertence has even upset the interior conditions of the earth. Wherever huge dams are built the earth starts shuddering. The enormous weight of the wa-ter in the reservoirs behind the dams puts a new stress on the subsurface strata. In conse-quence the earth quivers.

If technology got man into this environment crisis ant pollution mess, surely tech-nology can get him out of it again.

There is no lack of hopeful ideas for balancing the environment and the most en-couraging today is the swell of public opinion. We are at least starting to combat gross pollution. Even so, real solutions will be extremely difficult and expensive. Ideally, en-tire environment should be subjected to computer analysis. Whole cities and industries could measure their inputs and outputs via air, land and water. But this is a far-off dream. Far more knowledge is needed.

Even the simplest ecosystem is so complex that the largest computer cannot fully unravel it.

Technological man is bewitched by dangerous illusion that he can build bigger and bigger industrial society with scant regard for the iron laws of nature. Pessimists argue that only a catastrophe can change that attitude – too late. By contrast, the hopeful ecol-ogist put their faith in man`s ability.

## **8. Read and translate the following words and word-combinations**

Garbage, smudge, breathe, decay, synthetic substances, radioactive wastes, linger, self-purification, filth, carbon dioxide, vapour, govern, species, violate, immediate envi-ronment, subjected to computer analysis, bewitched.

## **9. Agree or disagree with the statements given below. Use the following phrases:**

1. What most Americans now breathe is very clean air and they have no idea about pol-lution.
2. Some other countries are faced with the same problem of pollution and waste as the U. S.
3. Modern technology does not affect nature in any way.
4. We needn't worry about the resources of our environment for they are inexhaustible.
5. The oceans can absorb as much filth as necessary.
6. It is plants that help maintain the mixture of oxygen, nitrogen, carbon dioxide and water vapour.
7. Ecology is a linguistic science.

8. Man has violated laws of nature and is going to pay for it.
9. When the primitive community ran out of food it perished.
10. The men who designed automobiles knew only too well that some day the automobiles would turn cities into parking lots and destroy all the greenery in them.
11. More attention ought to be paid to ecology.
12. We are actually ruining our own habitat.
13. It will be very difficult to balance the environment now.
14. Technical progress has greatly affected nature.
15. The big cities of today are not faced with any important problems such as traffic and so on.
16. A catastrophe is inevitable and there's no solution to the problem.

**10. Sum up discussion. Use the following phrases:**

*Summing it up... On the whole...*

*Summarizing the discussion I'd like to say that...*

**Model:** The garbage of economy is a serious threat to our environment.

*Summing it up* I'd like to say that the garbage of economy is a serious threat to our environment.

1. Pollution has grown into an urgent problem.
2. Nature is being seriously damaged by civilization.
3. Immediate measures must be taken to change the grave situation.
4. Politicians and scientists must realize full well dangers we are faced with.
5. The consequences of this violation of nature are hard to foretell.
6. Measures must be taken to save the plankton of oceans.
7. The problem of man and biosphere is very acute.
8. Radioactive fallout must be strictly controlled.
9. Computers must be of much help in solving the problem.
10. Technology will help man to get out of this critical situation.

**11. Comment upon the following problems.**

1. Modern technology and its impact upon nature.
2. The resources man has been using for centuries are not inexhaustible and there is an urgent need for an efficient research into our environment.
3. How do you picture the development of science in ten years' time

**12. Dispute the problems given below. The group can be divided into two opposing parties, each advocating their viewpoint.**

**Use the following phrases:**

*It must be admitted that...*

*My point is that...*

*It seems reasonable to assume...*

1. There can hardly be any solution to the problem raised in the text. A catastrophe is inevitable.
2. Big cities are now becoming self-defeating for their growth entails numerous insoluble problems. They ought not to be developed, renewed or replanned.
3. Nature is being destroyed by growing civilization. We can hardly stop or prevent it.

### **13. Read and translate the text 3.**

#### **Text 3. THE QUALITY OF ENVIRONMENT**

emissions – выбросы в атмосферу

pollutants – загрязняющие примеси

automobile exhausts – автомобильные выхлопные газы

to expose to air pollution – подвергаться воздействию воздушного загрязнения

portable water – питьевая вода

water pipe network – городской водопровод

ferrous metallurgy – черная металлургия

mechanical engineering industry – машиностроение

non-ferrous metallurgy – цветная металлургия

eroded soil – эродированная почва

degrading land – приходящая в упадок почва

coniferous forest – хвойный лес

Poisonous atmospheric emissions by Russia's industry were close to 32 m tons in 1991. Russia's European part accounts for nearly 65% of the country's industrial air pollution. Automobile exhausts in Russian cities contaminated the air with another 21 m tons of pollutants in 1990. Some 50 m people in Russia were breathing air with harmful content amounting to 10 MAC; over 60 m were exposed to air pollution of between 5 and 10 MAC. (Maximum admissible concentration).

In 1991 the water run-off of some southern rivers was decreasing at a progressive rate, as a result of human economic activity. A lot of Russia's small rivers, most badly affected by human activity throughout the last 10 or 15 years, were deteriorating rapidly. The quality of portable water in Russia is far from satisfactory. About a quarter of municipal water pipe networks and one-third of industrial ones carry water which was not properly purified. The most common water surface pollutants include petroleum products, phenols, organic matter, copper and zinc compounds, etc. Surface water is heavily polluted by ferrous and non-ferrous metallurgy, the coal, oil, gas, chemical



and petrochemical industries, farms, municipal drainage, etc. chemicals are washed in large quantities into rivers and lakes from adjacent areas. Livestock farms, pastures and sown land are responsible for high content of biological and organic matters in water.

The ozone content in the atmosphere has been decreasing lately in high and medium latitudes of the Northern Hemisphere. The ozone layer depletion is especially fast (10% in ten years) in the lower stratosphere, that is, at altitudes between 15 and 20 kilometers.

Many small and detached fields were overgrown with woods and shrubs. Soils on large areas were eroded, flooded or turned into marsh. Arid lands are degrading everywhere in Russia, giving way to deserts. Soils contaminated with heavy metallic isotopes, oil products and other toxic substances lay in rings dozen of kilometers wide around big cities and centers of metallurgical, chemical petrochemical and mechanical engineering production.

The national timber wealth in standing trees totals 81.6 bn cubic meters. Over the past 20 years, timber cutting and forest fires reduced the country's reserve of ripe wood in coniferous forests by 8 bn cu meter, including by 3 bn cu m. over the past 5 years.

#### **14. Read and translate the following international words:**

Atmospheric, industry, automobile, progressive, economic, human, activity, satisfactory, industrial, portable, products, phenols, zinc, metallurgy, chemical, ozone, biological, organic, stratosphere, eroded, isotope, toxic, petrochemical, production, reserve, substance.

#### **15. Practise the pronunciation of the following words:**

Exhausts, content, admissible, throughout, deteriorating, purify, water surface, quantify, adjacent, decrease, latitude, altitude, flooded, dessert, wealth, timber, reduce, ripe, coniferous, include.

#### **16. Sum up a discussion. Use the following phrases:**

Summing it up... On the whole...

Summarizing the discussion. I'll like to say that...

**Model:** The garbage of the economy is a serious threat to our environment. Summing it up I'd like to say that the garbage of economy is a serious threat to our environment.

