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РОССИЙСКИЙ ГОСУДАРСТВЕННЫЙ ГИДРОМЕТЕОРОЛОГИЧЕСКИЙ УНИВЕРСИТЕТ

"ENGLISH FOR ENVIRONMENTAL STUDIES"

УЧЕБНОЕ ПОСОБИЕ

для студентов второго курса

Специальность: Экономика и управление на предприятии природопользования

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Данное пособие предназначено для студентов второго курса дневной и заочной форм обучения как изучавших английский язык ранее, так и для изучающих его как второй иностранный.

Пособие состоит из шести блоков и двадцати трёх уроков, в каждом из которых содержатся специальные тексты, комплекс лексико-грамматических упражнений и тексты для дополнительного чтения.

Основной целью пособия является как приобретение начальных навыков чтения, перевода и работы со специальной литературой, так и углубление и систематизация полученных ранее навыков.

ПРЕДИСЛОВИЕ

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Материалами учебного пособия послужили аутентичные тексты современных учебников и учебных пособий, а также материалы конференций по тематике пособия. Подбор текстов происходил при содействии участников международных проектов по указанной тематике, в частности, университетов г. Кадис (Испания), г. Авейро (Португалия), а также ведущих специалистов РГГМУ.

Тексты для дополнительного чтения могут быть использованы как преподавателем для контроля знаний студентов, так и для самостоятельной работы дома и в аудитории. Отличительной особенностью пособия является то, что с самого начала работы с текстами и упражнениями студентами используется та общенаучная и специальная лексика, которая будет затем постоянно использоваться на дальнейших этапах обучения.

Основной целью пособия является как приобретение начальных навыков чтения, перевода и работы со специальной литературой, так и углубление и систематизация полученных ранее навыков.

В качестве дополнительного материала студенты могут использовать любые грамматические справочники и пособия, а также общие словари и словари по специальности.

БЛОК I УРОК I

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Теперь напишите 5-10 слов, которые, с вашей точки зрения, должны встретиться в тексте с таким заглавием.

II. Быстро прочитайте текст и постарайтесь наиболее полно воспроизвести его содержание на русском языке.

III. Найдите в тексте ответы на следующие вопросы:

- какие важные вопросы рассматривает экономика ?
- на какие группы подразделяется экономика окружающей среды, и что они изучают ?

Текст 1 А

WHAT ENVIRONMENTAL ECONOMICS IS

Economics is the study of how and why individuals and groups make decisions about the use and distribution of valuable human and nonhuman resources. It is not solely the study of profit-making businesses making decisions in a capitalist economy. It is much broader than this; it provides a set of analytical tools that can be used to study any situation in which the scarcity of means requires the balancing of competing objectives. It includes, for example, important questions in the behavior of nonprofit organizations, government agencies, and consumers.

Environmental economics is the application of the principles of economics to the study of how environmental resources are developed and managed. Economics is divided into microeconomics, the study of the behavior of individuals and small groups, and macroeconomics, the study of the economic performance of economies as a whole. Environmental economics draws from both sides, although more from microeconomics than from macroeconomics. It focuses primarily on how and why people make decisions that have consequences for the natural environment. It is concerned also with how economic institutions and policies can be changed to bring these environmental impacts more into balance with human desires and the needs of the ecosystem itself.

One of our first jobs, therefore, is to become acquainted with some of the basic ideas and analytical tools of microeconomics. To do this at the very beginning, however, would risk giving the impression that the tools are more important than their uses. The tools of analysis are not interesting in themselves but for the understanding they can give us about why the natural environment becomes degraded, what the consequences of this are, and what can be done effectively to reduce this degradation.

IV. Составьте план пересказа текста.

V. Прочитайте текст ещё раз и найдите в нём определения экономики, экономики окружающей среды, макро- и микроэкономики.

VI. Найдите в тексте предложения, которые несут основную смысловую нагрузку.

VII. Укажите, какие части речи обозначены в словарях следующими сокращениями: n, v, adv, adj, pron, prep, num.

VIII. Определите исходные формы следующих слов и найдите их значение в словаре: groups, valuable, solely, making, including, developed, concerned, acquainted, gave.

IX. В правой колонке найдите русские эквиваленты следующих словосочетаний:

to make a decision	выгодный бизнес
valuable resources	влияние окружающей среды
profit-making business	правительственные агентства
government agencies	ценные ресурсы
environmental impact	принять решение

X. В тексте, вероятно, остались слова, значения которых вы не знаете. Обсудите между собой их предполагаемые значения. Правильность своих предположений проверьте по словарю.

Текст 1 B

WHAT INTERNATIONAL TRADE IS

When Honduras exports bananas to Switzerland, they can use the money they to import Swiss chocolate — or to pay for Kuwaiti oil or a vacation in Hawaii. The basic idea of international trade and investment is simple: each country produces goods or services that can be either consumed at home or exported to other countries.

The main difference between domestic trade and international trade is the use of foreign currencies to pay for the goods and services crossing international borders. Although global trade is often added up in U.S. dollars, the trading itself involves various currencies. Japanese videocassette recorders are paid for in German marks in Berlin, and German cars are paid for in U.S. dollars in Boston, Indian tea, Brazilian coffee, and American films are sold around the world in currencies as diverse as Turkish liras and Mexican pesos.

Whenever a country imports or exports goods and services, there is a resulting flow of funds: money returns to the exporting nation, and money flows out of the importing nation. Trade and investment is a two-way street, and with a minimum of trade barriers, international trade and investment usually makes everyone better off.

In an interlinked global economy, consumers are given the opportunity to buy the best products at the best prices. By opening up markets, a government allows its citizens to produce and export those things they are best at and to import the rest, choosing from whatever the world has to offer.

Some trade barriers will always exist as long as any two countries have different sets of laws. However, when a country decides to protect its economy by erecting artificial trade barriers, the result is often damaging to everyone, including those people whose barriers were meant to protect.

The Great Depression of the 1930s, for example, spread around the world when the United States decided to erect trade barriers to protect local producers. As other countries retaliated, trade plumered, jobs were lost, and the world entered into a long period of economic decline.

XI. Устно переведите текст. Контрольное время — 15 мин.

XII. Найдите в тексте ответы на следующие вопросы:

1. What is the basic idea of international trade ?
2. What is the main difference between domestic and international trade ?
3. How can you consider trade barries ?
4. What is the difference between trade and investment ?
5. What were the sequences of the Great Depression of the 1930s ?

УРОК II

УПРАЖНЕНИЯ

I. Найдите в приводимом ниже тексте ответы на следующие вопросы.

1. Каковы основные программы по борьбе с загрязнением окружающей среды ?
2. В чём состоит основная проблема, связанная с защитой окружающей среды ?
3. Какие меры были приняты EPA в 1990 г. в США для улучшения состояния окружающей среды ?

II. В каком абзаце говорится о важности изучения эффективных проектов по охране окружающей среды ?

III. В правой колонке найдите русские эквиваленты следующих слов:

public	уделять (внимание)
environment	общественный
benefit	окружающая среда
costs	акцент, особое значение
efficient	издержки
impact	эффективный
emphasis	воздействие
deserve	замысел
design	политика, курс
policy	заслуживать
pursue	польза
devote	следовать

Текст 2A

THE DESIGN OF ENVIRONMENTAL POLICY

Environmental economics has a major role to play in the design of public policies for environmental quality improvement. There is an enormous range and variety of public programs and policies devoted to environmental matters, at all levels of government: local, state, regional, federal, and international. They vary greatly in their efficiency and effectiveness. Some have been well designed and will no doubt have beneficial impacts. Others, perhaps the majority, are not well designed. Not being cost effective, they will end up costing lots of money and having

much smaller impacts on environmental quality than they might have had with better design.

The problem of designing efficient environmental policies is often not given the emphasis it deserves. It is easy to fall into the trap of thinking that any programs or policies that flow out of the rough and tumble of the environmental political process is likely to be of some help, or that they certainly will be better than nothing. But history is full of cases where policymakers and public administrators have pursued policies that don't work; the public is frequently led to believe a policy will be effective even when any reasonable analysis could predict that it will not. All of which means that it is critically important to study how to design environmental policies that are effective and efficient.

The Environmental Protection Agency (EPA) estimated that in 1990 the United States devoted about 2 percent of the total cost of goods and services in the country to pollution control and environmental cleanup. They expect this percentage to rise to around 2.8 percent by the end of the 1990s. These are very large sums of money, even though the percentage probably should be higher. But it is important not to get totally fixated on the percentage, whether it is high or low, whether it compares favorably with other countries, and so on. Of equal or greater importance is whether we are getting the most improvement possible in environmental quality for the money spent.

IV. Найдите в тексте основные, с точки зрения смысловой нагрузки, слова.

V. Из приведённого выше текста выпишите 5 основных характеристик, присущих планам по защите окружающей среды.

VI. После того, как вы вторично прочитали текст, опишите причины неэффективности некоторых программ.

VII. Озаглавьте второй абзац текста.

VIII. Перескажите текст своими словами.

IX. Определите исходные формы и значение следующих слов:
devoted, estimated, services, higher, totally, compares.

X. Определите значение подчёркнутых слов, исходя из контекста.

XI. Поместите предлагаемые ниже слова в одну из следующих групп:

связующие элементы предложения	термины	общенаучная лексика

environment, of, problem, process, or, history, percent, sum, whether, efficiency, benefit, not, and, goods, quality, so.

УРОК III

УПРАЖНЕНИЯ

I. Исходя из заглавия текста, определите, какие из ниже перечисленных слов и словосочетаний могут встретиться в нём: global, destruction, protection, chemicals, global warming, distribution, benefit, environmental policy, economics, tax.

II. Найдите в тексте ответы на следующие вопросы.

1. Какими факторами определяется производство, а какими — потребление ?
2. В связи с чем в тексте упомянуты законы природы ?
3. В чём состоит сущность феномена "глобального потепления климата" ?

III. Быстро прочитайте текст и воспроизведите его содержание на русском языке.

Текст 3А

THE ECONOMY AND THE ENVIRONMENT

The economy is a collection of technological, legal, and social arrangements through which individuals in society seek to increase their material and spiritual well-being. The two elementary economic functions pursued by society are production and consumption. Production refers to all those activities that determine the quantities of goods and services that are produced and the technological and managerial means by which this production is carried out. Consumption refers to the way in which goods and services are divided up, or distributed, among the individuals and groups that make up society.

Any economic system exists within, and is encompassed by, the natural world. Its processes and changes are of course governed by the laws of nature. In addition, economies make use directly of natural assets of all types. One role the natural world plays is that of provider of raw materials and energy inputs, without which production and consumption would be impossible. Thus, one type of impact that an economic system has on nature is by drawing upon raw materials to keep the system functioning. Production and consumption activities also produce leftover waste products, called "residuals", and sooner or later these must find their way back into the natural world. Depending on how they are han-

dled, these residuals may lead to pollution or the degradation of the natural environment.

