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ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

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Text book in English Conversation Practice
for the first-second year students

Part 2

Методическое пособие
по развитию навыков устной речи на английском языке
для студентов 1-2 курсов ФКП, ФТК, ФРЭ, ЭФ

В 2-х частях

Часть 2

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Авторы: Н.А. Новик, И.В. Войтова, П.Г. Елисеева, В.П. Киселева, М.В.Кравченко, А.В. Крутченко, Е.И. Лозицкая, С.И. Лягушевич, Т.А. Путрина, Л.М. Сакович, А.И. Снежко, О.В. Туник, Н.В. Щурок

Настоящая работа является продолжением методического пособия по развитию навыков устной речи на английском языке и рассматривает следующие устные темы: "Экология", "Моя специальность" для студентов ФТК, ФКП, ФРЭ, ЭФ.

Содержание

UNIT V.   ECOLOGY

Part I. Text: LIVING ON PLANET EARTH

*In nature there are neither
rewards nor punishment –
there are consequences
Robert G. Ingersoll*

The image of earth from space is that of oneness, a solitary blue sphere, largely water and air, carrying its thin inextricably connected tissue of life. It is an image, too, of the international character of environmental challenges of building a sustainable future.

Environment is a combination of the external factors affecting an organism. These factors may be other living organisms (biotic factors) or nonliving variables (abiotic factors), such as water, soil, climate, light, and oxygen. These interacting factors together make up an ecosystem. Organisms and their environment constantly interact, and both are changed by this interaction. Humans have clearly changed their environment on a grander scale than any other species.

The problems facing the environment are vast and diverse. Destruction of the world's rainforests, global warming, and the depletion of the ozone layer are just some of the problems that will reach critical proportions in the coming decades. Their rates will be directly affected by the size of the human population.

The more civilization is developing, the greater the ecological problems are becoming. Factories, power stations and motor vehicles pump large quantities of carbon dioxide and other waste gases into the air. This is a major cause of the greenhouse effect. Air pollution, for instance in Mexico City, Chicago and Sheffield (England) remains the worst. Some people say the air in these cities is so bad that breathing it is equivalent to smoking a pack of cigarettes a day. Smog, usually found in urban areas, can cause brain damage in children and other serious health problems.

Some poisonous gases dissolve in water in the atmosphere and then fall to the earth as acid rain. Acid rain has made numerous lakes so acidic that they no longer support fish populations. Acid rain is also thought to be responsible for the decline of many forest ecosystems worldwide. Germany's Black Forest has suffered dramatic losses, and recent surveys suggest that similar declines are occurring throughout the eastern United States. Rivers and lakes are also polluted by chemical fertilizers and pesticides used by farmers.

The greenhouse effect has lead to global warming. Normally, heat from the sun warms the earth and then escapes back into space. But CO_2, SO_2 and other gases trap the sun's heat, slowly making the earth warmer. Scientists say the temperature of the earth could rise by 3^oC over the next 50 years. This may cause drought in some parts of the world, and floods in others, as ice at the North and South Poles begins to melt and sea levels rise.

Rainforests absorb CO_2 and help to control global warming. In recent years, large areas have been destroyed as the trees are cut down for wood or burned to clear the land, for farming. As a result, large areas turn to desert. Many plant and animal species, like chimps and other primates, that live there could become extinct.

In our era environmental racism takes international forms as well. Scientists have recently discovered holes in the ozone layer. The ozone layer is a thin band in the stratosphere that serves to shield the earth from the sun's harmful ultraviolet rays. The depletion of the ozone layer is caused by substances called CFCs used in refrigerators, aerosol cans and in the manufacture of some plastic products. Increased ultraviolet radiation will lead to a growing number of skin cancers and also reduce the ability of people's immune systems to respond to infection.

Most of the energy we use today comes from coal, oil and gas. But these will not last forever, and burning them is slowly harming the atmosphere. Nuclear energy as an alternative is opposed by many because of the massive devastation an accident can cause. The accident at the Chernobyl nuclear power plant in 1986 scattered radioactive contamination over a large part of Europe. 70 per cent of the radiation descended in Belarus. Approximately 135 000 people were evacuated, and human health has been dramatically affected. The World Health Organization released a report in late 1995 attributing the "explosive increase" in childhood anemia, thyroid cancer in Belarus, Ukraine, and Russia directly to the accident.

Unhappily the story of man includes not only pioneering of unknown lands, scientific discoveries and the conquest of outer space, but the careless killing of wildlife and the careless exploitation of natural resources, the pollution of rivers and streams and the destruction of forest lands.

The relationship between man and nature has become one of the most vital problems facing civilization today. People are just beginning to comprehend the enormity of the ecological crisis. Lawrence Durrell said: "We are the children of our landscape; it dictates behavior and even thought in the measure to which we are responsive to it."

A. Active Vocabulary

Noun and noun phrases

contamination – загрязнение, заражение
consequence - последствие
damage – повреждение, ущерб; bring damages to – наносить вред
disaster - бедствие, несчастье
drought - засуха
dump – свалка
environment – окружающая среда
exhaust pump – выхлопная труба
fertilizer - удобрение
flood – наводнение, половодье
fume – дым, испарение
species (pl без измен.) – вид, род, разновидность
surface – поверхность, внешность
waste – отбросы (производства), расточительство

Verbs and verbal phrases

affect– воздействовать, влиять
breathe – дышать, дуть
cause – причинять, вызывать
decline – отклонять, подходить к концу, ухудшаться
deplete – истощать, исчерпывать
devastate – опустошать, разорять
dissolve – растворять(ся), таять, испарять(ся)
estimate - оценивать
exhaust – истощать, исчерпывать, (n) – выпуск, выхлоп
interact - взаимодействовать
oblige – обязывать, заставлять
occur – иметь место, случаться
pollute – загрязнять (with) чем-либо
pour (into, in) - наливать
protect – охранять, защищать

scatter – разбрасывать, рассыпать
suffer (from) – страдать, терпеть

<center>Adjectives</center>

diverse – иной, отличный, разнообразный
extinct – потухший, вымерший
hazardous - рискованный

B. Passive Vocabulary

abiotic (adj) - неживой
abiology (n) – учение о неживой природе
abuse (n) – злоупотребление, оскорбление
acid (n) - кислота
cancer (n) – рак (*мед.*)
challenge (n) – вызов, оклик, призыв
indelible (a) – нестираемый, неизгладимый
inextricable (a) – сложный, запутанный, неразрешимый
kin (a) родственный
oneness – единство, тождество
punishment (n) наказание
reward (n) – награда; (v) – воздавать, награждать
shield (v) – защищать, заслонять
survey (n) – обозрение, осмотр; (v) – обозревать, производить съемки
sustainable (a) – зд. устойчивый, надежный
tissue (n) - ткань
thyroid (n) – щитовидная железа

Class Vocabulary Exercises

I.   Repeat and translate into Russian.
a)   the following words with the stress on the first syllable:

atmosphere, stratosphere, area, damage, ocean, climate, era, suffer, hazardous, nature, species, fertilizer, thyroid, global, surface, weather, substance, accident, punishment, nuclear, survey, oneness

b)   the following words with the stress on the second syllable:

ecology, pollution, dissolve, resources, extinct, disaster, exhaust, evacuate, immune, effect, protect, depletion, control, alternative, oblige, abuse

c)   the following words and word combinations with 2 or more stresses:

contamination, interact, environment, devastation, civilization, ultraviolet, radiation, population, radioactive, international, organization, exploitation

II.   Repeat and translate into Russian the following sentences
1.   The earth is an integral system.
2.   The problem of environment pollution has become the most important one.
3.   The growth of industrialization is changing the climate of our planet.
4.   Water, air and soil are becoming more and more polluted.