1. The atmosphere, rivers, lakes and underground stores hold less than 1% of all fresh water and this tiny amount has to provide the fresh water needed to support the Earth population.

2. Fresh water is a precious resource and the increasing pollution of our rivers and lakes is a cause for alarm.

3. Industry often uses water for cooling processes sometimes discharging large quantities of warm water back into river.
4. Raising the temperature of the water lowers the level of dissolved oxygen and upsets the balance of life in the water.
5. Contaminants in the soil can adversely impact the health of animals and humans.
6. Everywhere in the world where people change a natural ecosystem into agriculture, the land degrades.
7. Soil can degrade without actually eroding. It can lose its nutrients and soil biota.
8. Probably one of the most dangerous disasters that can be averted to a great extent is a forest fire.
9. When out of control, forest can cause extensive damage not only the forest cover, but also to human life and the environment.

**17. Agree or disagree with the following statements given below.**

1. Nature means simply what is around us.
2. We never know the world of water till the well is dry.
3. There are no passengers on Spaceship Earth. We are all crew.
4. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong we may begin to use it with love and respect.
5. There is enough oxygen in the water and in the atmosphere.
6. Rivers are not polluted, because factories don't produce a lot of waste and don't pour it into rivers.
7. Economic advance is not the same thing as human progress.
8. Take care of the earth and she will take care of you.
9. The ozone layer in the atmosphere protects us from dangerous radiation.
10. Understanding of laws of nature does not mean that we are immune to their operations.
11. The universe is not required to be in perfect harmony with human ambition.
12. Man is a complex being: he makes deserts bloom and lakes die.
13. In its broadest ecological context, economic development is the development of more intensive ways of exploiting the natural environment. Give the examples.
14. The system of nature of which man is a part tends to be self-balancing, self-adjusting, self-cleaning. Not so with technology.

**18. Comment upon the following problems.**

1. In efficiency of timber use Russia lags far behind other countries.
2. Over 80% of timber in Russia is logged in clear cutting.
3. Fortunately there are many ways to reduce erosion.

**19. Fill in the blanks with the following words and word-combinations and translate the text 3.**

*Careful, to say nothing of, in addition, oil, urbanization, to result in, according to, growth of industry, contamination, crude oil, harmful, laundry, poisonous waterways, due to, catastrophe, substances, discharging, depredations, tons.*

*There are many causes of water pollution which may be classified into four main categories*

*1. pollution from chemicals, 2. pollution from solids, 3. pollution from radio-active wastes, 4. pollution from living matter.*

### **Text 3. WATER POLLUTION**

immense urbanization – колоссальный рост городов.

contamination of water from fertilizers – загрязнение воды удобрениями.

tons of detergents – моющие средства.

crude oil – неочищенная сырая нефть.

refuse – отходы.

to make worse – ухудшать.

to bring about degradation – приводить к деградации.

heavy expenditures - значительные расходы.

mass campaign – массовая компания.

sad statistics – неутешительные данные статистики

The first two causes are perhaps more dangerous than the others due to the tremendous \_\_\_\_\_ and the immense \_\_\_\_\_ in large cities. Pollution from chemicals and solids includes \_\_\_\_\_ of water from fertilizers and pesticides, acids, alkalis, mercury and cadmium (i.e. from heavy metals) which are widely used in industry \_\_\_\_\_ detergents from washing \_\_\_\_\_ are also dumped into the water. The above-mentioned \_\_\_\_\_ are extremely \_\_\_\_\_ for the living matter and once found in water in large quantities they kill everything and turn our rivers into \_\_\_\_\_. A remarkable illustration of such pollution is the Thames in England and the Rhine in Europe - up until recently there was no fish in these two rivers.

The banks of these rivers and many others represent a sad picture of cans, plastic containers, paper and refuse. Furthermore man not only pollutes water in the rivers and lakes, but he also pollutes seas and oceans as well. Let us take for example oil from \_\_\_\_\_ tankers and supertankers. As we know each supertanker is capable of carrying hundreds upon thousands of \_\_\_\_\_. Sea water is used to clean the tankers after \_\_\_\_\_ and to make things still worse almost every year \_\_\_\_\_ sad statistics there occurs at least one shipwreck in the sea \_\_\_\_\_ bad weather conditions, faulty navigation aids, grounding, etc. This \_\_\_\_\_ tremendous contamination of sea and the sea shore too. One of

the vivid examples of such a disaster was the wreckage of the supertanker TORREY CANYON in the English Channel. Not only the sea but the beautiful beaches in England and in France were covered with oil.

This \_\_\_\_\_ brought about huge losses of sea birds and animals \_\_\_\_\_ the heavy expenditures by the French and British governments in a mass clean-up campaign.

We should remember that we are all passengers aboard the ship “Earth”. We must be more \_\_\_\_\_ and must do everything to protect our beautiful planet from the \_\_\_\_\_ of man, i.e. ourselves.

## **20. Read and translate the following international words:**

Urbanization, classify, chemicals, radioactive, pesticides, mercury, cadmium, ocean, heavy metals, contamination, illustration, result, substances, tons, supertanker, passengers, protect, campaign.

## **21. Practise the pronunciation of the following words:**

Cause, dangerous, tremendous, immense, fertilizer, detergent, above-mentioned, dump, quantity, turn into, discharging, remarkable, poisonous, occur, due to, ship-wreck, refuse, wreckage, faulty, furthermore, laundry, according to, loss, worse, beautiful.

## **22. Read the text and give English equivalents to the following Russian words and word-combinations:**

Бурный промышленный рост, в соответствии с, разделить на, бытовые отходы, широко применяться, в больших количествах, превратить в, до недавнего времени, загрязнить моря и океаны, происходить, приводить к, вызывать, колоссальный рост городов, тонны моющих средств, сырая нефть, отходы, загрязнение воды, значительные расходы правительств, ухудшать, гибель морских птиц и животных, неутешительные данные статистики, массовая компания.

## **23. Agree or disagree with the statements given below. Use the following phrases:**

*That's right*

*I don't think so*

*Exactly*

*You're wrong there*

*I fully agree with you*

*Just the reverse*

1. The causes of water pollution may be classified into two main categories pollution from solids and pollution from living matter.
2. Pollution from chemicals is unknown to large cities inhabitants.
3. Chemicals and solids contaminate water.
4. Fertilizers and pesticides are seldom used in industry.

5. The above-mentioned substances including acids, mercury and cadmium kill everything.
6. The Thames in England and the Rhine in Europe bound in fish.
7. Sea water is never used to clean the tankers after discharging.
8. The shipwrecks occur due to bad weather conditions, faulty navigation aids.
9. Sea catastrophes do not cause tremendous contamination of sea and the sea shore
10. The supertanker Torrey Canyon catastrophe brought about losses of sea birds and animals.
11. Water pollution doesn't affect people's health.
12. We do everything to protect our planet.

**24. Sum up a discussion. Use the following phrases:**

*Summing it up...*

*On the whole ...*

*Summarizing the discussion...*

*I'd like to say that...*

1. Powerful purifying systems are urgently needed in Russia.
2. Water contamination has grown into a serious problem.
3. Oil transporters should meet the ecological safety requirements.
4. Water pollution is inevitable in big cities.
5. Contamination from chemicals could hardly be avoided today.
6. The problem of biosphere is very acute.
7. Ecological education of individuals and preventive measures can do more than penalties of the violators.
8. Cars make the human life dependable, thus aggravating the hard ecological situation in small and big cities.
9. Water transport is harmful for sea nature.