IV. Прочитайте текст ещё раз и найдите в нём определения производства, потребления.

V. Прочитайте следующие предложения и, если нужно, внесите в них соответствующие смысловые изменения.

1. Environmental policy affects the natural environment only.
2. In recent years, we have become aware of certain environmental problems that are local in extent.
3. Economies make use directly of natural assets of all types.
4. The economy is a collection of technological, legal, and social arrangements through which individuals in society seek to decrease their material and spiritual well-being.

VI. Опустив в тексте все второстепенные моменты, постарайтесь сократить его объём, оставив в неприкосновенности основную идею. Для выполнения этой задачи решите следующие вопросы:

- какие предложения можно опустить без особого ущерба его содержанию;
- какой абзац целесообразно оставить полностью;
- какой абзац следует сократить в объёме;

VII. Озаглавьте каждый абзац текста.

VIII. Найдите русские эквиваленты следующих слов и словосочетаний:

pursued by society	использовать
to refer to	черпать, брать (из средств, фонда и т.п.)
to make up	относиться (к чему-либо)
waste products	производственные цели
global warming	административные средства
industrial purposes	глобальное потепление
raw materials	преследуемый обществом
draw upon	сырьё
managerial means	законы природы
laws of nature	отходы производства

IX. Проверьте, помните ли вы значение следующих слов, которые уже встречались вам в предыдущих текстах: economy, distribu-

tion, human resources, profit, benefit, policy, natural economics, environment, control, chemicals.

X. Выберите один из абзацев текста. Придумайте 3-5 вопросов к нему. Обменяйтесь вопросами с другими студентами.

XI. Переведите текст. Контрольное время — 15 мин.

Текст 3 В

INTERNATIONAL ISSUES

In recent years, we have become aware of certain environmental problems that are global in extent. One of these is the destruction of the earth's protective layer of ozone by chemicals devised by humans for a variety of industrial purposes. Another is the problem of global warming: that is, the possible rise in surface temperatures of the earth stemming from the accumulation of carbon dioxide in the atmosphere. There are many important dimensions to these problems that can be clarified by economic analysis. One, for example, is how the burden of control programs might be distributed among the various countries of the world. One problem environmental economists have worked on is how international treaties might be devised so as to distribute the benefits and costs of CO_2 emission controls in ways that are efficient and equitable.

УРОК IV

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Напишите 5 – 10 слов, которые, с вашей точки зрения, должны в нём встретиться. По тексту проверьте правильность своих предположений.

II. Найдите в тексте ответы на следующие вопросы:

- что такое экономика природных ресурсов ?
- на какие части делится экономика природных ресурсов ?

III. Быстро прочитайте текст и постарайтесь наиболее полно воспроизвести его содержание на русском языке.

Текст 4 А

NATURAL RESOURCE ECONOMICS

In modern industrial / urban societies it is sometimes easy to overlook the fact that a large part of total economic activity still relies on the extraction and utilization of natural resources. Natural resource economics is the application of economic principles to the study of these activities. To get a general impression of what this discipline includes, the following is a list of its major subdivisions and examples of questions pursued in each one.

Mineral economics: What is the appropriate rate at which to extract ore from a mine ? How do exploration and the addition to reserves respond to mineral prices ?

Forest economics: What is the appropriate rate to harvest timber ? How do government policies affect the harvest rates pursued by timber companies ?

Marine economics: What kids of rules need to be established for managing fisheries ? How do different harvest rates affect the stocks of fish ?

Land economics: How do people in the private sector (builders, home purchasers) make decisions about the use of land ? How do the laws of property rights and public land use regulations affect the way space is devoted to different uses ?

Energy economics: What are the appropriate rates for extracting underground petroleum deposits ? How sensitive is energy use to changes in energy prices ?

Water economics: How do different water laws affect the way water is utilized by different people ? What kinds of regulations should govern the reallocation of water from, for example, agriculture to urban users ?

Agricultural economics: How do farmers make decisions about using conservation practices in cultivating their land ? How do government programs affect the choices farmers make regarding what crops to produce and how to produce them ?

A fundamental distinction in natural resource economics is that of renewable and nonrenewable resources. The living resources, such as fisheries and timber, are renewable; they grow in time according to biological processes. Some nonliving resources are also renewable — the

classic example being the sun's energy that reaches the earth. Nonrenewable resources are those for which there are no processes of replenishment – once used they are gone forever. Classic examples are petroleum reservoirs and nonenergy mineral deposits. Certain resources, such as many groundwater aquifers, have replenishment rates that are so low that they are in effect nonrenewable.

It is easy to see that the use of nonrenewable resources is a problem with a strong intertemporal dimension; it involves trade-offs between the present and the future. If more oil is pumped out of an underground deposit this year, less will be available to extract in future years. Establishing today's correct pumping rate, therefore, requires a comparison of the value of oil now with the anticipated value of oil in the future.

But complicated intertemporal trade-offs also exist with renewable resources. What should today's codfish harvesting rate be, considering that the size of the remaining stock will affect its future growth and availability ? Should this timber be cut today or does its expected rate of growth warrant holding off harvesting until some time in the future ? Biological and ecological processes create connection between the rates of resource use in the present and the quantity and quality of resources available to future generations. It is these connections that are the focus of what has come to be called sustainability.

IV. Прочитайте текст ещё раз и найдите в нём определение экономики природы ресурсов.

V. Найдите в тексте предложения, несущие основную смысловую нагрузку.

VI. Озаглавьте каждый абзац текста.

VII. Выберите один из абзацев текста и придумайте к нему 3-5 вопросов. Обменяйтесь вопросами с другими студентами.

VIII. В правой колонке найдите русские эквиваленты следующих слов и словосочетаний:

petroleum deposits	реагировать (на что-либо)
natural resources	невосполнимые ресурсы
private sector	минеральные залежи
renewable resources	компромисс, уступка
nonrenewable resources	породы рыб
mineral deposits	частный сектор
to respond to	водоносный горизонт

aquifer	залежи нефти
stocks of fish	возобновляемые ресурсы
trade-offs	природные ресурсы

IX. Составьте план пересказа текста.

X. Запомните названия следующих природоохранных организаций и нормативных актов, которые встретятся вам в тексте 4 B:

NATURE MANAGEMENT

Международный Союз Охраны Природы	International Union for the Conservation of Nature
Всемирный Фонд Дикой Природы	World Wild Fund for Nature
Рамсарская Конвенция	Ramsar Convention
Боннская и Бернская Конвенции	Bonn and Bern Conventions

XI. Найдите в тексте предложения, в которых говорится о приоритетных областях международного сотрудничества.

XII. Прочитайте текст ещё раз и постарайтесь наиболее поло воспроизвести его содержание на русском языке.

XIII. Переведите текст. Контрольное время – 15 мин.

Текст 4 B

NATURE MANAGEMENT

Nature conservation, or the conservation of biodiversity, is an important part of Dutch governmental policy and one that has broad support in society.

Conservation issues are not confined to Holland's national boundaries. The Netherlands has traditionally been active in international conservation efforts. It played an important role in the founding of the International Union for the Conservation of Nature, or IUCN, and World Wide Fund for Nature, or WWF, and the establishment of the Ramsar Convention and the Bonn and Bern conventions.

Priority areas for international cooperation in this area include the promotion of wetland conservation and management, sustainable management of coastal ecosystems and sustainable forestry. Holland's financial contribution to international cooperation falls under the responsibilities of the International Program for Nature Management, or PIN.

The Russian Federation and the Netherlands have an important eco-

logical relationship. Many of the species of wild geese, ducks and waders that breed in northern Russia and western Siberia migrate to the Netherlands to winter or pass through on their way to southern Europe or Africa. The Netherlands traditionally protects these staging and wintering areas, such as the Waddensea, the Dutch wetlands. As part of the same flyway, Russia and the Netherlands — both members of the Ramsar Convention — share (along with other member countries in the flyway) the responsibility for the protection and management of these migrating bird populations.

Every year a number of projects and activities in Russia are supported by the PIN program. These include the joint monitoring of arctic breeding areas and the establishment of new reserves both in the high arctic regions — notably the Great Arctic Reserve — and in the forests of the northern taiga, such as the future Kologriv nature reserve. The Netherlands supports Russia in its efforts to meet its obligations under various international agreements by, for example, enabling Russian scientists to attend international conferences.

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Напишите 5-10 слов, которые, с вашей точки зрения, должны встретиться в тексте с таким заголовком. Проверьте правильность своих предположений.

II. Перед прочтением текста постарайтесь вспомнить, что можно отнести к кумулятивным, а что — к некумулятивным загрязнителям.

III. Если у вас возникли трудности с ответом на предыдущий вопрос, прочитайте текст и найдите ответ в нём.

IV. Прочитав текст (если нужно — дважды), постарайтесь наиболее полно воспроизвести его содержание на русском языке.

Текст 5 A
CUMULATIVE VS. NONCUMULATIVE POLLUTANTS

One simple and important dimension of environmental pollutants is whether they accumulate over time or tend to dissipate soon after being emitted. The classic case of a noncumulative pollutant is noise; as long as the source operates, noise is emitted into the surrounding air, but as soon as the source is shut down, the noise stops. At the other end of the spectrum there are pollutants that cumulate in the environment in nearly the same amounts as they are emitted. Radioactive waste, for example, decays over time but at such a slow rate in relation to human life spans that for all intents and purposes it will be with us permanently; it is a strictly cumulative type of pollutant. Another cumulative pollutant is plastics. The search for a degradable plastic has been going on for decades, but so far plastic is a substance that decays very slowly by human standards; thus, what we dispose of will be the environment permanently. Many chemicals are cumulative pollutants; once emitted they are basically with us for ever.

Between these two ends of the spectrum there are many types of effluent that are to some extent, but not completely, cumulative. The classic case is organic matter emitted into water bodies; for example, the wastes, treated or not, emitted from municipal waste treatment plants. Once emitted the wastes are subject to natural chemical processes that tend to break down the organic materials into their constituent elements, thus rendering them much more benign. The water, in other words, has a natural assimila-

tive capacity that allows it to accept organic substances and render them less harmful. As long as this assimilative capacity has not been exceeded in any particular case, the effluent source can be shut off, and in a few days, weeks, or months the water quality will return to normal. Of course the fact that nature has some assimilative capacity doesn't automatically mean that the pollutant is strictly noncumulative. Once emissions exceed the assimilative capacity we would move into a cumulative process. For example, the atmosphere of the earth has a given capacity to absorb CO_2 emitted by human activity, as long as this capacity is not exceeded. CO_2 is a noncumulative pollutant. But if the earth's assimilative capacity for CO_2 is exceeded, as it seems to be at the present time, we are then in a situation where emissions are in fact accumulating over time.