5. It is difficult to predict changes in the environment accurately.
6. The law obliges people to protect nature.
7. Most big cities pour their waste into seas and rivers.
8. Natural resources should be used economically.
9. It is urgent to build cleaning systems to avoid the pollution of rivers.
10. Many plants and factories have been removed from the city.
11. At least one unique life form disappears from our planet every day.

III. Form
a) *nouns from the following verbs using the suffixes –tion; -or; -er; -ance:*

   to apply, to protect, to suffer, to contaminate, to collect, to operate, to select, to explore, to resist

b) verbs from the following nouns:

   development, lecturer, inventor, achievement, movement, equipment, influence, discovery, resistance, introduction, population

c) *adjectives from nouns using the suffix –ous, -ant, -ent:*

   number, fame, variety, tremble, monotony, poison, anxiety, mountain, environment, distance, consequence, absence, presence

IV. Arrange the words of the two groups in pairs with similar meaning
a) exhaust, rate, affect, diverse, constantly, shield, reach, respond, area, interact, vast, inextricable
b) sphere, steady, large, co-operate, answer, achieve, protect, waste, influence, sophisticated, speed, different

V. Arrange the words of the two groups in pairs with contrary meaning
a). abiotic, ability, pollute, the worst, loss, dissolve, flood, destroy, desert, exhaust
b) build, oasis, absorb, clean, drought, the best, biotic, find (n), crystallize, inability

VI. Make up your own sentences using the following words and word combinations
   unhealthy environment, to be covered with soot and dirt, noise and air pollution, to affect harmfully, poisonous substances, to be defenseless against, hard to breathe, to turn the land into a desert, exploitation of natural resources, the ozone layer, the greenhouse effect ultraviolet rays, to control global warming

Special Difficulties

I. Translate the following sentences into Russian
1. The bigger the cities are, the greater the pollution is.
2. The more computers and robots are used in industry, the quicker technological progress will be.
3. The more automobiles appear in the streets, the worse the air in the cities is.
4. The more effective is the technology, the quicker is the development of this country.
5. The quicker we join our efforts in protecting the environment, the quicker the ecological problems are solved.

II.   Make up your sentences using the following tables

The illness				infection
The plane				kindness
Children	respond(s)	well	to	treatment
Man's immune system	(-ed)	quickly		control

III*.   Determine the meanings of " **one** "and **that**" in the following sentences and translate into Russian*
1.   One must realize that the increasing number of cars brings about considerable pollution of the air.
2.   We discussed the first industrial revolution, the one that took place some centuries ago.
3.   The problem that has become the most important one is the problem of pollution.
4.   That the Earth is round was unknown for a long time.
5.   It is growth of industrialization that is changing the climate of the planet
6.   The new technologies that are being developed must be connected with traditional ones.
7.   It is invention of on engine that started the first industrial revolution.
8.   One can easily understand why the protection of environment requires special attention to.
9.   The simplest materials are those which have only one kind of atoms.
10.   The main goal of education is that graduates must be able to work with the technology of tomorrow.

III.   Convert direct speech into indirect one
1.   He said, "This text is about ecological problems".
2.   The Green party says: " Stop pouring harmful substances into rivers and seas!"
3.   The teacher said: "Where does the pollution come from?"
4.   William Shakespeare said: "One touch of nature makes the whole world kin"
5.   The minister said: "Green zones must be created."
6.   A reporter said: "People started pollution. People must stop it."

Home Vocabulary Exercises

I.   Arrange the following words into your own sentences
1.   factories, into, release, the atmosphere, some, and plants, substances, harmful
2.   itself, soil, destroys, the nation, that, destroys, its, (Franklin D. Roosevelt).
3.   draw, public, to mass media, problems, ecological, attention
4.   deals, ecology, the relationships, with, nature, of, man, and
5.   was, the exhaust, from, the air, black
6.   acres, forests, the earth, 20 million, of, every, tropical, year, loses
7.   quality, scandalously, is, our, low, water
8.   chemicals, of, all, are, kinds, the rivers, into, pouring, and streams

II.   Fill in the blanks with the words given below
1.   Terrible … to the environment have been headlined on TV and in the press.
2.   Greenpeace began with … into a nuclear test zone.

3.   Nuclear … … at sea has been stopped.
4.   New laws … the North Sea have been promised.
5.   Pandas and chimps are on the verge of becoming …
6.   The government takes measures to prevent … of water …
7.   Our cities … air pollution.
8.   Special effective systems enable us … the amount of harmful … … in the air.
9.   Scientific farming produces products that are grown without …

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suffer from, to reduce, a protest voyage, abuses, the pollution, chemical waste, resources, waste dumping, to protect, pesticides, extinct

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III.   Fill in the blanks with the prepositions given: in, into, to, from, with, by, on, for
1.   Big cites pump large quantities of CO_2 … the air.
2.   Where does the pollution come … ?
3.   Rivers can also be polluted … industrial waste … factories and chemical fertilizers.
4.   Mexico, Chicago and Tokyo are covered … soot and dirt.
5.   Poisonous gases bring damages … our health.
6.   More than 200 million people depend … the tropical forests.
7.   Seventy percent of the earth is covered … oceans. Oceans are vital to life … earth. They provide homes … millions of plants and animals, provide people … food and help regulate the climate.
8.   The Baltic Sea has suffered … oil and industrial waste products.
9.   Poisonous gases dissolve … water and then fall … the earth as acid rain

IV.   Translate into English
1.   Загрязнение воздуха наносит вред здоровью человека.
2.   Парниковый эффект влияет на климатические условия во всем мире.
3.   Озоновый слой защищает нашу планету от вредного воздействия ультрафиолетовых лучей.
4.   Тропические леса поглощают CO_2 и помогают контролировать уровень глобального потепления.
5.   Многие виды животных и растений исчезают с лица Земли.
6.   Кислотные дожди разрушают реки, почву и леса.
7.   Уровень загрязнения воздуха в Минске очень высок.
8.   Сброс вредных отходов в океан продолжается.
9.   Взрыв на Чернобыльской атомной станции в 1986 г. нанес непоправимый вред окружающей среде не только Республики Беларусь, но и всей Европы.
10.   Человечество только начинает осознавать масштабы экологической трагедии.

Text Comprehension Exercises

I.   Listen to the text " Living on Planet Earth" and answer the following questions:

1.   The problem of environmental pollution has become the most important one for mankind, hasn't it?
2.   Are the problems facing the environment vast and diverse?
3.   Where is smog usually found in?

II.   Listen to the text again and say which of the following replies is correct
1.   a) air pollution in Mexico City remains the worst.

b) New York City is one the most polluted cities in the US.

c) air pollution in London is now reaching tremendous proportions.

2. a) the depletion of the ozone layer is caused by the growth of population.

   b) the depletion of the ozone layer is caused by substances called CFCs.

   c) the depletion of the ozone layer is caused by CO_2.

3. a) many plant and animal species will survive in the future.

   b) the extinction of chimps and pandas occurred millions of years ago.

   c) many plant and animal species could become extinct.

4. a) acid rain is responsible for the decline of mankind.

   b) acid rain is responsible for the decline of many fish populations.

   c) acid rain is responsible for the decline of many forest ecosystems in the world.

5. a) scientists say the temperature of the earth could rise by 3°C over the next 100 years.

   b) scientists say the temperature of the earth could rise by 3°C over the next 50 years.

   c) scientists say the temperature of the earth couldn't rise over the next 50 years.