**25. Comment upon the following problems:**

1. Nature is threatened by technological progress.
2. Human mankind acidified lakes and streams and they can't support fish, wildlife, plants or insects.
3. Acid rain is killing forests.
4. Water contamination could lead to shortage of safe drinking water.
5. Civilization has upset nature's sensitive equilibrium polluting rivers and oceans with industrial wastes.
6. Computers project that between now and the year 2030 sea levels would rise by several metres, flooding coastal area and ruining vast tracts of farmland.

**26. Dispute the problems given below. The group can be divided into two opposing parties, each advocating their viewpoint. Use the following phrases:**

*It must be admitted that ...*

*My point is that...*

*It seems reasonable to assume...*

1. We are obliged to remove factories and plants from cities, redesign and modify purifying systems for cleaning and trapping harmful substances.
2. We must review our wasteful, careless ways of life, we must consume less, recycle more, conserve wildlife and nature.
3. We should act according to the dictum «think locally, think globally, act locally».
4. We are obliged to protect and increase the greenery.
5. 159 countries – members of the UNO hold conferences and set up environmental research centres.
6. The 5th of June is proclaimed the World Environmental Day by the UNO and is celebrated every year.

### **Unit 3**

#### **MASS MEDIA AND THEIR ROLE IN CONTEMPORARY SOCIETY**

**1. Read and translate the following international words:**

Politics, communication, process, individual, group, term, technical, type, publication, classify, electronically, function, specific, totalitarian, democratic, electorate, idea, contrast, rehabilitation, paralyze, focus, idealize.

**2. Practise the pronunciation of the following words:**

Lament, among, citizen, government, heterogeneous, disperse, audience, circulation, relative, population, through, target, entertainment, interpreting, influence, agenda, socialize, moreover, official, accountable, dual, capability, view, although, prominent, particularly, doggedly, resignation, award-winning, severely, wounded.

**3. Read the text and give English equivalents to the following Russian words and word combinations:**

Обычная жалоба, не ладят, для того, чтобы жить мирно, передача информации, от одного человека, разнородная аудитория, живущая в разных местах, основные примеры, тиражи, обычно, средства вещания, для целевого общения, СМИ, зарабатывать деньги, главным образом, развлекательные мероприятия, влияние на общественное мнение, формировать план работы, знакомить граждан с политической жизнью, способствовать, ответственный за свои действия, заметный, кинофильмы, наиболее сильные политические идеи, с упорством разоблачали, перенес болезненную реабилитацию, превратился.

#### 4. Read and translate the text:

##### Text 1. PEOPLE, GOVERNMENT AND COMMUNICATIONS

lament - жалоба

to get along – ладить, жить мирно

heterogeneous – разнородный, различный

disperse – рассеиваться

technical device – техническое устройство, прибор

circulation —тираж

relative to – относительно, касательно

broadcast media – средства вещания

targeted - целенаправленный

entertainment – развлекательное мероприятие

agenda – повестка дня, план действий

promoting – способствующий

to be responsible to – ответственный за что-либо

moreover –более того

electorate - избиратели

accountable for – ответственный, подотчетный

voter – голосующий, избиратель

capability - способность

reflect – отражать

shape - формировать

prominent - заметный

motion pictures – кинофильм

convey – нести, содержать (информацию)

doggedly – упрямо, упорно

expose - разоблачать

resignation – уход в отставку

paramilitary - военизированный

seamy – зд. грязный

«We never *talk* anymore» is a common lament among people who are living together but not getting along very well. In politics, too, citizens and their government need to communicate in order to get along well. **Communication** is the process of transmitting information from one individual or group to another. Mass **communication** is the process by which individuals or groups transmit information to large, heterogeneous, and widely dispersed audiences. The term **mass media** refers to the technical de-

VICES employed in mass communication. The mass media are commonly divided into two types:

**1. Print media** communicate information through the publication of written words and pictures. Prime examples of print media are daily newspapers and popular magazines. Because books seldom have very large circulations relative to the population, they are not typically classified as a mass medium.

**2. Broadcast media** communicate information electronically through sounds or sights. Prime examples of broadcast media are radio and television. Although the telephone also transmits sounds, it is usually used for more targeted communications and so is not typically included within the mass media.

The mass media are in business to make money, which they do mainly by selling advertising through their major function, entertainment. We are more interested in the five specific functions the mass media serve the political system: *reporting* the news, *interpreting* the news, *influencing* citizens' opinions, *setting the agenda* for government action, and *socializing* citizens about politics.

Our special focus is on the role of the mass media in promoting communication from a government to its citizens *and* from citizens to their government. In totalitarian governments, information flows more freely in one direction (from government to people) than in the other. In democratic governments, information must flow freely in both directions; a democratic government can be responsible to public opinion only if its citizens can make their opinions known. Moreover, the electorate can hold government officials accountable for their actions only if voters know what their government has done, is doing, and plans to do. Because the mass media provide the major channels for this two-way flow of information, they have dual capability of reflecting and shaping our political views.

Although this text concentrates on political uses of the four most prominent mass media - newspapers, magazines, radio, and television - you should understand that political content can also be transmitted through other mass media, such as recording and motion pictures. Rock actors like Peter Dinklage and U2 often express political ideas in their music.

And motion pictures often convey particularly intense political messages. In the 1976 film *All the President's Men*, Dustin Hoffman and Robert Redford played Carl Bernstein and Bob Woodward, the two *Washington Post* reporters who doggedly exposed the Watergate scandal in a series of articles that led to President Richard Nixon's resignation in 1974. This motion picture dramatized a seamy side of political life that contrasted sharply with an idealized view of the presidency. In his series of "Rambo" films Sylvester Stallone played a paramilitary superhero that solved difficult international problems through combat. In contrast, the award-winning *Born on the Fourth of July* starred Tom Cruise in the real-life story of Ron Kovic, who enlisted in the marines and was severely wounded in Vietnam. Paralyzed from the waist down, he underwent



painful rehabilitation and turned into an antiwar-activist. This film presents a very different view of fighting.

**5. Answer the questions:**

1. What is the difference between 'communication' and 'mass communication'?
2. What types are the mass media divided into?
3. What are the mass media main functions?
4. What conveys particularly intense political messages?

**6. Choose the right variant:**

*2.1. Communication is*

- a) speaking on the telephone
- b) the transmitting information from one to another object
- c) individuals transmit information to large audience
- d) a device for transmitting information

*2.2. The mass media are commonly divided into ..... types.*

- a) three
- b) five
- c) four
- d) two

*2.3. Which doesn't refer to the print media?*

- a) books
- b) magazines
- c) newspapers
- d) posters

*2.4. Telephone isn't typically included within the mass media because*

- a) the quality of the sound is bad
- b) radio and television are more interesting for audiences
- c) it doesn't transmit information through sounds or sights
- d) it is commonly used for more specific communications

*2.5. The mass media make money by*

- a) selling valuable information
- b) interpreting the news
- c) selling advertising through entertainment
- d) reporting the news

*2.6. Mass media reflect and shape our political views because*

- a) they are responsible to public opinion
- b) they provide the major channels for two-way flow
- c) they report topical news
- d) they concentrate on political issues

## **7. Read and translate the text:**

### **Text 2. THE MASS MEDIA**

The mass media transmit information to large, heterogeneous, and widely dispersed audiences through print and broadcasts. The main function of the mass media is entertainment, but the media also perform the political functions of reporting news, interpreting news, influencing citizens' opinions, setting the political agenda, and socializing citizens about politics.