V. Найдите в тексте предложения, несущие основную смысловую нагрузку.

VI. Составьте план пересказа текста.

VII. Озаглавьте каждый абзац текста.

VIII. Найдите в тексте место, где говорится о потребности Земли поглощать CO_2. К какому типу относят CO_2: кумулятивному или некумулятивному ?

IX. Придумайте 3-5 вопросов к первому абзацу текста. Обменяйтесь вопросами друг с другом.

X. В правой колонке найдите русские эквиваленты следующих слов и словосочетаний.

pollutant	продолжительность жизни человека
pollution	радиоактивные отходы
water body	органическое вещество
constituent elements	ассимиляционная способность
radioactive waste	водоём
human life span	загрязнитель
organic matter	завод по переработке отходов
assimilative capacity	составные элементы
waste treatment plant	загрязнение

XI. В тексте, вероятно, остались слова, значения которых вы не знаете. Обсудите между собой их предполагаемые значения. Правильность своих предположений проверьте по словарю.

УРОК II

УПРАЖНЕНИЯ

I. Прочитав заглавие к тексту, вспомните, что относится к локальным, региональным и глобальным загрязнителям.

II. Быстро прочитав текст, постарайтесь наиболее полно воспроизвести его содержание на русском языке.

Текст 6 А

LOCAL VS. REGIONAL AND GLOBAL POLUTANTS

Some emissions have an impact only in restricted, localized regions, whereas others have an impact over winder regions, perhaps on the global environment. Noise pollution and the degradation of the visual environment are local in their impacts; the damages from any particular source are usually limited to relatively small groups of people in a circumscribed region. Note that this is a statement about how widespread the effects are from any particular pollution source, not about how important the overall problem is throughout a country or the world. Many pollutants, on the other hand, have widespread impacts, over a large region or perhaps over the global environment. Acid rain is a regional problem; emissions in once region of the United States (and of Europe) affect people in other parts of the country or region. The ozone-depleting effects of chlorofluorocarbon emissions from various countries work through chemical changes in the earth's stratosphere, which means that the impacts are truly global.

Other things being equal, local environmental problems ought to be easier to deal with than regional or national problems, which in turn ought to be easier to manage than global problems. If I smoke out my neighbor with my wood stove, we may be able to arrange a solution –among ourselves, or we can call on local political institutions to do it. But if my behavior causes more distant pollution, solutions may be more difficult. If we are within the same political system, we can call on these institutions to arrange solutions. In recent years, however, we have been encountering a growing number of international and global environmental issues. Here we are far from having effective means of responding, both because the exact nature of the physical impacts is difficult to describe and because the requisite international political institutions are only beginning to appear.

III. В правой колонке найдите русские эквиваленты следующих слов и словосочетаний:

widespread impact	кислотный дождь
ozon depletion	масштабное влияние
chemical changes	эмиссия
overall problem	уменьшение концентрации озона
emission	при прочих равных условиях
noise pollution	шумовое загрязнение
acid rain	общая проблема
other things being equal	химические изменения

IV. Прочитав текст ещё раз, найдите в нём предложения, где даются примеры загрязнителей в различных масштабах.

V. Найдите в тексте предложения, несущие основную смысловую нагрузку, с вашей точки зрения.

VI. Озаглавьте каждый абзац текста.

VII. Придумайте 3-5 вопросов к первому абзацу текста. Обменяйтесь вопросами с другими студентами.

VIII. В тексте, вероятно, остались слова, значения которых вы не знаете. Обсудите между собой их предполагаемые значения. Правильность своих предположений проверьте по словарю.

IX. В тексте "Terminology" найдите, не заглядывая в словарь, русские эквиваленты выделенных слов.

X. Переведите устно с помощью словаря нижеприведённый текст. Контрольное время — 20 мин.

Текст 6 В

TERMINOLOGY

Throughout the chapters that follow we use the following terms:

– Ambient quality: "Ambient" refers to the surrounding environment, so ambient quality refers to the quantity of pollutants in the environment; for example, the concentration of SO_2 in the air over a city or the concentration of a particular chemical in the waters of a lake.

– Environmental quality: A term used to refer broadly to the state of the natural environment. This includes the notion of ambient quality and such things as the visual and aesthetic quality of the environment.

– Residuals: Material that is left over after something has been produced. A plant, for example, takes in a variety of raw materials and con-

verts these into some product. Materials and energy left after the product has been produced are production residuals. Consumption residuals are what is left over after consumers have finished using the products that contained or otherwise used these materials.

– Emissions: The portion of production or consumption residuals that are placed in the environment, sometimes directly, sometimes after treatment.

– Recycling: The process of returning some or all of the production or consumption residuals to be used again in production or consumption.

– Pollutant: A substance, energy form, or action that, when introduced into the natural environment, results in a lowering of the ambient quality level. We want to think of this as including not only the traditional things, such as oil spilled into oceans or chemicals placed in the air, but also activities, such as certain building developments, that result in "visual pollution".

– Effluent: Sometimes "effluent" is used to talk about water pollutants, and emissions to refer to air pollutants, but in this book these two words are used interchangeably.

– Pollution: Pollution is actually a tricky word to define. Some people might say that pollution results when any amount, no matter how small, of a residual has been introduced into the environment. Others hold that pollution is something that happens only when the ambient quality of the environment has been degraded enough to cause some damage.

– Damages: The negative impacts produced by environmental pollution on people in the form of health effects, visual degradation, and so on, and on elements of the ecosystem through disruption of ecological linkages, species extinction, and so forth.

– Environment medium: Broad dimensions of the natural world that collectively constitute the environment, usually classified as land, water, and air.

– Source: The location at which emissions occur, such as a factory, an automobile, or a leaking landfill.

УРОК III

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту 7A и подумайте, о чём может идти речь в тексте с таким заглавием. Напишите 5-10 английских

слов, которые, с вашей точки зрения, должны встретиться в тексте с таким названием. Проверьте правильность своих предположений по словарю.

II. Найдите в тексте ответ на следующий вопрос: эмиссии от каких источников являются постоянными, а от каких — эпизодическими ? Приведите классический пример из текста.

III. Быстро прочитайте текст и постарайтесь наиболее полно воспроизвести его содержание на русском языке.

Текст 7 А

CONTINUOUS VS. EPISODIC EMISSIONS

Emissions from electric power plants or municipal waste treatment plants are more or less continuous. The plants are designed to be in operation continuously, although the operating rate may vary somewhat over the day, week, or season. Thus, the emissions from these operations are more or less continuous, and the policy problem is to manage the rate of these discharges. Immediate comparisons can be made between control programs and rates of emissions. The fact that emissions are continuous does not mean that damages are also continuous, however. Meteorological and hydrological events can turn continuous emissions into uncertain damages. But control programs are often easier to carry out when emissions are not subject to large-scale fluctuations.

Many pollutants are emitted on an episodic basis, however. The classic example is accidental oil or chemical spills. The policy problem here is to design and manage a system so that the probability of accidental discharges is reduced. Yet, with an episodic effluent there may be nothing to measure, at least in the short run. Even through there have been no large-scale radiation releases from U.S. nuclear power plants, for example, there is still a "pollution" problem if they are being managed in such a way as to increase the probability of an accidental release in the future. To measure the probabilities of episodic emissions, it is necessary to have data on actual occurrences over a long time period or to estimate them from engineering data and similar information. We then have to determine how much insurance we wish to have against these episodic events.

IV. В правой колонке найдите русские эквиваленты следующих слов и словосочетаний:

release	нефтяные разливы
to turn into	выделение (тепла, энергии)
oil spills	скорость эмиссии
emission rate	превращать(ся) во ч.-л.
large-scale fluctuations	крупно-масштабные флуктуации

V. Найдите в тексте предложения, которые несут основную смысловую нагрузку.

VI. К первому абзацу текста придумайте 3-5 вопросов. Обменяйтесь вопросами с другими студентами.

VII. Исходя из названия текста 7 В, подумайте, о чём может идти речь в тексте с таким заглавием.

VIII. Прочитайте текст (контрольное время — 10 мин.) и найдите в нём предложения, содержащие информацию о загрязнителях, выделяющихся из точечных и неточечных источников.

IX. Перечитав текст, перескажите его своими словами по-русски.

Текст 7 В
POINT-SOURCE vs. NONPOINT-SOURCE POLLUTANTS

Pollution sources differ in terms of the ease with which actual points of discharge may be identified. The points at which sulfur dioxide emissions leave a large power plant are easy to identify; they come out the end of the smokestacks associated with each plant. Municipal waste treatment plants normally have a single outfall from which all of the wastewater is discharged. These are called point-source pollutants. There are many pollutants for which there are no well defined points of discharge. Agricultural chemicals, for example, usually run off the land in a dispersed or defused pattern, and even though they may pollute specific streams or underground aquifers, there is no single pipe or stack from which these chemicals are emitted. This is a nonpoint-source type of pollutant. Urban storm water runoff is also an important nonpoint-source problem.

As one would expect, point-source pollutants are likely to be easier to come to grips with than nonpoint-source pollutants. They will probably be easier to measure and monitor and easier to study in terms of the connections between emissions and impacts. This means that it will ordinarily be easier to develop and administer control policies for point-source pollutants. As we will see, not all pollutants fit neatly into one or another of these categories.

УПРАЖНЕНИЯ

I. Прежде чем прочитать текст, ознакомьтесь с приводимыми ниже словосочетаниями: ... the model consists of a simple trade-off situation, environmental pollutants, pollution-control activities, production residuals, damage, wastes, abatement costs.

Обсудите с другими студентами их возможные соответствия в русском языке.

II. Принимая во внимание заглавие текста и приводимые выше слова, постарайтесь определить его содержание.

III. Определите соответствия следующих слов в русском языке: type, public, analyses, model, fundamental, control, resource, situation, industrial, process, basic.

IV. Запомните значение следующих связующих элементов предложения:
as well as, on the one hand, e.g., in order to.

V. Проверьте, запомнили ли вы значение следующих слов из приводимого ниже текста: pollution, emission, damage, to suffer, resource, river, downstream, waste, discharge.

VI. Определите, к каким частям речи относятся эти слова:
essence, trade off, residual, supply, waste, affect, basic, damage, pursue.

Текст 8 A

POLLUTION CONTROL — A GENERAL MODEL

Diverse types of environmental pollutants obviously call for diverse types of public policy, but in order to build up the required policy analyses it is better to start with one very simple model that lays out the fundamentals of the policy situation. The essence of the model consists of a simple trade-off situation that characterizes all pollution-control activities. On the one hand, reducing emissions reduces the damages that people suffer from environmental pollution; on the other hand, reducing emissions takes resources that could have been used in some other way.