Text Exercises

I. *Read the text "**Living on Planet earth**" and find in it English equivalents of the following words and word combinations.*

Окружающая среда, загрязнять, углекислый газ, парниковый эффект, выбросы вредных веществ, кислотный дождь, тропический лес, химические удобрения, озоновый слой, радиоактивное загрязнение, рак щитовидной железы, экологический кризис, наводнение, засуха, атомная энергия, здоровье, внешний фактор, альтернативный источник энергии, ядовитые газы, поглощать

II. *Read the text and answer the following questions.*

1. What does our planet look like from outer space?
2. What makes up an ecosystem?
3. What factors are slowly changing the global climate and water balance?
4. Where does the energy we use today come from?
5. What has the Chernobyl disaster changed?
6. What animals are most in danger of becoming extinct?
7. What are possible consequences of global warming?

III. *Agree or disagree with the following statements.*

1. Organisms and their environment constantly interact.
2. With the development of civilization all ecological problems will be solved.
3. The ozone layer doesn't shield the earth from the sun's harmful ultraviolet rays.
4. The greenhouse effect may cause drought in some parts of the world, and floods in others.
5. Increased ultraviolet radiation will lead to a growing number of plant and animal species.
6. Acid rains help support the growth of fish populations.

IV. *Extend the following statements, use the text for your reference.*

1. The relationship between man and nature has become one of the most vital problems today.
2. Nuclear energy as an alternative is opposed by many people.

3. Nowadays the problem of air and water pollution is changing from a national to an international one.
4. It is known that many cities throughout the world suffer from air pollution.
5. The greenhouse effect has lead to global warming.
6. Rainforests absorb CO2 and help control global warming.

V. *Read these quotations and say how you understand them. Use speech patterns given in brackets (well, I must say, from my point of view, as far as I know, in my opinion; if I may say so).*
1. " The Nation that destroys its soil destroys itself". (Franklin D. Roosevelt)
2. " One touch of nature makes the whole world kin" (William Shakespeare)
3. " In nature there are neither rewards nor punishment there are consequences."
    (Robert G. Ingersoll)
      " Nature never did betray the heart that loved her" (William Wordsworth**).**

PART II.   Text 2: Environment Protection Must Be Global

That the problem of pollution and ecology has become the most important one for mankind is evident to all. Civilization is being poisoned by its own waste products.

However, our scientific knowledge and technological advancement make it possible to eliminate this problem, if people use good will and make considerable investments for that purpose. Large-scale experimental work in this area is successfully being carried out.

 At present scientists in industrially developed countries are looking for different ways of supplying energy. Solar power is a way of using the sun's energy as heat or to make electricity. We can also use wind-power by building modern windmills that spin in the wind. There are several types of water power, river water in mountainous areas can be used to generate hydroelectric power, and we can also create electricity from sea water flowing in and out with the tides.

The essential feature in the environment protection is that many problems can be solved only on the level of world community. It is necessary to develop an international program to study data on land, forest, atmospheric and oceanic resources, both renewable and non-renewable. Recycling, the processing of used objects and materials so that they can be used again, saves energy and raw materials, and also reduces damage to the countryside. About 60% of rubbish from homes and factories contain materials that could be recycled. A lot of paper bags, writing paper and greeting cards are now produced using recycled paper.

A desire for environmental change led to the creation of various political parties around the world whose emphasis was largely on environmental protection. The first of these organizations, collectively known as green parties, was the Values Party in New Zealand, created in 1972. By far the most successful has been the green party of West Germany, Die Gruenen, which in 1983 won nearly 6 percent of the seats in the West German Parliament. Green parties have developed in almost all countries that have open elections, but they have had the largest impact in those nations where proportional representation within a parliamentary system occurs. Thus, the green parties have not played a significant role in American politics. In 1993, 23 green parties from eastern and western Europe came together to form the European Federation of Green Parties, with the hope that together they would have the leverage necessary to demand that environmental issues such as pollution control, population growth and sustainable development be more fully addressed by various national governments and international bodies.

Everything around us is tied together in a system of mutual interdependence. The plants help renew our air, the air helps purify our water, the water irrigates the plants. Man,

as, a part of nature, cannot master it, he must learn to work with it – and with his fellows everywhere – to ensure that we do not alter the environment so drastically that we disappear before we can adjust to it. Now is the time for all good men to come to the aid of their planet. We have all technical skills and resources. We have a common cause worth fighting for: a new kind of war to make the world safe for humanity against its own worst instincts. Perhaps this mighty global struggle to restore the quality of our human environment may provide an effective substitute for national conflict and bloodshed. Perhaps only a planetary view of man can guarantee our survival.

A. Active Vocabulary

Nouns and noun phrases
advancement – продвижение, распространение, успех, прогресс
impact – влияние, воздействие
recycling - переработка
rubbush – мусор, хлам
solar power – солнечная энергия
tide – морской прилив и отлив

Verbs and verbal phrases
adjust - приспосабливать
alter – изменять(ся), менять(ся)
eliminate - устранять
irrigate - орошать

B. Passive Vocabulary

election - выборы
emphasis - акцент
goodwill – добрая воля, рвение, готовность сделать что-либо
leverage – способ, средство для достижения цели
spin – крутиться, вертеться
windmill – ветряная мельница

Class Exercises in Active Vocabulary

I.   Repeat and translate into Russian the following sentences.
1.   A desire for environmental change led to the creation of various political parties around the world whose emphasis was largely on environmental protection.
2.   At present scientists in industrially developed countries are looking for different ways of supplying energy.
3.   Civilization is being poisoned by its own waste products.
4.   About 60% of rubbish from homes and factories contain materials that could be recycled.
5.   Everything around us is tied together in a system of mutual interdependence.
6.   Only a planetary view of man can guarantee our survival.

II.   Arrange the words of the two groups in pairs with similar meaning:
   a) advancement, standpoint, spin, essential, damage, rubbish, emphasis, impact, leverage, irrigate, alter
   b) garbage, influence, twirl, point of view, stress, harm, change, success, water, means, significant

III.   Make up your own sentences using the following words and word combinations
eliminate, different ways of supplying energy, recycling, green parties,
a common cause worth fighting for

Special Difficulties

I.   Paraphrase the following sentences so as to use "it enables smb. to do smth."
<u>Model</u>:   Our knowledge made it possible that we could
achieve great results in our work.
Our knowledge enabled us to achieve great
results in our work

1. The developments in nuclear physics have made it possible that we all can either live or die together. 2. Our technical skills and resources make it possible that we can use them to improve the quality of life. 3. His trips abroad made it possible that he could adjust to different people and different ways of life.   4. The study of ecology makes it possible that the population can avoid the further pollution of environment. 5. The dramatic changes in nature make it possible that the people understand the danger of global urbanization.

II.   Respond to the following questions using "to be worth doing smth." Use the prompts given.
<u>Model</u>:   What do you think of this book (to read).
Oh, it's worth reading.

1. What is the air in this part of the city (to purify)?   2. What is the water in the canal like (to cleanse)? 3. What do you think of that old irrigation system (to alter)? 4. How do you like the trade relations with your partners (to maintain)? 5. What is this new engineer like (to get rid of)?   6. How do you find our new substitute teacher (to employ)?