The mass media in many countries are privately owned and in business to make money, which they do mainly by selling space or air time to advertisers. Both print and electronic media determine which events are newsworthy, a determination made on the basis of audience appeal. The rise of mass-circulation newspapers in the 1830s produced a politically independent press in the United States and Europe. In their aggressive competition for readers, those newspapers often engaged in sensational reporting, a charge sometimes leveled at today's media.

The broadcast media operate under technical, ownership, and content regulations set by the government, which tend to promote the equal treatment of political contests on radio and television more than in newspapers and news magazines.

The major media maintain staffs of professional journalists in major cities across the world. All professional journalists recognize rules for citing sources that guide their reporting. What actually gets reported in the media depends on the media's gatekeepers, the publishers and editors.

Although more people today get more news from television than newspapers, newspapers usually do a more thorough job of informing the public about politics. Despite heavy exposure to news in the print and electronic media, the ability of most people to retain much political information is shockingly low-and less than it was in the mid-1960s. It appears that the problem is not with the media's inability to supply quality news coverage, but the lack of demand for it by the public. The role of the news media may be more important for affecting interactions among attentive policy elites than in influencing public opinion.

The media's elite including reporters from the major television networks tend to be more liberal than the public.

From the standpoint of majoritarian democracy, one of the most important effects of the media is to facilitate communications from the people to the government through the reporting of public opinion polls. The media zealously defend the freedom of the press, even to the point of encouraging disorder through criticism of the government and the granting of extensive publicity to violent protests, terrorist acts, and other threats to order.

## **8. Develop the following ideas:**

1. The message of an article or a TV programme is more important than the form.
2. The media zealously defend the freedom of the press.
3. The media's elite tend to be more liberal than the public.
4. To facilitate communications from the people to the government is one of the most important effects of the media in democratic countries.

## **9. Additional questions:**

1. What electronic media are of importance nowadays?
2. What helps newspaper publishers to win the competition for readers?

## **10. Read and translate the text:**

### **Text 3. THE INTERNET**

The Internet is a magnificent global network with millions and millions of computers and people connected to one another where each day people worldwide exchange an immeasurable amount of information, electronic mail, news, resources and, more important, ideas.

It has grown at a surprising rate. Almost everyone has heard about it and an increasing number of people use it regularly. The current estimate is that over 70 million people are connected, in some way, to the Internet – whether they know it or not.

With a few touches at a keyboard a person can get access to materials in almost everywhere. One can have access to full-text newspapers, magazines, journals, reference works, and even books. The Web is one of the best resources for up-to-date information. It is a hypertext-based system by which you can navigate through the Internet. Hypertext is the text that contains links to other documents. A special program known as «browser» can help you find news, pictures, virtual museums, electronic magazines, etc. and print Web pages. You can also click on keywords or buttons that take you to other pages or other Web sites. This is possible because browsers understand hypertext markup language or code, a set of commands to indicate how a Web page is formatted and displayed.

Internet Video conferencing programs enable users to talk to and see each other, exchange textual and graphical information, and collaborate.

Internet TV sets allow you to surf the Web and have e-mail while you are watching TV, or vice versa. Imagine - watching a film on TV and simultaneously accessing a Web site where you get information on the actors of the film. The next generation of Internet-enabled televisions will incorporate a smart-card for home shopping, banking and other interactive services. Internet-enabled TV means a TV set used as an Internet device.

The Internet is a good example of a wide area network (WAN). For longdistance or worldwide communications, computers are usually connected into a wide area network to form a single integrated network. Networks can be linked together by telephone lines or fibre-optic cables. Modern telecommunication systems use fibreoptic cables because they offer considerable advantages. The cables require little physical space, they are safe as they don't carry electricity, and they avoid electromagnetic interference.

Networks on different continents can also be connected via satellites. Computers are connected by means of a modem to ordinary telephone lines or fibre-optic cables, which are linked to a dish aerial. Communication satellites receive and send signals on a transcontinental scale.

### **11. Answer the questions:**

1. What is the Internet? 2. How many people are connected to the Internet today? 3. What is Hypertext? 4. What are computers usually connected into? 5. What advantages do fibre-optic cables offer?

### **12. Read and translate the text:**

#### **Text 4. A "FREE PRESS" MUST MEAN JUST THAT**

*(by Adriana Lopez)*

waffle – *ам. жарг.* болтать, пустословить

toll - потери

misdeed- преступление, злодеяние

trafficking - торговля

volatile – непостоянный, нестабильный

flawed – порочный, с изъяном

ambiguity – неясность, двусмысленность

loophole - лазейка

guerrilla – партизанский

withdraw – отзываться

take for granted – считать (что-либо) доказанным/ не требующим доказательства, само собой разумеющимся.

We take freedom of speech for granted in the United States, but in the rest of the hemisphere it is the exception, not the rule. The Organization of American States met to discuss this issue and, for a while, it looked as if the United States was waffling.

A draft of the Inter-American Declaration on Freedom of Expression stated that the OAS is «convinced that the unlawful restrictions on the exercise of freedom of expression not only violate individual human rights but threaten democratic society itself».

But it also said that «freedom of expression may be subject to certain restrictions established under domestic law and international obligations».

That loophole could have licensed Latin American countries to ban – and punish – members of the press.

Journalists in Latin America already face enough threats. In the last decade the death toll has reached nearly 200. Thousands of journalists are being severely punished for exposing the misdeeds of their countries' powerful people. Attacks come as a direct result of their work. Reporters are subjected to harassment, kidnapping, torture, imprisonment and murder.

Gustavo Gorriti, a Peruvian journalist and recipient of the 1998 International Press Freedom Award of the Committee to Protect Journalists, has been continually harassed by the Peruvian and Panamanian governments. Gorriti has said that any journalist in Latin America who engages in serious, substantive reporting «will almost certainly face certain forms of harassment. You are literally taking your life in your hands».

Latin America's rocky road from dictatorship to democracy – with drug trafficking, government corruption, left-wing guerrilla groups and paramilitary organizations all putting up obstacles – has made journalism one of the most dangerous careers in this volatile region. Peruvian novelist and one time presidential candidate Mario Vargas Llosa once noted that «a fully free press won't be secure until democratic values and a rule of law are more firmly embedded».

Fortunately, Victor Marrero, U.S. ambassador to OAS, withdrew the flawed draft late last month, citing «ambiguities which should be clarified». He requested that the draft return to a working group for further revision before being voted on. This belated move at least puts the United States on the right track. The U.S. government should not back any kind of press restriction, and Latin America should not have to deal with double standards when it comes to freedom.

### **13. Questions for discussion:**

1. Is freedom of speech taken for granted in your country?
2. Are journalists in your country subjected to any forms of harassment? If yes, why?
3. Freedom of expression may be subject to certain restrictions. Do you agree with this statement?