To depict this trade-off consider a simple situation where a firm (e.g., a pulp mill) is emitting production residuals into a river. As these residuals are carried downstream, they tend to be transformed into less damaging chemical constituents, but before that process is completed the

river passe by a large metropolitan area. The people of the area use the waters of the river for various purposes, including recreation (boating, fishing) and as a source for the municipal water supply system. When the river becomes polluted with industrial waste, the people downstream are damaged by the disruption of these and other services provided by the river. One side of the trade-off, then, is the damages that people experience when the environment is degraded.

Upstream, the offending pulp mill could reduce the amount of effluent put in the river by treating its wastes before discharge, as well as by recycling certain materials that currently just run out of the discharge pipe. The act of reducing, or abating, some portion of its wastes will require resources of some amount, the costs of which will affect the price of the paper it produces. These abatement costs are the other side of the basic pollution-control trade-off.

VII. Найдите в тексте предложения, несущие основную смысловую нагрузку.

VIII. Дайте ответы на следующие вопросы.

1. В чём состоит сущность модели контроля за загрязнениями ?
2. В чём действительность этой политики ?
3. На примере какого производства рассматривается эта ситуация ?
4. К какому выводу приходит автор ?

IX. Озаглавьте каждый абзац текста.

X. Перескажите текст своими словами.

XI. Определите значение приведённых ниже слов, исходя из контекста:

pulp mill, tend, metropolitan area, recreation, experience, upstream.

XII. В тексте, вероятно, остались слова, значение которых вы не знаете. Обсудите их предполагаемое значение между собой, проверьте правильность по словарю.

УРОК II

УПРАЖНЕНИЯ

I. Прочитайте текст 9 А и дайте ему название.

II. Сделайте вывод о содержании текста по предложениям, взятым из него.

By damages we mean all the negative impacts that users of the environment ...

In the river pollution example, damages were to recreators, who could no longer use the river ...

Air pollution produces damage through its impacts on human health.

Besides damage to human beings, environmental destruction can have important ...

III. Найдите соответствия следующих словосочетаний в русском языке:

negative, result, degradation, chance, chronic bronchitis, emphysema, asbestos fibers, radon emissions, element ecosystem, genetic.

IV. Постарайтесь определить значение интернациональных слов.

Текст 9 А

By damages we mean all the negative impacts that users of the environment experience as a result of the degradation of that environment. These negative impacts are of many types and will of course vary from one environmental asset to another. In the river pollution example, damages were to recreators, who could no longer use the river or who suffered a higher chance of picking up waterborne diseases, and to all the city dwellers who had to pay more to treat the water before they could put it into the public water mains.

Air pollution produces damage through its impacts on human health. Excess deaths from diseases such as lung cancer, chronic bronchitis, and emphysema are related to elevated levels of various pollutants, such as particulate matter, asbestos fibers, and radon emissions. Air pollution can cause damages through the degradation of materials (all of the important outdoor sculpture from Renaissance Florence has had to be put inside to protect it from air pollution) and the deterioration of the visual environment.

Besides damage to human beings, environmental destruction can have important impacts on various elements of the nonhuman ecosystem. Some of these, such as the destruction of genetic information in plant and animal species driven to extinction, will ultimately have important implications for humans. Estimating environmental damages is one of the primary tasks facing environmental scientists and economists, and we will devote Charter 7 to a discussion of this problem.

V. В правой колонке найдите вторую половину предложения из левой колонки.

Все важные скульптуры, находящиеся вне помещения эпохи Ренессанса во Флоренции	... that users of the environment experience as a result of the degradation of that environment.
К повреждениям мы относим все негативные влияния	... lung cancer, chromic bronchitis are related to elevated levels of various pollutants.
Чрезмерная смертность от таких заболеваний как ...	... has had to be put inside to protect if from air pollution.

VI. Из приведённого текста выпишите 4 основные источника, влияющие на нормальные условия проживания человека.

VII. Составьте развёрнутый план пересказа текста.

VIII. Переведите письменно 2 абзац текста.

IX. Определите исходные формы следующих слов и найдите их значение в словаре: asset, damages, longer, suffered, dwellers, produce, had, facing, driven.

X. Зайдите русские эквиваленты следующих слов и словосочетаний:

disease	биологический вид
water mains	житель
dweller	водные артерии
elevated level	ухудшение
deterioration	повышенный уровень
species	разрушение
extinction	причастность
implication	вымирание

XI. Переведите следующие словосочетания:
river pollution, to treat the water, air pollution, river pollution, distruction, plant and animal species, important implications for humans, primary task, scientists and economists.

УРОК III

УПРАЖНЕНИЯ

I. Ниже приводятся первые предложения трёх абзацев текста. Сделайте вывод о его содержании.

1. A damage function shows the relationship between the quantity of a residual and the damage that residual causes.

2. There are two types of damage functions: emission damage functions and ambient damage functions.

3. The areas under marginal total damages functions correspond to total damages.

II. Прочитайте весь текст и проверьте правильность своих предположений.

Текст 10 А

DAMAGE FUNCTIONS

In general, the greater the pollution, the greater the damages it produces. To describe the relationship between pollution and damage, we will use the idea of a **damage function**. A damage function shows the relationship between the quantity of a residual and the damage that residual causes. There are two types of damage functions.

Emission damage functions: These show the connection between the quantity of a residual emitted from a source or group of sources and the resulting damage.

Ambient damage functions: These show the relationship between concentration of particular pollutants in the ambient environment and the resulting damages.

Damage functions can be expressed in a variety of ways, but our primary model will make use of marginal damage functions. A **marginal damage function** shows the **change** in damages stemming from a unit change in emissions or ambient concentration. When necessary, we can also use these relationships to discuss total damages because we know that, graphically, the areas under marginal damage functions correspond to total damages.

The height and shape of a damage function depends on the pollutant and circumstances involved. The exact units (pounds, tons, etc.) in any particular case depend on the specific pollutant involved. In physical terms, environmental damage can include many types of impacts: miles of coastline polluted, numbers of people contracting lung disease, numbers of animals wiped out, quantities of water contaminated, and so on. Every case of environmental pollution normally involves multiple types of impacts, the nature of which will depend on the pollutant involved and the time and place it is emitted.

III. Переведите следующие слова и словосочетания:
affect (v), costs, benefit, damage, environment, impact, discharge pipe, design, residual, waste.

IV. Найдите в тексте слова, несущие основную смысловую нагрузку.

V. Найдите в тексте примеры пагубного влияния загрязнённой окружающей среды.

VI. Определите значение выделенных слов.

VII. Найдите в тексте эквиваленты следующих терминов:
количество остаточного продукта, истреблённое животное, предельные функции ущерба, загрязнённое побережье, болезни лёгких.

VIII. Ответьте на следующие вопросы:

1. What is the damage function ?
2. What is the emission damage function ?
3. What is the ambient damage ?

IX. Устно переведите 1 абзац текста.

X. Проанализируйте 2 абзац текста. Выпишите и переведите незнакомые слова.

XI. Определите, к каким частям речи относятся следующие слова:
are depicted, quantity, some, measure contracting.

XII. Устно переведите текст.

УРОК IV

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Напишите 5-10 английских слов, которые, с вашей точки зрения, должны

встретиться в таком тексте. Проверьте правильность своих предположений по тексту.

II. Найдите в тексте ответы на следующие вопросы:

- Когда мы говорим об анализе экономического влияния ?
- Каковы уровни анализа экономического влияния ?

III. Определите соответствия найденных вами в тексте интернациональных слов в русском языке.

Текст 11 А

ECONOMIC IMPACT ANALYSIS

When interest centers on how some action — a new law, a new technological breakthrough, a new source of imports and so forth — will affect an economic system, in whole or in terms of its various parts, we can speak of economic impact analysis. In most countries, especially developing ones, there is usually wide interest in the impact of environmental regulations on economic growth rates. Sometimes the focus will be on tracing out the ramifications of a public program for certain economic variables that are considered particularly important. One might be especially interested, for example, in the impact of an environmental regulation on employment, the impact of import restrictions on the rate of technological change in an industry, the effects of an environmental law on the growth of the pollution-control industry, the response of the food industry to new packaging regulations, and so on.

A good example of an impact analysis is a recent study by two Dutch environmental economists. In the Netherlands there is an important problem with soil acidification, resulting in part from industrial emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_3), but also in part from agricultural practices in animal feeding and manure disposal. Various proposals have been made to reduce agricultural emissions of ammonia (NH_3). The objective of the researchers was to trace out the impacts of these proposed regulations on the agricultural sector. They concluded that the control program would lead to a decrease in net farm revenues of 35 percent during the period 1985-2010, a decline in the number of dairy cows, increases in yields per cow, declines in numbers of other animals, and a substantial reduction in the amounts of ammonia coming from the agricultural sector.

Economic impact analyses can be focused at any level. Regional group might be interested in the impacts of a national regulation on their particular economic circumstances. At the global level, an important question is how efforts to control CO_2 emissions might impact the relative growth rates of rich and poor countries. Whatever the level, economic impact analysis requires a basic understanding of how economies function and how their various parts fit together.

IV. Перечитайте текст и постарайтесь наиболее полно воспроизвести его содержание на русском языке.

V. Найдите в тексте предложения, в которых говорится о проблеме почвенного окисления.

VI. Найдите в тексте предложения, несущие основную смысловую нагрузку.

VII. Озаглавьте каждый абзац текста.

VIII. В приводимом ниже тексте в каждой строке найдите ту позицию, которую должно занимать слово из правой колонки.

A substantial part of	the
environmental impact stem from	will
the inundation itself the resulting	and
losses animals and plants,	in
wild-river recreation, and so on	
but much also come from changes	could
in patterns behaviour among people	of
affected the project.	by

IX. В правой колонке найдите русские эквиваленты следующих словосочетаний:

developing countries	диоксид серы
wide interest	индустриальные эмиссии
technological breakthrough	относительный рост
impact analysis	широкий интерес
industrial emissions	основное понимание
sulfur dioxide	технологический прорыв
substantial reduction	экономическое влияние
relative growth	анализ влияния
basic understanding	развивающиеся страны
economic import	значительное уменьшение

X. Заполните пропуски подходящими по смыслу словами.

1. In most countries, especially … , there is usually wide interest in the impact of environmental regulations on economic growth rates.
2. A good example of an impact analysis is … .
3. Economic impact analysis can be focused … .
4. Local environmental groups might be interested in … .
5. Regional groups might be interested in … .

XI. В тексте, вероятно, остались слова, значения которых вы не

знаете. Обсудите между собой их предполагаемый перевод. Проверьте себя по словарю.

XII. Письменно переведите текст. Контрольное время — 15 мин.

Текст 11 B

REGULATORY IMACT ANALYSIS

In the United States, the federal government has promulgated a procedure called regulatory impact analysis. First specified in an executive order of 1981, the procedure calls for federal agencies to conduct regulatory impact analyses (RIAs) for all major federal regulations. A basic component of an RIA is simply a benefit-cost analysis of an existing or proposed regulation. For example, the EPA sponsored an RIA in connection with its proposal to phase out the use of asbestos in manufacturing production processes. The costs of this are essentially the increased production costs for a large array of asbestos-using products stemming from switch to alternative materials. The benefits are the values associated with reduced health effects, particularly the reduced incidence of cancer.