Home Vocabulary Exercises

I.   Fill in the blanks with the words given below
1.   We can use wind-power by building modern … that … in the wind. 2. …, the processing of used objects and materials so that they can be used again. 3. Green parties have had the largest … in those nations were proportional representation within a parliamentary system … 4. Everything around us is … in a system of … interdependence. 5. Civilization is being poisoned by its own … products. 6. Now is the time for all good men to come to the … of their planet.

waste, impact, spin, tied, mutual, windmills, aid, recycling, occurs

II.   Fill in the blanks with the prepositions given: on, from, out, to, in, for, of
1. We have a common cause worth fighting … 2. A desire … environmental change led … the creation … various political parties around the world whose emphasis was largely ... environmental protection. 3. The development of natural resources ... a global scale is already possible … a scientific and technical standpoint.
4. Nowadays scientists in industrially developed countries are looking … different ways of supplying energy. 5. Large-scale experimental work … this area is successfully being carried … .

III. Translate into English

1. В отличие от Западной Германии, в Америке партия «зеленых» так и не сыграла значительную роль в политике.
2. Очевидно, что проблема загрязнения окружающей среды остается для человечества наиважнейшей.
3. Солнечная энергия может быть использована для электричества.
4. Необходимо разработать международную программу по изучению данных, касающихся земельных, лесных, атмосферных и океанских ресурсов.

Text Comprehension Exercises

I. Listen to the text 'Environment Protection Must be Global' and answer the following questions

1. What is the essential feature in the environment protection?
2. What can guarantee our survival?
3. Where have the green parties not played a significant role?

II. Listen to the text again and say which of the following replies is correct

1. a) Scientists in industrially developed countries are looking for different ways of supplying solar energy. b) Scientists in industrially developed countries are looking for different ways of supplying energy. c) Scientists in industrially developed countries are looking for modern windmills.
2. a) Now is the time for all good men to join the green parties. b) Now is the time for all good men to make the world safe for humanity against its own basic instincts. c) Now is the time for all good men to come to the aid of their planet
3. a) Civilization is being poisoned by its own wastes. b) Civilization is being poisoned by its own products. c) Civilization is being poisoned by its own waste products.
4. a) A lot of paper bags, writing paper and greeting cards are now produced using recycled paper. b) A lot of bags, writing paper and greeting cards are now produced using recycled paper. c) A lot of paper bags, written paper and greeting cards are now produced using recycled paper.

Text Exercises

I. Read the text and find in it English equivalents of the following words and combinations
Огромное влияние, система взаимозависимости, очевидно всем, кровопролитие, средство для достижения цели, прийти на помощь, восстановить качество окружающей среды, сохранять энергию и сырье, развитие природных ресурсов, делать значительные инвестиции.

II. Read the text and answer the following questions
1. What led to the creation of green parties? 2. Is it possible to develop natural resources? 3. What ways of supplying energy do you know? 4. Do land, air and water work as an ecosystem to maintain the "great chain of life"? 5. In what other way can we create electricity? 6. Can the ecological problems be solved on a local scale? 7. What's the use of recycling? 8. Where have the green parties developed? 9. Why was the European Federation of Green Parties formed? 10. Can nature protection be an effective substitute for national conflicts?

III. *Agree or disagree, in your answers use the following expressions of agreement or disagreement*
I'm afraid it is not quite right, I wouldn't say that, I can't agree, the things are a little bit different, it is not the case, I completely agree with the statement, what I mean is, to begin with, the problem is, it's also important to stress that, I'd like to finish with the point that, I'd like to sum up by saying that …

1. The problem of pollution and ecology is the least important one for mankind.
2. Nowadays the scientists are looking for different ways of supplying energy.
3. A desire for environmental change led to the creation of various political parties collectively known as Friends of the Earth.
4. About 16% of rubbish from homes and factories contain materials that could be recycled.
5. Now is the time for all good men to come to the aid of their planet.

IV. *Extend the following statements, use the text for your reference*
1. Civilization is being poisoned by its own waste products.
2. Many ecological problems can be solved only on the level of world community.
3. A desire for environmental change led to the creation of green parties.
4. Everything around us is tied together.
5. We have a common cause worth fighting for.

V. *Dwell on some practical steps you can take in order to make the environment clean, tidy and pleasant.*

PART III. Conversation: A Few Facts about the Chernobyl Accident

Standard Phrases

It's sad to admit that the newspaper doesn't lie here	Печально признавать, но газета не лжет
What makes the situation even worse is that …	Но что еще больше усугубляет ситуацию, то это …
It means that …, doesn't it?	Это означает (значит) …, не так ли?
Is it true that … ?	Это правда, что …?
sporadically	нерегулярно
to declare	объявлять
actually	на самом деле, действительно
Nobody denies this fact nowadays	В настоящее время никто не отрицает этот факт
You cannot help doing	Нельзя не делать

I. *Complete the following conversations with the above listed phrases*
1. – The reporter says that 1/5 of the Belarusian territory has been dramatically contaminated as a result of the Chernobyl accident.
   - …

2. – Do they often publish articles on the situation in Chernobyl contaminated areas of Belarus?

- …

3. – The genetic base of Belarus is endangered. The infant mortality is high.
   - …

4. – The disintegration period of some radio nuclides is about 1000 years or even longer
   - …

II.   Translate the following sentences into English
1. Многие семьи по-прежнему живут в загрязненных районах. Но что еще больше усугубляет ситуацию, то это тот факт, что они вынуждены употреблять в пищу продукты, выращенные на этой земле и пить загрязненное молоко.
2. Здоровье населения Беларуси в опасности. Уровень смертности очень высокий. В настоящее время никто не отрицает этот факт, Беларусь и Украина объявили аварию в Чернобыле национальной катастрофой.
3. «Белорусская вода, воздух и земля опасны для наших детей», - говорят многие матери. Нельзя не плакать, когда слышишь эти слова.

III.   Tell us about:
a)   what the Chernobyl disaster has changed
b)   the radioactive fallout on the territory of Belarus
c)   how the radioactive fallout effects the population's health

IV.   Listen to the conversation "A Few Facts about the Chernobyl Accident" and answer the following questions
1. What has George Tate read in the newspaper? 2. Why does the tragic history of the Belarusian people repeat itself? 3. What is the emotional side of the Chernobyl tragedy? 4. How do scientists explain the deterioration of people's health?

V.   Read the conversation "A Few Facts about the Chernobyl Accident"
George Tate: Look here, Alex, you are from Belarus, aren't you?
Alex Dashuk: That's right. But why do you ask me?
George Tate: Well, yesterday I read an article in the newspaper about the Chernobyl nuclear power plant accident in 1986 and its consequences. Is it true that almost 70% of all radioactive fallout fell on the Belarusian land?
Alex Dashuk: It's sad to admit but the newspaper doesn't lie here. A fifth of all farmland of Belarus is extremely dangerous to human life But what makes the situation even worse is that the disintegration period of some of radio nuclides is about 1000 years or longer.
George Tate: It means that your children and your great-great grandchildren are destinied to live on the contaminated land, to eat contaminated food and to breathe contaminated air, doesn't it?
Alex Dashuk: You are right, again. But the question is whether there will be great-great grandchildren in our Belarusian families at all. In fact, the genetic base of Belarus is on the edge of extinction. The death rate is higher than the birth rate. And we still don't know all the truth about the accident, though sporadically the newspapers publish information about the increase of eye problems among the population, blood and liver diseases, cancer and collapse of the immune system. In the Mogilev

region, for example, the number of babies born with deformities has risen from 5 in 1985 to 50 in only three first months of 1995.

George Tate: Actually, in the above-mentioned article a representative of the Belarusian Parliamentary Commission dealing with the consequences of the Chernobyl accident stated: "Fate has caused the tragic history of the Belarusian people to repeat itself. In World War II we lost one inhabitant in four, in the Chernobyl accident we are losing one in four again."