## **Unit 4**

### **SCIENCE AND SOCIETY IN THE USA**

**1. Read and translate the text. Comment on the statement: «Science is a powerful engine by which the genius of the few is magnified by the talents of the many for the benefits of all».**

## Text 1. SCIENCE AND SOCIETY IN THE USA

entitlement – зд. установленная норма (панацея)

maintain – сохранять

generate – порождать

outright – полный

frustratingly – потрясающе, слишком уж

volatility – смена, перемена

commitment – обязательство (зд. вклад)

vistas – перспективы

embark – начинать (дело), зд. основываться

superstring – суперсерия или суперряд

give an account – объяснять, описывать

resolution – зд. расширение

underpinning – зд. свидетельство, пример

forestall – предвосхищать

poise – зд. склоняться (балансируют)

pinnacle – зд. кульминация

Science on the scale that it exists and is needed today can, however, be maintained only with large amounts of public support. Large-scale public support will be provided only if science and technology are meeting the critical needs of society. Intellectual progress, as measured by advances in specific public disciplines, is not in itself sufficient to generate such support. Perhaps it should be, but it is not. Public support for science may be wise policy, but is not an entitlement.

The central problem is that the costs of meeting the needs of society are too high, and the time scale for meeting them is too long. Both the ideals and the pragmatics of American society are based on improvement in the quality of life. We expect better health care, better education, and economic security. We expect progress towards the reduction, if not outright elimination of poverty, disease, and the environmental degradation.

Progress towards these goals has recently been frustratingly slow and increasingly expensive. The heavy costs of providing and improving health care and education are examples.

The situation has produced a volatility in public opinion and mood that reflects a lack of confidence in the ability of government and other sectors of society, including science and technology, to adequately address fundamental social needs.

If this mood hardens into a lack of vision, of optimism, of belief in the future, a tremendous problem for science will result. Science, in its commitment to innovation and expanding frontiers of knowledge, is a thing of the future.

The vistas of science are inspiring. Condensed matter physics is embarked on materials by design, nanotechnology and high temperature superconductivity, each containing the seeds of new industries as well as new scientific understanding. Molecular biology is in full bloom with a vast potential for further intellectual progress, betterment of human (and plant and animal) health, and commercialization. Neuroscience seems poised for dramatic progress.

Research into the fundamental laws of physics is aiming at a pinnacle. There is a candidate theory - the superstring theory – which is proposed as a unification of all the known fundamental forces in nature and which is supposed to give an account, complete in principle, of all physical phenomena, down to the shortest distances currently imaginable. At the largest scales of distance, observational astronomy is uncovering meta-structures which enlarge the architecture of the universe a deepening of the problem of cosmology preliminary to its resolution.

Underpinning much of this progress, and progress in countless other areas as well has been the emergence of scientific computing as an enabling technology.

All this is first-rate science. All this is not enough – either to forestall change or to ensure adequate support for science in the present climate. Why it is not enough – and what else is required – are the subjects of a special inquiry.

## **2. Discussion.**

1. Are there statements in the text that you disagree with? What are they?
2. Are you aware of the latest achievements in your field of science? What are they?
3. Do you think the achievements of science are not sufficient to ensure adequate support for science?
4. If you were in power what would you do to support science in Russia?

## **PART 2. ESPECIAL FIELD OF SCIENCE AND RESEARCH**

### **NUTRITION OF HORSES**



Proper nutrition is essential for the health of horses. Deficient or imbalanced rations or poor feeding management can cause deficiency diseases, decreased resistance to in-

fectious diseases, predisposition to lameness, decreased performance, and digestive problems such as colic and enterotoxemia.

Digestion – the process which releases nutrients from feeds for use by the body – begins in the mouth where food is ground and mixed with saliva. Proper dental care such as floating of teeth is necessary so food is chewed properly. Food then travels to the stomach where the chemical breakdown starts. The horse's stomach is relatively small and horses seldom vomit. Overfeeding can cause distention of the stomach and signs of colic (a general name for abdominal pain). Horses fed large amounts of grain should be fed two or more times daily, to reduce the incidence of colic.

The small intestine is a major site of digestion and absorption of many nutrients. Good parasite control is necessary for optimum function of the small intestine. Parasites not only reduce feed utilization, but can cause colic.

The large intestine consists of the cecum and colon. It has a large population of micro-organisms (bacteria and protozoa) which digest the fiber in plant materials. If feed changes are made rapidly, the microorganisms do not have time to adapt. Excessive gas production, colic, and diarrhea may result: so make changes gradually. A change period of 10 days is best, but 5 may suffice.

**Nutrient Guidelines.** The horse requires energy, protein, vitamins, minerals, and water. Overfeeding and underfeeding of energy are two of the most common feeding mistakes. Forages – such as hay and pasture – and grains are the most frequent sources of energy.

Grains usually contain 40 to 60 per cent more energy per pound of dry matter than do forages. But forages may contain adequate concentrations of energy to supply the energy needs of some classes of horses.

A non-pregnant, non-lactating mature horse that is not working hard could maintain body weight if fed 1.5 to 2 lbs of hay per 100 lbs of body weight. A pregnant mare (last third of gestation) may require some grain, perhaps 0.25 to 0.75 lb per 100 lbs of body weight in addition to hay. The intake of hay may also slightly decrease because the fetus fills up some of the body cavity. But some pregnant mares can obtain all the energy needed from good quality hay.

The amount of energy required by the lactating mare depends on the amount of milk she is producing. An average mare may require 0.25 to 1 lb of grain per 100 lbs of body weight in addition to hay or pasture.

A hard working horse such as a racehorse at the track may need 1.5 lbs of grain and 1.5 lbs of hay per 100 lbs of body weight. Rapidly growing foals may 0.25 lb of hay and 1.5 lbs of grain per 100 lbs of body weight.

The above guidelines are only rough estimates. There is considerable variation in energy metabolism among horses. The energy content among hays varies greatly. Energy requirements differ according to environmental temperature.

The eye of the feeder is important. If the horses are too fat, decrease the amount of grain; if too thin, feed more grain.



Keeping records of body weight obtained from scales or by estimating with tapes around the heart girth can be very useful when evaluating a feeding programme.

Protein is needed for maintenance and for production of new tissue. A deficiency of protein decreases rate of gain, causes a rough hair coat, and decreases appetite.

The young horse requires the greatest concentration of protein in the ration. The National Research Council recommends that horses weaned at 3 months of age be fed diets containing at least 16 per cent protein and horses weaned at 6 months need 14.5 per cent. Mature horses at maintenance need only 8 per cent protein. Pregnant or lactating mares need 11 to 12.5 per cent protein. Work does not greatly increase the protein requirement.

Proteins are composed of smaller units called amino acids. Feed protein is digested in the animal's body. Feed proteins that contain a good mixture of amino acids are called "high quality" proteins; those with a poor mixture are called "low quality" proteins.

Soybean meal is a reasonable source of amino acids for horses. Other vegetable protein source such as cottonseed meal and linseed meal contain a lower concentration of the amino acid lysine than that found in soybean meal.

Minerals are required for many functions. Two minerals that are required in greatest amounts are calcium and phosphorus. One of their primary functions is the formation of bone, but they have many other important roles.

An excess of phosphorus decreases calcium utilization and may result in nutritional secondary hyperparathyroidism (NSH) if diet has a low level of calcium. Horses with NSH have weak bones, become lame, and may have an enlarged head because of invasion of fibrous connective tissue.

Legume hays may contain 1 to 1.5 per cent calcium, but grass hay may contain only 3 to 4 per cent calcium. Grains contain almost no calcium.