УРОК V

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Напишите 5-10 английских слов, которые, с вашей точки зрения, должны встретиться в таком тексте. Проверьте правильность своих предположений по тексту.

II. Ответьте на следующие вопросы.

• С помощью какой формулы можно определить общее влияние человека на окружающую среду ?

• К чему может привести уменьшение численности населения ?

III. По нижеприведённым первым предложениям четырёх абзацев текста 12 A сделайте вывод о его содержании.

1. Many people feel that the only effective way to control environmental destruction in developing countries is to control the number of people in those countries.

2. It is clear that total environmental impact can increase as a result of increases in either or both of these factors.

3. The world population is generally expected to increase from the

current 5 billion to perhaps 15-20 billion over the next century, with two-thirds of this increase occurring in the developing world.

4. However, although reductions in population growth rates can certainly help to reduce the overall impacts any group of people has on its environmental resources, it is no substitute for undertaking environmental policies in their own right.

IV. Быстро прочитайте текст и перескажите его на русском языке.

Текст 12 А
POPULATION POLICY AS ENVIRONMENTAL POLICY

Many people feel that the only effective way to control environmental destruction in developing countries is to control the number of people in those countries. In the simplest possible terms, the total impact of a group of people on their environmental resources can be expressed in the following way:

Total environmental impact = Environmental impact per person × Number of people.

It is clear that total environmental impact can increase as a result of increases in either or both of these factors. The contrary is also true: Decreases in total impact can result from decreases in either or both of the factors. More complicated scenarios are possible: Changes in technology, economic structure, and so on that lower the per-capita environmental impacts in a country can be more than offset by population increases. But both factors are involved. Population declines, or declines in the rate of population increase, may be very helpful, but they are not sufficient in themselves to ensure a reduction in aggregate environmental degradation.

The world population is generally expected to increase from the current 5 billion to perhaps 15-20 billion over the next century, with two-thirds of this increase occurring in the developing world. Whether the increase is at the high end of this range or substantially lower depends in large part on the long-run behavior of fertility rates* in these developing countries. Although fertility rates in developing countries are sometimes very high, many have started to decline in recent years. To some extent this is a reflection of rising incomes, because increasing incomes are almost always associated with lowered fertility rates. Other important

causal factors are a reduction in infant mortality, increased availability of family planning services, and (especially) increases in educational opportunities for women. Continued emphasis on these factors is in the best interest of people in the developing world, not solely for environmental reasons, but also to reduce poverty directly and to make it easier to institute developmental changes.

However, although reductions in population growth rates can certainly help to reduce the overall impacts any group of people has on its environmental resources, it is no substitute for undertaking environmental policies in their own right. For one thing, diminished population growth rates do not necessarily automatically imply diminished environmental damages. Even with comparatively lower populations, for example, it is anticipated that developing countries will experience marked increases in urbanization in the next half century and probably beyond. Unless confronted directly, this will lead to more severe air and water pollution in these burgeoning urban areas. As another example, decreases in agricultural populations may not be accompanied by reduced resource damages if, simultaneously, a shift to chemical agriculture occurs without proper safeguards against water pollution and increased pest resistance. In other world, although population policies may facilitate reduced environmental damages, they are no substitute for direct environmental policy itself.

* The fertility rate is the average number of children born per woman over her lifetime, a rate of 2.0 implies zero population growth. Some developed countries have fertility rates of less than 2.0. In the developing world, fertility rates currently average about 3.8.

V. Сократите текст, оставив в неприкосновенности его основную идею. Для выполнения этой задачи решите следующее:

- какие предложения можно опустить без особого ущерба его содержанию;
- какой абзац целесообразно оставить полностью;
- какой абзац следует сократить.

VI. Озаглавьте каждый абзац текста.

VII. Придумайте 3-5 вопросов к любому абзацу текста. Обменяйтесь вопросами друг с другом.

VIII. Найдите русские эквиваленты следующих слов и словосочетаний:

environmental impact	годовой доход
total impact	возможность получать образование
increase	смертность
decrease	общее влияние
expect	увеличиваться
income	скорость роста населения
mortality	ожидать
educational opportunity	загрязнение воды
population growth rate	влияние на окружающую среду
agricultural	уменьшаться
water pollution	сельскохозяйственный

IX. Заполните пропуски подходящими по смыслу предлогами: to, with, in, with, from, in, in, by.

1. ... some extent thus is a reflection of rising incomes because increasing incomes are always associated ... fertility rates.

2. Establishing private property rights ... developing countries also means facing the demographic realities.

3. In places great population pressure, private property rights would hardly be feasible if that cut off a substantial proportion ... the population ... resources they need ... order to subsist.

4. Reducing airborn CO_2 emissions from power plants ... stackgas scrubbing also leaves a highly concentrated sludge that must be disposed of ... in some way.

X. Переведите следующие словосочетания на русский язык: a number of people, developing world, simplest possible term, next century, more complicated scenarios, fertility rates, economic structure, to reduce poverty, declines in the rate, environmental damages, two-third of this increase, agricultural population.

XI. В тексте, вероятно, остались слова, значения которых вы не знаете. Обсудите между собой их предполагаемый перевод. Проверьте себя по словарю.

XII. Переведите устно текст 12 В. Контрольное время — 5 мин.

Текст 12 B

A market is an institution in which buyers and sellers of consumer goods, factors of production, and so on carry out mutually agreed-upon exchanges. When they buy or sell on a market, people naturally look for the best terms they can get. Presumably buyers would like to pay a low price whereas sellers would prefer high prices. What brings all these conflicting objectives into balance is the adjustment of prices on the market.

XIII. Перечитайте текст и перескажите его своими словами.

БЛОК IV УРОК I

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту и подумайте, о чём может идти речь в тексте с таким названием. Напишите 5-10 английских слов, которые, с вашей точки зрения, должны встретиться в таком тексте. Проверьте правильность своих предположений по тексту.

II. Быстро прочитайте текст и воспроизведите его содержание как можно полнее.

III. Проверьте, помните ли вы значение следующих слов, встретившихся вам в тексте: environmental, damages, benefit, emission, ambient, impact, quality, health.

IV. Переведите следующие слова:

degradation, produce, measure, function, physical, model, biological, epidemiologist.

V. Определите исходные формы слов и подчёркнутых слов в словосочетаниях.

Estimating, associated, measuring damages, some of the most important, many billions of dollars are lost, causal factors.

Текст 13 A

MEASURING DAMAGES DIRECTLY

When environmental degradation occurs, it produces damages. In a very direct sense the benefits of improved environmental quality come about because of reduced damages. To measure a complete emissions damage function, it is necessary to go through the following steps:

1. Measure emissions.
2. Determine the resulting ambient quality.
3. Estimate human exposure.
4. Measure impacts (health, aesthetic, recreation, etc.).
5. Estimate the values of these impacts.

The first three of the steps are largely the work of physical scientists. Models that show the relation between emissions and ambient levels are often called diffusion models. Step 4 involves economists to some extent, but also biological scientists and epidemiologists. The linkage of Steps 3 and 4 makes use of dose-response functions. These relationships show the response in terms, for example, of human mortality and morbidity to varying exposure levels to environmental pollutants. Step 5 is where economics comes strongly into play — estimating the values associated with different impacts as identified in the previous step.

It might appear easy to measure benefits by measuring damages directly, but this will turn out not to be the case. To understand this let us look at several approaches that have been made in the past to measuring damages directly.

Some of the most important damages caused by environmental pollution are those related to human health. Air pollution, especially, has long been thought to increase mortality and morbidity among people exposed to it, certainly in the episodic releases of toxic pollutants, but also from long-run exposure to such pollutants as SO_2 and particulate matter. Diseases such as bronchitis, emphysema, lung cancer, and asthma are thought to be traceable in part to polluted air. Estimates of the health costs of air pollution suggest that many billions of dollars are lost each year. Water pollution also produces health damages, primarily through contaminated drinking water supplies. So the measurement of the human health damages of environmental pollution is a critical task for environmental economists.

Fundamental to this work is the underlying dose-response relationship showing the relationship between human health and exposure to environmental pollution of various types. Many factors affect human health — life styles, diet, genetic factors, age, and so on — besides ambient pollution levels. To separate the effects of pollution, one has to account for all the other factors or else run the risk of attributing effects to pollution that are actually caused by something else.

VI. Перечитайте текст и найдите в нём ответы на следующие вопросы:

- какие заболевания вызываются загрязнением воздуха ?
- какие причины (кроме влияния окружающей среды) способны ухудшить здоровье человека ?

VII. Озаглавьте каждый абзац текста.

VIII. Выберите правильный вариант перевода приводимых ниже слов.

when	когда, где, почему
complete	комплект, полный, комплекс
following	предыдущий, будущий, следующий
estimate	выравнивать, руководить, оценивать
relation	релаксация, связь
use	использовать, строить, ускорять
reduce	увеличивать, сравнивать, уменьшать

IX. Найдите в тексте данные, которыми можно было бы заполнить следующую таблицу:

what ?	who ?	why ?

X. Переведите письменно последний абзац текста.

УРОК II

УПРАЖНЕНИЯ

I. Внимательно прочтите название текста. Прежде, чем прочитать сам текст, обсудите между собой его предполагаемое значение. Вспомните, что вам известно по существу вопроса. Теперь прочитайте текст и проверьте правильность своих предположений.

II. Проверьте, помните ли вы значение следующих слов и словосочетаний:

air pollutants, materials damage, metal and stone surfaces, value, to affect, to increase output, data, domestic.

III. Переведите следующие слова и словосочетания:

municipalities, billion, problem, oxidant, nitrogen oxide, physical.

Текст 14 А

MATERIALS DAMAGE

Air pollutants cause damage to exposed surfaces, metal surfaces of machinery, stone surfaces of buildings and statuary, and painted surfaces of all types of items. The most heavily implicated pollutants are the sulfur compounds, particulate matter, oxidants, and nitrogen oxides. For the most part, the damage is from increased deterioration that must be offset by increased maintenance and earlier replacement. In the case of outdoor sculpture, the damage is to the aesthetic qualities of the objects.

In the case the dose-response relationship shows the extent of deterioration associated with exposure to varying amounts of air pollutants. The basic physical relationships may be investigated in the laboratory, but in application to any particular area one must have data on the various amounts of exposed materials that actually exist in the study region. Then it is possible to estimate the total amount of materials deterioration that would occur in an average year of exposure to the air of the region with its "normal" loading of various pollutants. One must then put a value on this deterioration. Taking a strict damage-function approach, we could estimate the increased cost of maintenance (labor, paint, etc.) made necessary by this deterioration, but this would be an underestimate of the true damages from a willingness-to-pay perspective. Part of the damages would be aesthetic — the reduced visual values of less sightly buildings and painted surfaces. We might arrive at these values through contingent valuation methods, discussed later. In addition, the maintenance cost approach would not be complete if pollution causes builders to switch to other materials to reduce damages.