Alex Dashuk: Yes, nobody denies this fact nowadays. A year ago I was asked to accompany a group of American scientists and doctors to contaminated areas of the Mogilev and Gomel regions. I shall never forget the cry of a young woman in a hospital, "I want to live, I'm still young!" And the cry which pierces your heart, "Our children are dying! Help us!" You cannot help crying when you hear such words, because the sword of Chernobyl Damocles is hanging over everyone in Belarus. Our land, our waters, our forests are contaminated, and radiation is spreading like an octopus. We cannot feel it or taste it or smell it. People are forced to give their children locally produced contaminated milk, meat and vegetables. Scientists claim that constant low doses of inner irradiation through the food chain as well as stress, pesticides, nitrates, vitamins deficiency, bad hygiene account for the deterioration of people's health. As far as I know, both Belarus and the Ukraine have declared the Chernobyl explosion a national catastrophe.

Notes:

to be destinied (разг.) -	иметь предназначение (судьбу)
to be on the edge of extinction -	быть на грани исчезновения
babies born with deformities -	дети с врожденными дефектами
the sword of Chernobyl Damocles -	Дамоклов меч Чернобыля
to claim -	заявлять
hygiene -	гигиена

VI. Memorize and play out the conversation *"A Few Facts about the Chernobyl Accident"*

VII. Role play the following situations.
1. Imagine that you are an English reporter interested in the life of Belarusian people in the afflicted areas. Interview them on this issue.
2. It's a well-known fact that when suggested to move from their hazardous native places a lot of people especially the old ones refused to do it. Ask what made them stay.
3. As the Head Physician of the Republic you were invited to the press conference devoted to the aftereffects of the Chernobyl disaster. You are worried about what is happening to the nation's health.

PART IV.. SUPPLEMENTARY READING

I. *Read the text "**Fresh Air Will Kill You"** and say how the author felt when he happened to lecture*

Smog, which was once a big attraction of Los Angeles, can now be found all over the country from Butte, Montana, to New York, and people are getting so used to polluted air that it's very difficult for them to breathe anything else.

I was lecturing recently, and one of my stops was Flagstaff, Arizona, which is about 7,000 feet above the sea level. As soon as I got of the plane, I smelled something peculiar.

"What's that smell?" I asked the man who met me at the plane.

"I don't smell anything," he replied.

"There is a definite odour[1] that I'm not familiar with, " I said.

"Oh, you must be talking about the fresh air. A lot of people come out here who have never smelled fresh air before. It's supposed to be good for your lungs."

"I've heard that story before," I said. "How come if it's air, my eyes aren't watering?"

"Your eyes don't water with fresh air. That's the advantage of it."

I looked around and everything appeared crystal clear. It was a strange sensation and made me feel very uncomfortable.

My host, sensing this, tried to be reassuring[2].

"Please don't worry about it. Tests have that you can breathe fresh air day and night without its doing any harm the body."

"You're just saying that because you don't want me to leave," I said. "Nobody who has lived in a big city can stand fresh air for a very long time. He has no tolerance for it."

"Well, if the fresh air bothers you, why don't you put a handkerchief over your nose and breathe through your mouth?"

"Okay, I'll try it. If I'd known I was coming to a place that had nothing but fresh air, I would have brought a surgical[3] mask."

We drove in silence. About fifteen minutes later he asked, "How do you feel now?"

"Okay, I guess, but I sure miss sneezing[4]."

"We don't sneeze too much here," the man admitted. "Do they sneeze a lot where you come from? "

"All the time. There are some days when that's all you do."

"Do you enjoy it?"

"Not necessarily, but if you don't sneeze, you'll die. Let ask you something. How come there's no air pollution around here?

"Flagstaff can't seem to attract industry. I guess were really behind the times. The only smoke we get is when the Indians start signaling each other. But the wind seems to blow it away."

The fresh air was making me feel dizzy. "Isn't there a diesel bus around here that I could breathe into a couple of hours?"

"Not at this time of day. I might be able to find a truck for you."

We found a truck driver, and slipped him a five-dollar bill, and he let me put my head near his exhaust pipe for half an hour. I was immediately revived and able to give my speech.

Nobody was as happy to leave Flagstaff as I was. My next stop was Los Angeles, and when I got off the plane, I took one deep breath of the smog-filled air, my eyes started to water, I began to sneeze, and I felt like a new man again.

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Notes

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1. odour – запах, аромат, благоухание
2. to reassure - убеждать
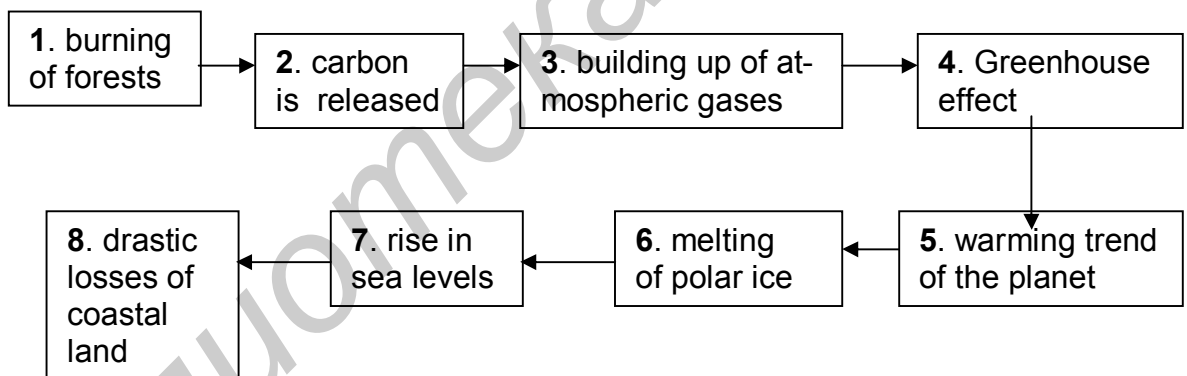3. surgical - хирургический
4. to sneeze - чихать

II. *Answer the following questions:*
1. How did the author react when he felt fresh air? What made him feel worried?
2. Do you think that the man who met the author at the airport understood what was happening to him? How did he try to cheer the author up?
3. What did the author find out about the surroundings from the talk with his host?
4. What was the author's only desire?
5. How did the author's mood change when he got a chance to breathe polluted air again?
6. Describe the place where the author of the story had to stay when lecturing.
7. Describe the emotions the author experienced from the moment when he got out off the plane till the moment when he left Flagstaff.

III. *Tell us if you agree that such a situation may be absolutely true to life.*

PART V.   Speech Exercises

I.   Look at the diagram and comment on it:

1. burning of forests → **2**. carbon is released → **3**. building up of atmospheric gases → **4**. Greenhouse effect

8. drastic losses of coastal land ← **7**. rise in sea levels ← **6**. melting of polar ice ← **5**. warming trend of the planet

Can you continue the chain?

II.   Imagine the world in twenty years' time. Make a list of important changes there will be in the way we live, work play, study, etc. Decide on the three most important changes.

III.   Discuss your ideas about how ecological education for people of different age groups can be organized. How can ecological education be organized at the University?

IV.   Devise a questionnaire to interview your University teachers (the members of the University administration, your group-mates) in order to find out their views on the importance of environmental protection.