Limestone is an excellent source of calcium for horses. Dicalcium phosphate contains calcium and phosphorus.

Vitamins are also required for many functions. Good quality forage is an excellent source of many vitamins. Excess vitamin A and vitamin D can be toxic.

Water is frequently neglected. Clean, fresh water should be provided.

## **WANDERLUST RULES THE WOLVERINE HEART**



Glacier National Park, Montana – Four biologists wearing headlamps surround an unconscious wolverine that lies flat on its back. They check a transmitter in its belly and fit another larger one around its neck. Then they inject the animal with the antidote to the drug that knocked it out, and place it in a box trap. An hour later, when the lid of the trap is opened, the animal runs into the forest. Every two hours the position of the wolverine is fixed by a geo-positioning satellite and recorded in the collar.

A few weeks later the wolverine is recaptured, and a record of its travels is downloaded into a laptop. The result confirms data that the researchers have accumulated over three years. Wolverines are wildly peripatetic.

The wolverine, a creature of the northern forests that resembles a small bear, is legendary for its strength and ferocity. Its hall mark is its insatiable need to keep moving. There is no other animal that moves like this every day.

An Austrian biologist named Peter Krott, who raised wolverines and wrote about them in his book “Demon of the North”, said one of his animals got caught in a leg hold trap and travelled home on three legs for weeks carrying the trap in its jaws, before collapsing on his doorstep.

The new research shows a wolverine keeps on moving at about 8 kilometres per hour. With broad feet that serve as snowshoes, it easily scrambles over 3,000 meter snow-covered mountains, and travels through forests, sometimes covering 40 kilometres back the next. A male’s home range is about 1,300 square kilometers, about the same as that of a grizzly bear, which is 10 times its size.

A male covers that territory to mate with three or four females and to look for the carcasses of moose or mountain goats that have perished, to hunt squirrels and insects or scrounge for berries.

Wolverines are also proving to have a family life unusual for carnivores. Males have been known to wait outside a trap for a captured mate. And no other young adult carnivores are known to maintain companionship with their caring fathers. But wolverine fathers stay in touch.

Fragmentation of habitat is also a concern. No one knows how the widely scattered wolverines stay in touch with one another, and there is worry that logging, roads, homes and other development may cut them off from the rest of the population. While the wolverine’s range has shrunk considerably in the last half century, some biologists argue that at this point there’s not enough data to show that the wolverine needs government protection. They need information before they understand the needs of the animal.

## IMMIGRANT FOX ALTERS PLANT LIFE ON ALASKA ISLANDS



Foxes may not graze, but a new scientific study describes how their arrival on Aleutian Islands destroyed rich grass lands and left only sparse tundra. The authors of the report say this transformation shows how an entire ecosystem may decline if just one new top carnivore shows up.

The inadvertent experiment began in the late 1700's and continued into the early 20th century as fur traders looking to expand the supply released nonnative arctic foxes and, in some cases, red foxes on more than 400 Alaskan islands.

The new habitats included much of the Aleutian archipelago that curves west toward Asia. Except for the occasional polar bear rafting on winter ice, the windswept islands had few predators before.

The botanical impoverishment that has resulted is the reverse of what usually happens when a new meat-eater comes along. "Traditionally, the predator eats the grazer; the grazer no longer eats the green stuff; and the habitat gets more green," said Dr. Donald Croll, a professor of biology at the University of California.

An example of the more usual routine is in Yellowstone National Park in the western United States, where returning wolves, preying on sapling-browsing elk and confining the wary survivors to areas where they can see wolves coming, have touched off a resurgence of willow, aspen and other vegetation.

The contrary effect in the Aleutians has a simple explanation. The grazers on these islands were grass and seed-eating Aleutian geese. The foxes drove the geese near extinction, which would have been a boon for grasses except that the foxes also feasted on the eggs and hatchlings of puffins, auklets and other ocean-feeding seabirds they found brooding almost everywhere.

Some islands lost almost all birds except for cliff-nesting species. And as ground-nesting birds faded, so did their nutrient-rich excrement, or guano, which had been a natural fertilizer.

Without the regular subsidy of nitrogen and potassium-rich nutrients brought in from the sea, grasses lost their competitive edge over tundra shrubs and herbaceous plants.

Vernon Byrd, a Fish and Wildlife Service biologist, has been paying attention to one ecosystem for decades. Despite foxes, the islands remain home to more than 10 million sea birds of 29 species. Mr. Byrd is an avid birder. For several years, Mr. Byrd and others in the refuge have been eradicating foxes with traps.

One of the cleanest islands is called Rat, which brings up another twist in a never-ending battle against alien, bird eating Aleutian predators. Shipwrecks are not uncommon. When a vessel runs ashore, Fish and Wildlife personnel work as hard to protect the land as they do to protect the sea from their contents. Rodents can run amok in sea-bird colonies too or, as Mr. Byrd put it, “rat spills are a lot worse than oil spills in the long term.”

## OPEN WIDE: DECODING THE SECRETS OF VENOM



The inland taipan, a three-meter-long Australian snake, is not a creature most people would want to bother. Drop for drop, its venom is the deadliest in the world, 50 times as potent as cobra venom. Its fangs are so long they can poke through the snake’s lower jaw. Its victims collapse in seconds and suffer a quick death.

Dr. Bryan Fry, a biologist from the University of Melbourne, hunts down inland taipans in dense cane fields. He grabs them by the head and squeezes venom from their fangs.

Dr. Fry’s goal is to decipher the evolution of snake venoms over the past 60 million years. Reconstructing their history will help lead to medical breakthroughs, he believes. For the past 35 years, scientists have been turning snake venoms into drugs. Not long ago, Dr. Fry and his colleagues filed a patent for a molecule found in the venom of the inland taipan that may help treat congestive heart failure.

Understanding of evolution of snake venoms will speed up these discoveries immensely. Dr. Fry predicted.

Snakes produce venom in special glands on either side of their upper jaw. When they strike their prey, they squeeze the gland, causing the venom to spurt out. Once venom molecules enter a snake’s prey, their intricate shapes allow them to lock onto particular receptors on the surface of cells or onto specific proteins in the bloodstream.

Some venom molecules can plug the channels that muscle cells use to receive signals from neurons to contract. Without the signals, the muscles go slack, leading to asphyxiation. Other venoms wreak havoc on the immune system, making it attack the prey’s organs. Still others loosen blood vessel walls, leading to shock and bleeding. Most venomous snakes produce a mixture of molecules.

Dr. Fry is able to identify all of the genes that are active in venom gland cells, and

then read their DNA sequence. About half of the genes that are active in a venom-gland cell produce well-known “housekeeping” proteins that are essential to any animal cell. Most of the others are venoms.

Dr. Fry has constructed evolutionary trees of these venom genes, and his results indicate that venom actually evolved only once in snakes. It started out being produced at low levels, as illustrated today by garter snakes which actually produce tiny amounts of venom. Later some lineages evolved a more deadly bite.

Dr. Fry’s research has also made sense of the origin of venom molecules. He constructed evolutionary trees of 24 venom genes. In only two cases did he find that venom genes evolved from saliva genes? In almost all the other cases, venom genes evolved from ones that were active outside the venom gland — in the blood, as well as the brain and liver.