IV. Перечитайте текст и найдите в нём ответы на следующие вопросы:

- какой ущерб наносит загрязнённая вода ?
- каким образом загрязнённый воздух наносит материальный урон ? Приведите примеры.

V. Найдите соответствия.

valuable timber	общие (суммарные) потери
total losses	издержки производства
production costs	ценные стройматериалы
material values	материальные ценности

material deterioration материальный ущерб

VI. Подберите подходящие по смыслу продолжения следующих предложений.

1. Air pollution can reduce ...
2. Water pollution can affect ...
3. Farmers may actually increase then use and farm this land more intensively ...
4. Part of the damages would be aesthetic ...

VII. Найдите в тексте 8-10 ключевых слов.

VIII. Сократите объём текста, оставив в неприкосновенности его основные идеи.

IX. Устно переведите 2 первых абзаца текста, письменно — последний абзац.

УРОК III

УПРАЖНЕНИЯ

I. Прочитайте текст и объясните, что означает понятие "opportunity costs" и почему это понятие не является одним из фундаментальных понятий в экономике.

II. Опираясь на содержание первых предложений каждого абзаца, сделайте вывод о содержании текста в целом.

1. In economics the most fundamental concept ...
2. Sometimes items that a private group ...
3. When most people think of cost they ...

III. Напишите 5-10 слов, которые, с вашей точки зрения, могут встретиться в тексте с таким названием. По тексту проверьте правильность своих предположений.

IV. Перечитайте текст и перескажите его на русском языке.

Текст 15 А

OPPORTUNITY COSTS

In economics the most fundamental concept of costs is opportunity costs. The opportunity cost of using resources in a certain way is the highest valued alternative use to which those resources might have been put and which society has to forgo when the resources are used in the

specified fashion. Note the word "society". Costs are incurred by all types of firms, agencies, industries, groups, and so on. Each has its own perspective, which will focus on those costs that impinge directly on them, but the concept of social opportunity costs includes all costs, no matter to whom they accrue.

Sometimes items that a private group might consider a cost (e.g., a tax) is not a cost from the standpoint of society. Sometimes items that particular decision-makers do not consider as costs really do have social costs. Suppose a community is contemplating building a bicycle path to relieve congestion and air pollution downtown. Its primary concern is what the town will have to pay to build the path. Suppose it will take $ 1 million to build it, but 50 percent of this will come from the state or federal government. From the town's perspective the cost of the bike path will be a half million dollars, but from the standpoint of society the full opportunity costs of the path are $ 1 million.

When most people think of cost they usually think of money expenditure. Often the monetary cost of something is a good measure of its opportunity costs, but frequently it is not. Suppose the bike path is going to be put on an old railroad right-of-way that has absolutely no alternative use, and suppose the town must pay the railroad $ 100,000 for this right-of-way. This money is definitely an expenditure the town must make, but it is not truly a part of the opportunity cost of building the path because society gives up nothing in devoting the old right-of-way to the new use.

V. Прочитайте ещё раз внимательно текст и найдите в нём определение таких понятий: opportunity costs, social opportunity costs.

VI. Найдите в тексте предложения, которые несут основную смысловую нагрузку.

VII. Озаглавьте каждый абзац текста.

VIII. Выберите один из абзацев текста. Придумайте 3-5 вопросов к нему. Обменяйтесь вопросами друг с другом.

IX. Найдите соответствия.

opportunity costs	себестоимость
the standpoint of society	издержки производства
air pollution downtown	точка зрения общества
costs of production	загрязнение воздуха в городе
cost price	возможные издержки

X. Составьте план пересказа текста.

XI. Определите исходные формы следующих слов и найдите их значение в словаре: highest, used, considered, thought, devoting, its, gives up, specified.

Текст 15 В

FOREIGN TRADE

In the realm of foreign commerce, the US led the world in the value of imports in 1986, and was second only to the Federal Republic of Germany in the value of exports. Exports of domestic merchandise, raw materials, agricultural and industrial products, and military goods amounted in 1985 to nearly $ 207 billion. One rapidly growing export category was computers, which rose from $ 1.2 billion in 1970 to $ 13.8 in 1985, grain exports rose from $ 2.6 to $ 11.25 in 1985.

From the value of combined exports and imports, the largest proportion of US foreign trade is with the nations of the Western Hemisphere. Canada is the nation's single best customer and supplier.

The UK, the world's fourth-largest trading nation, is highly dependent on foreign trade. It must export almost all its copper, ferrous metals, lead, zinc, rubber, and raw cotton. Its exports, about 67 % of which are manufactured goods, account for more than 30 % of GDP (Gross Domestic Product).

Principal trade partners in 1986 were as follows: FRG, US, France.

XII. Прочитайте текст 15 В и перескажите его на русском языке.

XIII. Сделайте письменный перевод текста. Контрольное время — 15 мин.

УРОК IV

УПРАЖНЕНИЯ

I. Внимательно прочтите название текста. Обсудите между собой его значение. Вспомните, что вам известно по существу рассматриваемого вопроса. Теперь прочитайте текст и проверьте правильность своих предположений.

II. Найдите в тексте предложения, несущие основную смысловую нагрузку.

III. Укажите русские эквиваленты приведённых ниже глаголов:

use	использовать, производить, рассматривать
forgo	подвергаться, отказываться, заключаться
consider	рассматривать, описывать, объяснять
reduce	преобразовывать, сокращать, производить
incur	влиять, изменять, подвергать
accrue	увеличиваться, уменьшаться, ровняться

Текст 16 А

ENVIRONMENTAL COSTS

It may seem paradoxical to think that environmental protection control programs might have environmental costs, but this is in fact the case. Most specific emissions-reduction programs are media based, that is, they are aimed at reducing emissions into one particular environmental medium such as air or water. So when emissions into one medium are reduced, they may increase into another. Reducing untreated domestic waste outflow into rivers or coastal oceans leaves quantities of solid waste that must then be disposed of, perhaps through land spreading or incineration. Reducing airborne SO_2 emissions from power plants by stack-gas scrubbing also leaves a highly concentrated sludge that must be disposed of in some way. Incinerating domestic solid waste creates airborne emissions.

Media switches are not the only source of environmental impacts stemming from environmental improvement programs. There can be direct effects; for example, sediment runoff from construction sites for new treatment plants or sewer lines. There can also be unforeseen impacts when firms or consumers adjust to new programs. Gasoline producers reduced the amounts of lead in their product, but because consumers still insisted on high-powered performance they added other compounds, which ended up having environmental impacts in their own right. With the beginning of community programs to charge consumers for solid waste disposal, some have been faced with substantial increases in "midnight dumping", that is, illegal dumping along the sides of roads or in remote areas.

Some of the potential environmental impacts these public projects or programs can be mitigated; that is, steps can be taken to reduce or avoid them. More enforcement resources can help control midnight

dumping, extra steps can be taken to reduce construction-site impacts, special techniques may be available to reduce incinerator residuals, and so on. These mitigation costs must be included as part of the total costs of any project or program. Beyond this, any remaining environmental costs must be set against the overall reduction in environmental damages to which the program is primarily aimed.

IV. Определите исходные формы следующих слов:
based, reducing, quantities, spreading, leaves, highly, unforeseen, outflow.

V. Переведите следующие слова и словосочетания:
paradoxical, control programs, fact, specific oceans, gasoline, special techniques.

VI. Найдите соответствия:

environmental protection control programs	выделения, распространяемые воздушным путём
solid waste	прямое воздействие
airborne emissions	твёрдые отходы
direct effect	программы контроля по защите окружающей среды

VII. Перечитайте текст 16 А и перескажите его на русском языке.

VIII. Как вы понимаете значение выражения "midnight dumping"? Объясните.

IX. В тексте, вероятно, остались слова, значения которых вы не знаете. Обсудите между собой их предполагаемые значения. Правильность своих предположений проверьте по словарю.

X. Сделайте письменный перевод текста 16 В. Озаглавьте его.

Текст 16 В

The coming of the chemical society has led to new sources of environmental damage and opened up new requirements for managing toxic and hazardous materials. At the federal level a number of major laws deal with toxic and hazardous substances, and numerous federal agencies are responsible for their administration. For the most part the laws incorporate a variety of command-and-control measures to identify and monitor the use of toxic materials in workplaces and consumer products, to

control toxic emissions from production, and to manage the complex process of disposing of hazardous materials.

Important points exist where the management of toxics could be substantially improved. One of these is to improve the procedures for "balancing" the costs and benefits of using chemicals in particular products and processes. We also discussed the new emphasis on waste reduction; that is, changes in production systems that lead to lower quantities of hazardous waste requiring disposal. Finally, we discussed the federal laws governing the handling and disposal of hazardous waste and the cleaning up of past dump sites.

БЛОК V УРОК I

УПРАЖНЕНИЯ

I. Ниже приводятся предложения из текста 17 А. Опираясь на заглавие текста и эти предложения, сделайте вывод о его содержании.

The 1972 Water Pollution Control Act Amendments was so utopian that it led to relatively little in the way of clear accomplishments.

Serious damage downstream and severely damaged the bacterial process in the municipal treatment plant helped to spur Congress to address toxic emissions more vigorously.

The law identified 65 specific compounds and classes of compounds containing about 125 chemicals.

II. Проверьте, запомнили ли вы значение следующих слов:

act amendments, contain, effluent, relatively, accomplishment, discharge, public, quantities, downstream, wastewater.

III. Определите части речи приведённых ниже слов, их начальную форму и способ образования: utopian, accomplishments, uncertainties, deadlines, unrealistic, applicable.

Текст 17 А

WATER POLLUTION-CONTROL LAWS

The 1972 Water Pollution Control Act Amendments, which established the major thrust of federal water pollution control, contained a section on toxic effluents. In keeping with the time, however, it was so

utopian that it led to relatively little in the way of clear accomplishments. The law stated that, similar to conventional pollutants, toxic discharges were to be prohibited, and it gave the EPA just 15 months to come up with a list of toxic pollutants and the regulations that would govern their emissions. After that, polluters would have one year to come into compliance. In a situation so full of uncertainties, these deadlines were completely unrealistic. It was another case where public posturing and looking tough on polluters was more important than the reality of achieving reductions in damaging emissions. In fact, relatively little progress was made in these early years. But another major toxic spill kept the issue in the public eye. A relatively small chemical plant in Virginia discharged quantities of the insecticide Kepone into the James River as well as into a nearby public wastewater treatment plant. It caused serious damage downstream and severely damaged the bacterial process in the municipal treatment plant. This helped to spur Congress to address toxic emissions more vigorously, which it sought to do in the 1977 Clean Water Act. This law identified 65 specific compounds and classes of compounds containing about 125 chemicals. The EPA was directed to determine and promulgate technology-based effluent standards using the criterion of "best available technology" (BAT) for these toxic pollutants.