V.   Discuss the suggestions made by the interviewees. Decide which of them can be effectively realized.

UNIT VI. **My Specialty**

A. Computer-Aided Design

PART I. Text I: The Faculty of Computer-Aided Design

At the Faculty of Computer-Aided Design students are trained in four specialties: design and development of electronic computing devices, design and manufacture of radio electronic devices, electronic-optical instrument-making, medical electronics, and six majors. The rapid development of computing devices, their penetration into various spheres of human activities, the growth of the society's needs in easy and accessible forms of information processing and storing necessitates training of specialists in design and development of electronic computing devices of all kinds. The development of integrated circuits has revolutionized the fields of communications, information processing, and computing. Integrated circuits reduce the size of devices and lower manufacturing and systems engineering costs, at the same time providing high speed and increased reliability. The computer electronics involves engineers in design and manufacture of memory systems, central processing units, and peripheral devices. One current trend in computer engineering is the microminiaturization. Another trend is the increase of the speed of computing through the use of parallel processors, superconductors, and the like.

Today's research to increase the speed and capacity of computers concentrates mainly on the improvement of integrated circuit technology and the development of even faster switching components. Very-large-scale integrated (VLSI) circuits that contain several hundred thousand components on a single chip have been developed.

The specialty "Design and Development of Electronic Computing Devices" has three majors:
1. Design of Problem-Oriented Electronic Computing Devices.
2. Information Technologies of Design and Manufacture of Electronic Computing Devices.
3. Design and Development of Personal Computers and Peripheral Devices.

We can't imagine the modern world without radio electronic devices. We can find them both at home and at work, in libraries and concert halls, in cars and trains. Watches and washing machines, audio and video devices, safety devices, radio-amateur testers, portable radio stations and long-haul systems are only a few examples of such facilities.

The specialty "Design and Manufacture of Radio Electronic Devices" embraces the design of radio electronic devices and control systems; computer-aided design of radio electronic devices; technology of microelectronic devices. Among the most important subjects in this field are integrated circuits, control systems, solid-state electronics, medical imaging systems, consumer electronics. The complex task of manufacturing silicon chips implies the most advanced technology, including computers, electron-beam lithography, micro manipulators, ion-beam implantation, and ultra clean environments. Much of the research in electronics is directed toward creating even smaller chips, faster switching components, and three-dimensional integrated circuits.

Control systems are used extensively in space, in aircraft and ships, in military fire-control systems, in power transmission and distribution, in automated manufacturing, and in robotics.

Digital watches, hand-held computers, and electronic games are systems based on microprocessors. Other developments include the digitalization of audio signals, where the frequency and amplitude of an audio signal are coded digitally. Digitally recorded music shows the fidelity that is not possible using direct-recording methods. Digital playback

devices of this nature have already entered the home market. Digital storage could also form the basis of home video systems and may significantly alter library storage systems, because much more information can be stored on a disk for replay on a television screen than any book can contain.

The specialty "Electronic-Optical Instrument-Making (Electronics Engineering)" is highly promising and prestigious. It is concerned with developing up-to-date electronic-optical devices and the equipment for their manufacture, high technologies and computer systems for design- and production automation, their economics and management.

Electronic-optical products such as optical fiber communication lines, vision systems, night vision devices, laser sight and pointers, tele- and video cameras, electronic and cash registers, television picture tubes, monitors for computers, and the like, are widely used in various spheres of activity.

The specialty "Medical Electronics" is very topical nowadays. Modern medicine is characterized by a wide application of achievements in electronics and microelectronics, personal computers and information technologies, expert systems for processing the biomedical information, automating and enhancing the reliability of diagnosis.

Medical electronics has progressed from computerized axial tomography, or the use of CAT or CT scanners, to systems that can discriminate more and more of the organs of the human body. Devices that can view blood vessels and the respiratory systems have been developed as well. Ultrahigh definition television also promises to substitute many photographic processes, because it eliminates the need for silver.

The students acquire a thorough knowledge of physics, physical-chemical foundations of microelectronics, radio-and computing equipment, computer-aided design. They also master programming languages such as Assembler, Pascal, C, Prolog and one or two foreign languages.

Training of the students in all major subjects is conducted with the help of computers.

Upon graduation from the University they can work at any radio electronic enterprise or do research.

A. Active Vocabulary
Nouns and Noun Phrases

advance – продвижение вперёд, успех, прогресс
application – применение, использование; прикладная задача
capacity – 1) ёмкость, 2) мощность
chip – 1) кристалл (ИС) 2) интегральная схема, ИС; микросхема
computer-aided design – автоматизированное проектирование
control – 1) управление, регулирование, 2) контроль
consumer electronics – бытовая электроника
design – 1) проектирование, конструирование, 2) проект, 3) конструкция
facility – устройство, средство, оборудование, аппаратура
foundation – основание; основа
high technology – новейшая технология
information processing – обработка информации
major - специализация
management – управление, организация
manufacture – производство, изготовление
playback – проигрывание, считывание
reliability – надёжность

Verbs and Verbal Phrases
alter – 1) изменять, 2) вносить изменения

concern – касаться, иметь отношение
deal (dealt, dealt) with – иметь дело (с кем-либо, чем-либо)
embrace - охватывать
imagine – воображать, представлять себе
imply - предполагать
reduce – уменьшать, сокращать

Adjectives

digital – цифровой
portable – портативный, переносной
rapid – быстрый
thorough –полный, совершенный, основательный
topical – актуальный, животрепещущий

B. Passive Vocabulary

blood vessel – кровеносный сосуд
cash register – кассовый аппарат
computerized axial tomography (CAT, CT) – аксиальная томография, управляемая ЭВМ
definition – 1) форматирование рисунка, 2) чёткость, резкость (изображения)
discriminate – отличать, различать
electron-beam lithography– электронно-лучевая литография
eliminate – устранять, исключать
enhance – увеличивать, повышать
extensive – обширный
fidelity – точность воспроизведения
imaging – формирование изображений
ion-beam implantation – ионная имплантация
long-haul system – система дальней связи
maintenance – техническое обслуживание и ремонт
necessitate – делать необходимым, требовать, неизбежно влечь за собой
night vision – ночное видение
penetration –проникновение
problem-oriented – проблемно-ориентированный
radio amateur – радиолюбитель
respiratory – респираторный, дыхательный
safety device – защитное устройство
sight – прицел, визир; зрение
switch – переключать, коммутировать
substitute – заменять, замещать
superconductor – сверхпроводник
three-dimensional integrated circuit – трёхмерная интегральная схема
vision – система технического зрения

Class Vocabulary Exercises

I.   *Repeat and translate into Russian:*
  a) *the following words with the stress on the first syllable*
     alter, digital, enterprise, foreign, management, playback, rapid, thorough, topical
  b) *the following words with the stress on the second syllable*
     advance, capacity, control, design, environment, facility, foundation, imagine, reduce, consumer, computer, technology

c) *the following words and word combinations with two or more stresses*
application, information, manufacture, reliability, computer-aided design, consumer electronics, hand-held computer, high technology, information processing

II. *Repeat and translate the following sentences.*
1. At the Faculty of Computer-Aided Design students are trained in four specialties.
2. The computer electronics involves engineers in design and manufacture of memory systems, central processing units, and peripheral devices.
3. One current trend in computer engineering is the microminiaturization.
4. We can't imagine the modern world without radio electronic devices.
5. Watches, audio-and video devices, portable radio stations are only a few examples of such facilities.
6. Among the most important subjects in this field are integrated circuits, control systems, computer design, consumer electronics.
7. Digital storage may alter library storage systems.
8. The specialty "Electronic-Optical Instrument-Making" is concerned with developing up-to-date electronic-optical devices.
9. To produce such equipment, high technologies and computer systems for design- and production automation are necessary.
10. The specialty "Medical Electronics" is very topical nowadays.