The evidence indicates that the evolution of a typical venom gene may begin with the accidental duplication of a gene that is active in another organ. In some cases, these borrowed proteins turn out to be harmful when injected into a snake’s prey. Natural selection then favours mutations that make these proteins more lethal as new lineages of snakes evolved, their venom evolved as well.

## **SPORTING DOGS**

Of more than 800 separate species of dogs, only a relatively small percentage are recognized by kennel clubs throughout the world, and these vary considerably from country to country. It is customary to classify breeds as Sporting (Gundogs, Hounds and Terriers) and Non-sporting (Working, Utility and Toys).

### **GUNDOGS**



The group of Gundogs comprises the following breeds: Setters, Pointers, Retrievers and Spaniels. Forebears of modern gundogs came to England and other countries from Spain thus the word “Spaniel”. There are few more beautiful dogs than the English Setter. No doubt he belongs to the great Spaniel family. From the finely chiseled head to the tip of the feathered tail, every line reflects grace and intelligence. For four hundred years or more such dogs have been valuable hunting companions. The ancestors of our English Setters, known as “Setting Spaniels”, were spotting game birds for hunters with

nets. The dogs were taught to approach quietly and “set” – sit – while the net was dropped over the birds. Later these “Setting Spaniels” were trained to point as gundogs do today.

Some Pointer blood may have been introduced at that time to create a rangier dog and to increase the pointing instinct. In any event, the Setters became distinguishable from the Spaniels by their taller, leaner proportions, longer heads, and plumed tails. A born hunter, the English Setter is a dependable shooting dog under all conditions of terrain and climate, though in hot climates a shorter-coated dog should be preferred.

The setter is a one-man dog, admiration for his master showing in his expressive and intelligent eyes. His body is of moderate length, strong shoulders and loins indicate of the power to gallop easily and last through a hard day’s work. The neck is rather long, muscular, lean, and slightly arched. The head is long and lean, with a well-defined stop. The skull is oval between the ears, with a well-defined occiput. The muzzle is moderately deep and fairly square. The ears, set on low, are of moderate length, and hang in folds close to the cheek. The tail should be carried almost on a line with the neck. The coat is slightly wavy, long, and silky, with plenty of feathering on legs and tail. The body ground colour of the English Setter is white with black, lemon, liver or tan marking distributed in spots.

**The Irish Setter.** Happy-go-lucky, loyal, and likable, the red Irish man has good looks and abounding vitality. In the field he is tough and courageous; at home he makes the most gentle and affectionate of companions. The Irish can’t match the English Setter or the Pointer in extreme range, but he covers his more restricted territory thoroughly. In autumn woods abounding in reddish browns and deep shadows the dark coat that makes him so beautiful is a disadvantage, for he is sometimes harder to see than the white breeds. The rich golden chestnut colour should have no trace of black. Slight white markings on chest, throat, toes, or a small star on the forehead are not disqualifications. He is about the same size as his English cousin and, generally speaking, the body is on similar lines, but there is a certain distinctive difference in the shape of the head, which is not so long, nor are the lips so square. Coat of moderate length and as free as possible from curl or wave.

**The Gordon Setter,** a native Scot, the handsome black- and-tan Gordon Setter is as gentle as he is good looking. He is eager to work hard and long for his master, has a good bird sense and memory.

Slightly heavier than the two other setters, the Gordon resembles the English Setter in build: wide across the fore head, deep in the chest, sturdy, well muscled with plenty of bone and stamina. The characteristic mahogany markings on his shiny black coat are above the eyes, on chops, ear linings, chest, belly, legs and feather. Height is 66 centimeters.

**The Pointer.** Like the Spaniel group, the Pointer originated in Spain. The Pointer has long been bred for show as well as field ability. His short-haired coat shows off his

lithe, muscular conformation. Its smart white colour, marked with liver, lemon, or black, is easy for the hunter to follow.

There must be a lot of power in the body, which should carry plenty of muscle. Ribs deep, loins strong. Thighs are long and muscular, and the stifles long and well bent. The head is long and has a well-pronounced stop between the eyes. The large eyes express animation and intelligence. The ears, of medium length, should be thin and silky and set high. Gentle in disposition, he makes an ideal family pet.

**The Cocker Spaniel.** Slightly larger than its American counterpart the English Cocker has been highly popular for decades. There is no more cheerful little dog than the Cocker, always busy and never bad-tempered. Coat is thick, silky, sleek and lying flat to body; heavily fringed on front legs, but not too profuse and never curly. Colours range from solid black to solid white with a wide range of parti-colours in between. Height 38-43 centimetres. Tail docked and carried low. Ears long, set low and well clothed with hair; they should be able to extend to the tip of the nose. The skull and forehead are sufficiently developed to provide plenty of brain space whilst the muzzle is well developed and square. The Cocker Spaniel has proved such a charming and merry companion that it is only a minority of them who are trained for the hunt.

**The Labrador.** Most popular of all Retrievers, the Labrador, combines keen scent and fondness for water with a wonderful ability to find and retrieve game. The muscular and compact animal descended from large Newfoundland dogs and for nearly two centuries has excelled as a worker and house pet. Its great endurance and trainability made him useful as a guide dog for the blind and for police and guard work. Dogs are 54-61 centimetres at the shoulder. The short, hard coat turns off water and gives admirable protection from cold, ice and mud. The tail is very characteristic, having a peculiar rounded appearance, from which it is known as an “otter” tail. Thick towards the base, it tapers gradually to the tip, is of medium length, and has practically no feathering, but is clothed thickly all round with a short, dense coat.

## HOUNDS



Broadly speaking, there are two kinds of hounds – the coursing hounds and the tracking hounds. Both are hunters, but one depends more on eyesight and speed; the other has keener scenting powers. The fleetest legs in all the canine world are in this

first group, Hounds, Borzoi and Saluki. The second group of hounds is those that hunt by scent. All hounds that hunt by scent have certain characteristics in common. They are nearly all short-coated dogs with pendulous ears and plenty of stamina and perseverance. They are slower than the coursing hounds, being bred to wear down their quarry by their endurance in following a trail rather than to overcome it by superior speed. Coursing hounds run mute, needing all their breath for their physical exertion. Hounds bred to follow a scent give vent to their feeling in rich melodious baying. This enables the huntsman to know where they are, and to judge from the quality of their cry how hot is the line that they are following, and whether they have their prey at bay. This latter group is represented by Bloodhounds, Basset Hounds, Beagles and some others.

### FUR-ANIMAL MANAGEMENT



**Mink.** Mink are fed by placing a day's ration of a meat-cereal-water mixture on top of the wire. Most ranches place food on pans inside the run for small kits which cannot reach the food on top of the pen. Mink require an ample supply of fresh water. Watering cups fastened to the outside of the pen with a lip protruding inside are commonly used. Automatic watering systems with individual nipples are used in sheds, until the temperature drops to freezing. Cold storage facilities are necessary to freeze and store the meat portion of the ration. A day's supply of meat and meat by products is thawed, cereal is added and the combined ration is mixed with water to a consistency that will remain on the wire of the pen without dropping through. Ready-mixed foods are available in some areas. This may be delivered daily, ready to feed, or may be in frozen blocks, which are kept in cold storage and thawed as required. Dry diets are used on some ranches for part of the year.

Mink are normally pelted in November or December. Several methods of killing are used, depending on the preference of the rancher. Cervical dislocation is commonly used. Magnesium sulfate, nicotine sulfate, ether or strychnine may be injected into the heart.