IV. Найдите в тексте предложения, несущие основную смысловую нагрузку.

V. Выберите один из абзацев текста и придумайте 3-5 вопросов к нему. Попросите ответить на них других студентов. Обменяйтесь вопросами.

VI. Прочитайте текст и перескажите его своими словами.

VII. Поместите предлагаемые ниже слова в одну из следующих групп:

связующие элементы	термины	общенаучная лексика

so, utopian, pollutants, toxic, after that, in fact, progress, chemicals, technology.

VIII. Заполните таблицу существительными и прилагательными, относящимися к следующим понятиям:

water	emissions	plant	act	compaunds

IX. Найдите соответствия:

toxic effluent	ресурсы грунтовых вод
a list of pollutants	завод по переработке отходов
compound	применяемые стандарты
ground water resources	список загрязняющих веществ
applicable standards	смесь
public wastewater treatments plant	токсический выброс

X. Предложите ещё одно название к тексту. Обоснуйте своё предложение.

УРОК II

УПРАЖНЕНИЯ

I. Переведите заглавие текста 18 А. Обсудите предполагаемое содержание текста, не заглядывая в словарь.

II. Прочитайте текст. Постарайтесь максимально передать его содержание на русском языке. Сравните его содержание с вашими предположениями.

III. Посмотрите по словарю произношение и перевод следующих слов:
biologically, resources, domestic, element, commercial, components, era, recreational.

IV. Определите значение подчёркнутых слов, исходя из контекста.

Текст 18 А
FEDERAL WATER POLLUTION-CONTROL POLICY

Water is biologically necessary for life, but, beyond this, water resources play a vital and pervasive role in the health and welfare of a modern economy. Water for direct human consumption is a small but critical part of the domestic system, which also includes water used in food preparation, cleaning, and sewage disposal. Water is an essential element in many industrial and commercial production processes, again both as an input and as a medium of waste disposal.

The water resource system itself consists of a vast array of interconnected components, from the grandiose to the tiny. The surface-water

system includes the huge main-stem rivers and Great Lakes, as well as the thousands of small neighborhood streams and ponds. Add to these the innumerable person-made components, from the mill ponds of the first industrial era to the vast reservoirs and canals of today. Swamps and wetlands abound, ranging from small local bogs to the huge Everglades in southern Florida. And then there is the vast, but unseen, system of groundwater aquifers, exceeding surface waters in terms of sheer quantity of water. Saltwater resources are also of vital importance. Marshes and coastal lowlands are critical for fish and wildlife resources; beaches and scenic coasts are important recreational resources; coastal waters provide transportation and pleasure boating services; and saltwater fisheries are a major source of food.

Efforts to protect these water resources have gone on for a long time but with increasing vigor in the last few decades. In this chapter we look at federal water pollution-control policy. Our objective is to review the main elements of that policy with the economic concepts developed in preceding chapters. We also look at some recent policy innovations that seek to make use of economic incentives to achieve improvements in water quality. Most states and localities also have active water pollution-control efforts, some of which are tied into the federal programs.

V. Найдите в тексте слова, несущие основную смысловую нагрузку.

VI. Сократите объём текста, оставив основную идею.

VII. К каким частям речи относятся следующие слова: itself, lowlands, most.

VIII. Определите исходные формы и переведите следующие слова: includes, ponds, recreational, have gone, are tied.

IX. Помните ли вы значение следующих слов и словосочетаний:

water, resources, modern economy, domestic system, food preparation, sewage disposal, quantity of water, coastal waters, pollution-control policy.

УРОК III

УПРАЖНЕНИЯ

I. Опираясь на заглавие текста и приводимые ниже слова, определите его содержание. Chemical and physical nature of waterborne

pollutants, point sources, nonpoint sources, episodic emissions, persistent, degradable.

II. Найдите соответствия следующих слов в русском языке: organic, chemicals, inorganic, nonmaterial, infectious, bacteria, viruses, toxic metals, salts, acids, phosphorous, episodic, biological sanitary.

III. Запомнили ли вы значение следующих слов, которые уже встречались вами ранее: sewage, wastes, pollutants, heat, point sources, nonpoint sources, emissions, requirement, quality conditions.

IV. Запомните значение следующих связующих элементов: such as (такие как), or (или), but (но).

Текст 19 А

TYPES OF WATER POLLUTANTS

One way to categorize waterborne pollutants is by their chemical and physical nature.

- Organic wastes: degradable wastes such as domestic sewage, residuals from pulp mills, food processing plants; chemicals such as pesticides, detergents, solvents, oil.
- Inorganic substances: chemicals such as toxic metals, salts, acids; plant nutrients such as nitrate and phosphorous compounds.
- Nonmaterial pollutants: radioactivity, heat.
- Infectious agents: bacteria, viruses.

Point sources include outfalls from industry and domestic wastewater treatment plants. Nonpoint sources include agricultural runoff of pesticides and fertilizers and the chemicals and oils that are flushed off urban streets by periodic rains. Many sources, especially point sources, have continuous emissions related to the rate of operation of the industrial plant or the domestic sewers system. There are also many episodic emissions, such as accidental releases of toxic materials, oil-tanker accidents, on occasional planned releases of industrial pollutants.

In water pollution control it is more common to speak of persistent and degradable pollutants. Degradable waterborne pollutants undergo a variety of biological, chemical, and physical processes that change their characteristics after emission. Especially important are the oxygen-using chemical processes that rely on the oxygen contained in receiving waters to degrade the wastes. The reason for focusing on oxygen requirements is that oxygen plays a critical role in water quality. High levels of dis-

solved oxygen (DO) are usually associated with high-quality water, water that will support high-quality recreational uses and that can be used in domestic water-supply systems.

Since DO is used up in the degradation process, one way of measuring the quantity of waste emitted is through "biochemical oxygen demand", or BOD, the amount of oxygen required to decompose the organic material under specified conditions of temperature and time. A substantial proportion of the BOD load introduced into the water resources of the country comes from municipal waste-treatment plants. Much of this consists of wastewater from treated domestic waste, which contains a variety of degradable organic compounds. Industrial sources also contribute large amounts of BOD, some stemming from the sanitary facilities within the plants, but more importantly from the great variety of water-using steps in the production processes, such as cleaning, product formation, waster removal, and product transport.

V. Перечитайте текст и дайте определение типов загрязнения воды. Ответьте на вопросы.

1. Какова природа этих загрязнений ?
2. Каковы источники загрязнения воды ?
3. Что такое DO ? Каким образом DO связывается с высоким качеством воды ?
4. Что такое BOD ?

VI. Нарисуйте схему загрязнения воды, зная природу и источники загрязнения воды.

VII. Сократите объём текста, оставив его основную идею.

VIII. Перескажите текст своими словами.

IX. Определите исходные формы следующих слов, найдите их значение в словаре:

planned, focusing, dissolved, are associated contains, compounds.

X. Найдите английские эквиваленты следующих слов и словосочетаний:

неорганические субстанции	organic wastes
органические отходы	inorganic substances
передающиеся с водой загрязнения	waterborne pollutants
постоянные загрязнения	nonmaterial pollutants
удаление отходов	point sources
водоносные системы	episodic emissions

точечные источники	persistent pollutants
уничтожение отходов	water pollution control
контроль за загрязнением воды	water supply systems
нематериальные загрязнения	waste removal

XI. В тексте, вероятно, остались слова, значение которых вы не знаете. Обсудите между собой их предполагаемый перевод. Правильность предположений проверьте по словарю.

УРОК IV

УПРАЖНЕНИЯ

I. Опираясь на заглавие текста 20 А и приводимые ниже ключевые слова, определите его содержание: waterborne emissions, sewer systems, reducing, treatment plants, domestic wastes, degrees of treatment.

II. Переведите следующие слова:
urbanized, authorities, physical, biological, percent, nitrogen, phosphorus, variety.

III. Знаете ли вы значения следующих слов и словосочетаний из приводимого ниже текста, которые уже встречались вами ранее: waterborne, waterways, private, industries pollution, reduce, treatment, sediment, remove, primary, secondary, tertiary, marginal.

Текст 20 А
THE MUNICIPAL WASTEWATER TREATMENT PLANT SUBSIDY PROGRAM

A large proportion of waterborne emissions into the nation's waterways comes not from private industries but from public bodies, especially from the public sewer systems of urbanized areas. Whereas in the case of industrial pollution federal authorities adopted a policy of having polluters themselves pay for reducing emissions, the response toward public-sector pollution has been different. Here the major approach has been federal subsidies to construct treatment plants. The inspiration for this type of approach probably comes form two sources, the normal public-works mentality of the Congress and the fact that it is better politics to "get tough" on industrial polluters than on cities and towns.

Treatment of domestic wastes uses both physical and biological processes and is fairly standardized. The different degrees of treatment are designated primary, secondary, and tertiary, according to the process used and the extent of treatment given to the wastes. Primary treatment is essentially a set of physical steps built around a basic sedimentation process; it can remove about 35-40 percent of the primary BOD in the original waste stream. Secondary treatment uses biological means (e.g. "activated sludge") to further treat the waste. Primary and secondary processes together can reduce BOD by between 85 and 90 percent. These processes, although quite effective in removing BOD, are less so in handling plant nutrients such as nitrogen and phosphorus. So-called tertiary treatment, making use of a variety of chemical processes, can reduce waste loads even more. The sequence of primary, secondary, and tertiary processes is subject to increasing marginal abatement costs; the greater the reduction one wants in BOD or other pollutants in the waste stream, the higher the marginal cost of getting it.

IV. Найдите в каждом абзаце текста предложения, несущие основную смысловую нагрузку.

V. Дайте ответы на следующие вопросы:

1. Из каких источников приходит большая часть находящихся в воде вредных веществ ?
2. Какой важный шаг был сделан для улучшения качества воды ?
3. Какие процессы используются для обработки отходов? Назовите принцип их действия.

VI. Составьте план текста, раскрывающий основную его идею.

VII. Прочитайте текст ещё раз и перескажите его, пользуясь своим планом.

VIII. Определите часть речи и исходные формы следующих слов:

adopted, having, here, plants, better, are designated, extent, primary.

IX. Найдите соответствия:

waterborne emissions	частный сектор промышленности
private industries	общественные системы сброса
public sewer systems	эмиссия, переносимая водой
federal subsidies	предельные издержки
marginal costs	федеральные дотации

X. Поместите предлагаемые ниже слова в одну из следующих групп:

связующие элементы	термины	общенаучная лексика

but, emissions, both, from according, toward, polluters, sediment, biological, BOD, nitrogen, phosphorus, e.g.

XI. В тексте, вероятно, остались слова, значение которых вы не знаете. Обсудите между собой их предполагаемый перевод. Правильность предположений проверьте по словарю.