III. *Form and translate into Russian:*
a) *nouns of the following verbs using the suffixes –**ment, -er/ -or, -ion***
to develop, to improve, to equip, to manage, to compute, to point, to draft, to design, to process, to conduct, to manipulate, to manufacture, to record, to test; to distribute, to transmit, to produce, to communicate, to inform, to operate, to specialize
b) *verbs of the following nouns*
implantation, switching, storage, concentration, container, maintenance, application, definition, foundation, training, designer

IV. *Arrange the words of the two groups in pairs with similar meaning:*
a) up-to-date, rapid, to compute, current, to train, trend, speed, handling, to use, manufacture, and the like, research, mainly, extensively, to change, to replace, dimension, to switch on, to reduce, significant, in the field of, environment, complicated, advanced;
b) modern, quick, to calculate, fabrication, widely, to lower, velocity, processing, to apply, investigation, turn on, surround, complex, progressive, size, in the sphere of, to alter, to substitute, passing now, to teach, tendency, similar things, chiefly, important.

V. *Arrange the words of the two groups in pairs with contrary meaning*
a) increase, clean, to reduce, high, fast, to switch on, wide, direct, possible, solid, important, reliable, include, to leave;
b) to switch off, decrease, low, slow, narrow, dirty, to enhance, impossible, indirect, liquid, unimportant, unreliable, to exclude, to enter.

VI. *Make up your own sentences using the following words and word combinations*
1. Physics, acquire, of, knowledge, a, thorough, students.
2. They, master, languages, also, programming.

3. After, from, the University, graduating, students, any, enterprise, radio electronic, work, can, at.
4. These, can, systems, more and more, of, discriminate, organs, of the body, human, the.
5. Electronics, wide application, of, modern, advances in, is characterized, by, medicine, a.
6. Expert systems, for processing, biomedical, information, are used.
7. The specialty, is, highly, promising, electronic-optical, instrument-making.
8. Products, electronic-optical, are, used, in a wide range, applications, of.
9. This specialty, with developing, is concerned, electronic – optical, up-to-date, devices.
10. Digital watches, systems, based, are, hand-held, computers, and electronic, on microprocessors, game

Special Difficulties

I. *Translate the following word combinations into Russian*
Model: a) input device – входное устройство; устройство ввода
b) speech recognition equipment – устройство распознавания речи
c) optical fiber communication line – волоконно-оптическая линия связи

a) system cost, memory system, safety device, consumer electronics, silicon chip, control system, computer design, power transmission, power distribution, television screen, night vision, information technology;
b) library storage system, television picture tube, electron-beam lithography, ion-beam implantation, fire-control system, home video system, information-handling task;
c) ultrahigh definition television, long-haul system, central processing unit, integrated circuit technology, solid-state electronics, digital playback device, general-purpose computer, special-purpose computer, random-access memory.

II. *Form the degrees of comparison of the following adjectives according to the model*
Model: a) broad – broader – broadest
b) expensive – more expensive, most expensive

a) small, fast, wide, low, high, large, great, long, clean, light, tiny.
b) rapid, modern, important, possible, topical, prestigious, promising, special, flexible, common, advanced.

III. *Change the sentences according to the model and translate them into Russian*
Model: The transistor has now almost completely replaced the vacuum tube in most of its applications. The vacuum tube has been replaced by the transistor in most of its applications.

1. The development of integrated circuit has revolutionized the fields of communications, information handling, and computing.
2. Designers have developed very large scale integrated (VLSI) circuits.
3. Scientists have directed much of the research in electronics towards creating even smaller chips.
4. Specialists have used control systems for keeping spacecraft on course.
5. Engineers have concentrated research on the improvement of integrated circuit technology.

6. Computer designers have increased the speed of computer operations through the use of parallel processors, superconductors, and the like.
7. This storage system has stored much more information on a disk.
8. Ultrahigh definition television has replaced many photographic processes.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences*
1. Imagine, radio electronic, can't, we, devices, world, without, the.
2. Students, trained, are, four, in, specialties, faculty, design, computer- aided, at, the, of.
3. The, development, rapid, computers, of, penetration, their, spheres, various, into, human, of, activities, and, necessitate, specialists, training, in, technology, computing, of, devices, in the design, and.
4. Has, majors, three, the, specialty, development, design, of, devices, computing, electronic.
5. Design, manufacture, and, devices, of, radio electronic, specialty, the, design, of, deals, with, devices, radio electronic, and, control, systems.
6. The, electronic-optical, specialty, instrument-making, prestigious, and, promising, is, highly.
7. It, concerned, with, up-to-date, is, devices, electronic-optical, their, and, manufacture, the, for, equipment.
8. Topical, nowadays, very, is, electronics, medical, specialty, the.

II. *Fill in the blanks with the words given below*
1. The students acquire a thorough knowledge … .
2. They also master … .
3. Upon graduation from the University they can work … or do … .
4. Integrated circuits reduce … and lower … .
5. At the same time they provide high speed and increased … .
6. One current trend in computer engineering is … .
7. A few examples of radio electronic devices are … .
8. The complex task of manufacturing silicon chips uses most advanced … .
9. Control systems are used extensively in … .
10. Modern electronics is characterized by a wide application of … .

(personal computers, automated manufacturing, technology, portable radio stations, watches, microminiaturization, reliability, physical-chemical foundations of microelectronics, programming languages, the size of devices, manufacturing costs, any radio electronic enterprise, research)

III. *Fill in the blanks with the prepositions given:* towards, through, in, on, on, in, at, toward, on, in, for, on, without
1. Another trend is … increasing the speed of computer operations … use of parallel processors.
2. The computer electronics involves engineers … design and manufacture of peripheral devices.
3. Today's research concentrates mainly … the development of even faster switching components.
4. VLSI chips contain several hundred thousand components … a single chip.
5. We can find radio electronic devices both… home and … work.

6. Much of the research in electronics is directed … creating three-dimensional integrated circuits.
7. Digital watches, hand-held computers, and electronic games are systems based … microprocessors.
8. Control systems are used … robotics.
9. Control systems are used extensively … keeping spacecraft … course.
10. We can't imagine the modern world … electronics.

IV. *Translate into English*
1. Потребности общества в информации вызывают необходимость подготовки специалистов в проектировании и технологии электронных вычислительных устройств всех видов.
2. Развитие интегральных схем вызвало резкие изменения в области связи, обработки информации и вычисления.
3. Инженеры вовлечены в проектирование и производство систем памяти, центральных процессорных устройств.
4. Ещё одно направление – увеличить скорость машинных операций благодаря применению параллельных процессоров, сверхпроводящих материалов, и тому подобное.
5. Специальность «Проектирование и технология электронных вычислительных устройств» имеет три специализации.
6. Современная медицина характеризуется широким применением экспертных систем для обработки биомедицинской информации, автоматизации и увеличения надёжности диагноза.
7. Студенты овладевают языками программирования.
8. Подготовка студентов проводится с помощью компьютеров.

Text Comprehension Exercises

I. *Listen to the text "**The Faculty of Computer-Aided Design**" and answer the following questions*
1. How many specialties are the students at the Faculty of Computer-Aided Design trained in?
2. What are the specialties at the Faculty?
3. How many majors has the specialty "Design and Technology of Electronic Computing Devices"?
4. Knowledge of what subjects do the students acquire?
5. Where can graduates of the University work?