Ranchers usually keep one male for each 5 female breeders. March is the mating season. Mink are much more active at this time, and a clucking sound is characteristic, but there are no external signs of estrus. After a male is placed in a female's pen, mating should occur within an hour. If fighting ensues they should be separated. Ovulation is in-



duced by coitus. Females may ovulate 2 or 3 times and 2 matings are usual to ensure a high conception rate but there should be an interval of 6 to 8 days between matings. Ova from 2 ovulations have been known to contribute to the same litter. There is delayed implantation of the fertilized ova, so the apparent gestation period varies from 40 to 75 days.



**Rabbit management.** The selection of breeding stock is dependent upon the purposes of the raisers. The wool breeds include the English and French Angora, American Chinchilla, Checkered Giant, Rex, Satin, and Silver Marten are for breeds, while those bred for meat are the White New Zealand, Red New Zealand, Californian and Flemish Giant. The white breeds, the White New Zealand and the Californian, are the most popular, as they produce a white pelt. Of the 28 rabbit breeds recognized in America, most laboratory usage is of the White New Zealand, Dutch and various mixed breeds, usually white.

Rabbits are sexually mature from 7 months for the medium breeds to 9 to 12 months for the giant breeds. The small breeds, such as the Polish and the Dutch, mature at about 5 months. Rabbits do not have a regular estrous cycle. The receptiveness of the doe, which is an induced ovulator, is established by excitement of close proximity to other rabbits. A ratio of 10 does to one buck is considered to be maximum, with 4 or 5 matings per week for the buck occasionally employed, and 2 to 3 matings a week with continuous use. The breeding program should be carried on throughout the year. The gestation period is 31 to 32 days. The pregnant doe will make her own nest in the nest box 3 or 4 days before parturition (kindling). The young may be examined on the second or third day. Considering a nursing period of 8 weeks, one doe can produce 4 litters a year if breeding failures do not occur. By rebreeding the doe when the young are 6 weeks old, 5 litters per year are obtained in many commercial rabbitries. A false pregnancy may occur as a result of infertile mating or one female riding another. These females cannot conceive for 17 days (the period of false pregnancy); therefore, test matings to determine whether the doe will accept the buck are routine on the 18th day after mating. If the doe has conceived, the fetuses can be palpated on the 12th day after breeding.

Rabbits should be carried by grasping the loose skin over the withers with one hand and placing the other under the rump to support the weight from beneath. If they are not held properly and securely, fractures or luxations of thoracic and lumbar vertebrae may follow struggling. The claws on the rear limbs are capable of inflicting severe

lacerations on unprotected arms or handlers. Some breeders tattoo their animals for identification purposes. The right ear is reserved for registration marks.

**Diseases of rabbits.** Although most techniques suitable for dogs and cats may be applied to rabbits for physical examination and restraint, general anesthesia of rabbits with barbiturates is often accompanied by significant mortality. Inhalation agents such as halothane are often safer to use.

## EXERCISES

### 1. Answer the questions:

1. What is your field of science/research?
2. What is your particular area of research? What are you specializing in?
3. What are the latest achievements in this field of science?
4. What fundamental discoveries have been made in your field of science/ research?
5. Can you name some outstanding researchers in your field of science? What contribution have they made?
6. Do achievements in your branch of science/ research influence everyday life? In what way?
7. What further developments can you predict in your field of science/ research?

### *Active vocabulary*

- to do/to carry out/ to carry on/ to conduct research
- to contribute/ to make a contribution to
- to influence/ to affect
- to study/ to investigate/ to explore
- to put forward an idea
- to suggest an idea/ a theory/a hypothesis
- to advance/ to develop/ to modify a theory
- to predict/ to forecast/ to foresee
- to accumulate knowledge
- field of science/ research
- latest/recent achievements/developments/advances
- an outstanding/prominent/world-known scientists/researcher

### 2. Complete the following sentences. Speak about your field of science/ research.

1. I do/ carry out research in the field of...
2. It is the branch of science that studies...
3. Major developments include advances in ...
4. Remarkable advances have been made ...
5. My current field of science/research is ...
6. It is difficult/ not difficult to foresee/predict ...

### ***Active vocabulary***

- to deal with/ to consider the problem
- to be the subject of special/particular interest
- to be interested in
- to be of great/little/no interest/importance/significance/value/use
- to take up the problem
- to work on the problem
- a lot of/little/no literature is available on the problem

### **3. Answer the questions:**

1. What is your research problem?
2. What is the subject of your research?
3. What is of special interest in the problem of your research?
4. Why has the interest in this problem increased considerably in recent years?
5. What concept is your research based on?
6. Is there much literature available on your research problem?
7. What are the main aspects of the problem that have been considered?

### ***Active vocabulary***

- purpose/aim/objective/goal/target
- a method/a technique/ a procedure
- detection/identification/observation
- measurement/calculation/computation/approximation
- consideration/generalization/deduction/assumption
- modeling/simulation
- advantages/merits
- disadvantages/shortcomings/limitations
- accurate/precise
- accuracy/precision
- reliable/valid/conventional/effective/useful/valuable
- data/results/method
- to make an experiment/analysis
- to reveal/to find/to confirm/to prove evidence
- to study/to examine
- to collect data
- to create
- to improve
- to work out/to develop/to design
- to verify/to check
- to approve/ to disapprove an assumption

- to use/to employ/to apply
- to allow/to permit/to provide
- to come into use
- results/findings/data/observations/evidence
- comprehensive/extensive
- detailed
- remarkable/encouraging/convincing
- preliminary
- sufficient/insufficient
- to collect/to get/to receive/to obtain data
- to treat the problem
- to succeed in/to make progress in/to be a success
- to fail in
- to be similar to/ to be the same as
- to coincide/ to be consistent with
- to agree with/to fit the assumption
- to support/in support of
- to conclude/to come to/to bring to a conclusion/to make conclusions

#### **4. Answer the questions:**

1. What is the subject of your current research?
2. What is the purpose of your research?
3. What method do you employ? Why?
4. What are the advantages of the method used over other methods or techniques?
5. What does the method consist in?
6. Do you find the method reliable/precise? Why?
7. How much time will it take you to complete your research successfully?
8. Have you already obtained any research results?
9. Has your research been successful?
10. Do your results coincide with those obtained by other researchers?
11. Are your results of theoretical or practical interest?
12. Do the data/results/observations/findings allow you to come to any definite conclusion(s)?
13. What conclusions have you come to?
14. How long will it take you to finish your research?
15. Are you going to publish the results obtained?

**5. Complete the sentences with the words from the Active vocabulary section. Speak about the purpose of your current research, the method used and the results obtained.**

1. Currently I ...
2. I make the experiments/analyses in order to ...
3. The purpose of my experiments/analyses is to ...
4. In our current research we ... the method of ....
5. The method/technique allows/permits ... to ....
6. The method/ technique makes it possible to ...
7. The method proves to be ...
8. At present a lot of work is being done to ...
9. The results we have ... so far cannot be used to ....
10. The evidence appears to ...
11. As a result of numerous experiments performed we have obtained sufficient data to ....
12. We have come to the conclusion that ... .

### **СПИСОК ИСПОЛЬЗУЕМОЙ ЛИТЕРАТУРЫ**

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