XII. Выпишите из текста и выучите наизусть все слова, связанные так или иначе с понятиями "отходы", "загрязнения".

БЛОК V I УРОК I

УПРАЖНЕНИЯ

I. Внимательно просмотрите текст и ответьте на следующие вопросы:

- какие проблемы могут возникнуть при увеличении количества УФ радиации ?
- что включает в себя понятие "Монреальский протокол" ?
- что влияет на радиационный баланс земли ?
- что влияет на повышение средней температуры ?

Текст 21 А

The increased ultraviolet radiation this will produce at the earth's surface is expected to increase skin cancers and eye cataracts and have a substantial impact on agricultural production. In recent years chemical companies have had success in developing substitutes for CFCs. This greatly facilitated the signing of the Montreal Protocol, an international agreement among most of the nations of the world that will lead to a phase out of the production and consumption of CFCs over the next few decades.

The global greenhouse effect will be more difficult to deal with. Burning fossil fuels has increased the CO_2 content of the atmosphere, affecting the earth's radiation balance and leading to an increase in mean global temperatures. Substantial impacts are expected on weather pat-

terns around the globe. These are expected to disrupt agricultural operations in significant ways. A rise in the sea level will have profound impacts on coastal communities. A substantial attack on the phenomenon will require cutting back on the use of fossil fuels. Virtually all countries are dependent to a greater or lesser extent on fossil fuels to power their economies. Thus, we must emphasize cost-effective policies to improve energy efficiency and to switch to fuels that emit less CO_2. It is likely to be many years before a meaningful international agreement can be reached on this problem.

The destruction of biological diversity is a subtler global problem, but it may be just as costly in the long run. Dealing with this problem will require greater efforts to preserve habitat and develop agriculture that is compatible with species preservation. Effective action will mean doing something about the incentives that currently lead to species destruction.

II. Перечитайте текст и перескажите его на русском языке.

III. Дайте название тексту.

IV. Найдите в тексте предложения, несущие основную смысловую нагрузку.

V. Найдите в тексте предложения, рассматривающие проблему парникового эффекта.

VI. Озаглавьте каждый абзац текста.

VII. Выберите один из абзацев текста и придумайте 3-5 вопросов к нему. Обменяйтесь вопросами с другими студентами.

VIII. Найдите соответствия:

глубокое влияние	ultraviolet radiation
сельское хозяйство	substantial impact
существенное влияние	international agreement
ископаемое топливо	biological diversity
биологическое разнообразие	fossil fuels
ультрафиолетовая радиация	agriculture
средняя температура	profound impact
международное соглашение	mean temperature

IX. В тексте, вероятно, остались слова, значение которых вы не знаете. Найдите их перевод в словаре.

X. Переведите текст 21 В. Контрольное время — 15 мин.

Текст 21 В

ENVIRONMENTAL COOPERATION

What do the Russian Federation and the Netherlands have in common environmentally? A layman would say "nothing" !

Russia is big and empty, has an incredible amount of virgin and pristine taiga and tundra and has, unfortunately, to cope with the poor environmental record it inherited from the Soviet Union. On the contrary, the Netherlands is small, densely populated, highly industrialized and well-known for its awareness of environmental issues.

Considering these differences, developing a foundation for environmental cooperation seems unlikely.

However, cooperation in the environmental field began on the eve of the breakup of the Soviet Union. In March 1991, a Memorandum of Understanding was signed between the USSR State Committee for Environmental Protection and the Netherlands' ministry of Housing, Spatial Planning and the Environment, or VROM. Since environmental matters in the Netherlands are tackled by not one but three ministries, VROM also signed on behalf of its colleagues from the Ministry of Transport and Public Works and the Ministry of Agriculture, Nature Management and Fisheries, or LNV.

Since then the Soviet Union has ceased to exist, giving birth to fifteen newly independent states, but the spirit of cooperation outlined by that initial agreement has been pursued by the Russian State Committee for Environmental Protection. The issues outlined in the agreement cover the industrial and urban environment, water management and nature management. Recently, when the State Committee was abolished, responsibility for environmental matters in Russia was taken over by the Ministry of Natural Resources.

XI. Ответьте на следующие вопросы:

- какие проблемы затрагиваются в подписанном соглашении ?
- что включает в себя сотрудничество в области экологического образования ?

УРОК II

УПРАЖНЕНИЯ

I. Прежде, чем прочитать текст 22 А, ознакомьтесь со словами: emissions, airborne industrial plants, management of airborne and waterborne pollutants, household sources. Обсудите предполагаемое содержание текста, опираясь на эти словосочетания.

II. Каким образом токсические вещества влияют на окружающую среду ? Ответьте на этот вопрос, прочитав только название текста 22 А. Обоснуйте свой ответ.

III. Помните ли вы значения следующих слов, встречавшихся вам ранее:
dry cleaning, help, environment, heavy metals, solids, estimate, impact.

IV. При необходимости используя транскрипцию, произнесите правильно следующие слова: spur, concern, suspended, operation, grips, associated.

V. Прочтите текст и проверьте правильность своих предположений относительно влияния токсических веществ на окружающую среду. К каким выводам вы пришли ?

Текст 22 А

FEDERAL POLICY ON TOXIC EMISSIONS

Toxic emissions come in a great variety of forms, from small airborne releases of cleaning fluid from dry cleaning establishments to large-scale releases of toxics from substantial industrial plants. Also included are the concentrated accidental releases that have helped in the past to spur public concern about toxic in the environment. Not all toxics are chemicals; some, like heavy metals (mercury, cadmium, etc.) are by-products of various industrial and mining operations.

When emissions-control policies at the national level were first being hammered out, the main focus was on the management of conventional airborne and waterborne pollutants. For air this meant the criteria pollutants — SO_2, CO, O_3, NO_x, total suspended particulates, and lead — and for water it meant BOD suspended solids, coliform count, and so on. Even in these early days, however it was known that there was a potentially serious class of toxic emissions stemming from industrial pro-

duction operations, as well as from household sources. But the difficulties with even enumerating all of the possible substances involved and of knowing what impacts each might have, essentially led to putting off coming to grips with the problem. In addition, the control of conventional pollutants has been effective to some extent in controlling toxics, since they are often closely associated. Indeed, the EPA estimated that, as of the mid-1980s, the criteria pollutant-control programs were responsible for a large reduction in airborne toxics than were specific toxic reduction programs. In recent years, however more effort has gone into specific toxic emissions reduction programs.

VI. Нарисуйте схему влияния токсических веществ на окружающую среду.

VII. Прочитайте текст ещё раз, обращая внимание на ключевые слова. Перескажите его своими словами.

VIII. Выберите правильный вариант перевода подчёркнутых слов.

1. Not all toxics are chemicals. (не много, не все)
2. Also included are the concentrated. (также, кроме того)
3. Even in these early days ... (даже, ещё)
4. However, it was known ... (каким образом; тем не менее; несмотря на то, что)
5. ... as well as from house hold sources ... (хорошо; также же, как и)

IX. Выберите русские эквиваленты следующих слов:

large-scale	большая шкала, крупномасштабный, массовый
focus	фокус, центр, объединение
involve	вовлекать, внутренний, затрагивать
effort	усилие, эффект, влияние

X. Определите значение подчёркнутых слов, исходя из контекста. Проверьте себя по словарю.

XI. Найдите соответствия:

toxic emissions	водная эмиссия
conventional pollutants	массовый выход токсических веществ
large-scale releases of toxics	обычные загрязняющие вещества
house hold	в последние годы
waterborne emissions	токсическая эмиссия
recent years	домашнее хозяйство

УРОК III

УПРАЖНЕНИЯ

I. Переведите заглавие к тексту 23 А. О чём может идти речь в тексте с таким названием ? Напишите 5-10 слов, которые, с вашей точки зрения, должны встретиться в тексте с таким заголовком. Проверьте правильность своих предположений по тексту.

II. Опираясь на свои знания, ответьте на следующие вопросы:

- для чего были установлены законы, контролирующие загрязнение воздуха и воды ?
- каким образом были выявлены опасные вещества, находящиеся в воздухе и причиняющие ущерб здоровью человека ?
- в чём сходство эволюции законов о загрязнении воздуха и воды ?

III. Определите соответствия следующих слов в русском языке:
arsenic, asbestos, benzene, beryllium, mercury, radionuclides, venyl chloride.

IV. Помните ли вы значения следующих слов, встречавшихся вам ранее:
airborne emission, compound, progress, basic, scientific, human, program, damage, health.

V. Прочитайте текст и нарисуйте схему эволюции закона о загрязнении воздуха.

Текст 23 А

AIR POLLUTION – CONTROL LAWS

Airborne emissions of toxic compounds were also addressed in early environmental laws, but, like the waterborne emissions, the pace of progress in actual control has been very slow. Section 112 of the 1970 Clean Air Act Amendments authorized the EPA to establish controls for any airborne emissions it felt were particularly dangerous. On the basis of EPA studies, that agency was first supposed to "list" a substance as hazardous, then develop technology-based emission standards, using BAT, for its control. Progress in listing hazardous pollutants was very slow; over the next two decades, the EPA was able to list and establish emission standards for only seven materials (arsenic, asbestos, benzene,

beryllium, mercury, radionuclides, and vinyl chloride). The basic problem has been it getting unambiguous scientific results about the extent to which particular hazardous materials actually cause human health damages. In fact, in 1979 the EPA attempted to change the criterion so that it could use the results of animal (i.e., nonhuman animal) studies to list hazardous materials. In 1985 the EPA announced its intention to list six more substances (1.3-butadiene, cadmium, ethylene dichloride, chloroform, ethylene oxide, and methylene chloride). But the 1990 Clean Air Act Amendments took the matter out of its hands. The law specifically mentions 189 toxic substances that are to be controlled, and the EPA is charged with determining technology-based emission standards, using a concept of "maximum achievable control technology" (MACT). The law establishes a timetable that EPA is supposed to meet in developing these standards. The act also contains plans for a program to prevent accidental releases of airborne toxics, the establishment of a National Urban Air Toxics Research Center, and numerous other sections.

VI. Найдите в тексте основные, с точки зрения смысловой нагрузки, слова.

VII. Придумайте 3-5 вопросов с ключевыми словами: law, emission. Обменяйтесь вопросами друг с другом. Попросите ответить на них.

VIII. Прочитайте текст ещё раз и перескажите его, не упустив основную мысль.

IX. Определите исходные формы и перевод следующих слов: adressed, using, its, was able, unambiguous, could.

X. Найдите соответствия:

waterborne emission	скорость прогресса
the pace of progress	недвусмысленные научные результаты
hazardous substance	водная эмиссия
unambiguous scientific results	опасная субстанция

XI. Определите значения подчёркнутых слов, исходя из контекста.

СОДЕРЖАНИЕ

37р.

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