II. *Listen to the text again and say which of the following replies is correct:*
1. a) training specialists in design and development of electronic computing devices is necessary due to the growth of the society's needs in information. b) the growth of the society's needs in information processing and storing doesn't require the use of computers. c) the rapid development of computers was due to their use in industry.
2. a) the specialty "Design and Development of Electronic Computing Devices" has no majors. b) the specialty "Design and Development of Electronic Computing Devices" has two majors. c) "Design and Development of Personal Computers and Peripheral Devices" is one of the three majors of the specialty "Design and Development of Electronic Computing Devices"
3. a) the specialty "Design and Manufacture of Radio Electronic Devices" deals with mainframes. b) watches and washing machines, audio-and video devices are only a few examples of radio electronic facilities. c) the specialty "Design and

Manufacture of Radio Electronic Devices" does not deal with computer-aided design of these devices.

4. a) the specialty "Electronic-Optical Instrument-Making" is concerned with high technologies and computer systems for production automation. b) high technologies are not necessary for designing electronic optical devices. c) economics and management of manufacturing electronic-optical devices are not studied by the students.

5. a) the specialty "Medical Electronics" does not deal with expert systems. b) the specialty "Medical Electronics" does not deal with personal computers and information technologies. c) modern medicine is characterized by a wide application of advances in electronics and microelectronics.

Text Exercises

I. *Read the text "**The Faculty of Computer-Aided Design**" and find in it English equivalents of the following words and word combinations*

обучать, готовить изменять	устранять, исключать
запоминать, хранить	интегральная схема
запоминающее устройство	обработка информации
экран	изготовление
применение	надежность
актуальный	снижать, уменьшать
перспективный	снабжать, обеспечивать
современный	центральное процессорное устройство
волоконно-оптическая линия связи	периферийное устройство
система технического зрения	увеличивать(ся)
кинескоп для телевизоров	переключающий элемент
кассовый аппарат	создавать
прогресс, успех, продвижение	записывать, регистрировать
отличать, различать	микрокалькулятор
заменять	

II. *Read the text and answer the following questions*
1. What necessitates training specialists in design and development of electronic computing devices of all kinds? 2. What has the development of integrated circuits revolutionized? 3. What are current trends in computer engineering? 4. What does today's research concentrate on? 5. What are majors of the specialty "Design and Development of Electronic Computing Devices"? 6. Where can radio electronic devices be found? 7. What are examples of radio electronic facilities? 8. What does the specialty "Design and Manufacture of Radio Electronic Devices" deal with? 9. What are the most important subjects in radio electronics? 10. What does the complex task of manufacturing silicon chips imply? 11. What is research in electronics directed to? 12. Where are control systems used? 13. What are properties of digitized devices? 14. What is the specialty "Electronic-Optical Instrument-Making" concerned with? 15. What is modern medicine characterized by? 16. What subjects do the students study? 17. What can our University graduates do?

III. *Agree or disagree with the following statements, in your answers use the expressions of agreement or disagreement given below*
1. Asking if someone agrees

Informal	Don't you agree? Don't you think so?

Don't you feel/think …?
Is it right?

2. Agreeing

Standard	That's quite right.
	That's true.
	Yes, I agree …
	I quite agree.
Informal	Well, that's the thing.
	You're so right!
	I'm with you there.
	Yes! Right!
	Dead right!
	Exactly.
More formal	I absolutely agree.
	I entirely agree.
	I completely agree with you.

3. Disagreeing

Standard	I don't agree.
	I disagree.
	Nothing of the kind/sort.
	You can't be serious!
	You must be joking!
Informal	Don't be silly!
	You're kidding!
	Rubbish! Nonsense!
	No way! You can't mean that!
	Never (very strong).
Formal	I'm afraid …
	I disagree with you on that point.
	I see things rather differently.
	That's not the way I see it.

4. Saying you are partly agreed

Standard	I partly agree (with you), but …
	Yes, I suppose so, but …
	Yes, but don't you think …?
	That's all very well, but …
	O.K. but …
Informal	Yes, perhaps, but …
	I see your point, but …
	I agree with you to a certain extent.
	That's true to a certain extent/up to a point.
More formal	I wouldn't deny that, but …

1. Medical electronics has greatly progressed.
2. It is not necessary to train specialists in designing and manufacturing electronic computing devices.
3. The computer electronics involves engineers in design and manufacture of memory systems, of central processing units, and of peripheral devices.
4. The major "Information Technologies of Design and Manufacture of Electronic Computing Devices" refers to the specialty "Design and Manufacture of Radio Electronic Devices".

5. We can imagine our world without radio electronic devices.
6. We can find radio electronic devices only in laboratories.
7. Safety devices are the only example of radio electronic facilities.
8. In manufacturing silicon chips advanced technologies are not used.
9. Digital devices have no advantages.
10. Electronic-optical products are used in a wide range of applications.

IV. *Develop the following ideas, use the words and word combinations, provided in brackets*
1. At the Faculty of Computer-Aided Design students are trained in four specialties and six majors (the rapid development of computers, their penetration into various spheres of human activities, growth of the society's needs in, information processing and storing, easy and accessible ways of, to necessitate).
2. The development of integrated circuits has revolutionized the fields of communications, information processing and computing (to reduce the size of devices, lower manufacturing and systems costs, to provide, high speed and increased reliability).
3. The computer electronics involves engineers in design and manufacture of memory systems, of central processing units, and of peripheral devices (trend, microminiaturization, to increase the speed of computer operations, the capacity of computers, today's research, improvement of integrated circuit technology, very-large-scale integrated (VLSI) circuits, components, chips, to contain).
4. The specialty "Design and Development of Electronic Computing Devices" has three majors (design and development of personal computers and peripheral devices, design of problem-oriented electronic computing devices, information technologies of design and manufacture of electronic computing devices; the basic job of computers is the processing of information).
5. We can find radio electronic devices everywhere (at home, both, at work, watches, washing machines, audio-and video devices, safety devices, radio-amateur testers, portable radio stations, long-haul systems).
6. Manufacturing silicon chips uses the most advanced technology (computers, electron-beam lithography, micro manipulators, ion-beam implantation, ultra clean environment).

V. *Extend the following statements, use the text for your reference.*
1. The specialty "Electronic-Optical Instrument-Making" is highly promising.
2. Electronic-optical products are widely used in various spheres of activity.
3. The specialty "Medical Electronics" is very topical.
4. Medical electronics has progressed a lot.

VII. *Speak on*
1) the specialties at the Faculty,
2) the majors the Faculty offers,
3) the subjects the students study,
4) their future work.

Text II: Computer-Integrated Manufacturing (CIM)

Since about 1970 there has been a growing trend toward the use of computers to perform many of the functions related to design and production. The technology associated with this trend is called CAD/CAM, for computer-aided design and computer-aided manufacturing.

CAD/CAM is based on the capability of a computer system to process, store, and display large amounts of data representing part and product specifications. For mechanical products, the data represent graphic models of the components; for electrical products, they represent circuit information; and so forth. CAD/CAM technology has been applied in many industries, including machined components, electronics products, and equipment design and fabrication for chemical processing. CAD/CAM assists not only in the automation of the manufacturing operations but also in the automation of elements in the entire design-and-manufacturing procedure.

Computer-aided design (CAD) makes use of computer systems to assist in the creation, modification, analysis, and optimization of a design. The designer, working with the CAD system rather than the traditional drafting board, creates the lines and surfaces that form the object (product, part, structure, etc.) and stores this model in the computer database. By choosing the appropriate CAD software, the designer can perform various analyses on the object, such as heat transfer calculations. The final object design is developed once adjustments are made on the basis of these analyses. Once the design procedure has been completed, the computer-aided design system can generate the detailed drawings required to make the object.

Computer-aided design (CAD) systems were first applied in the electronics industry. Today they feature three-dimensional modeling techniques for drafting and manipulating solid objects on the screen and for deriving specifications for programs to drive numerical-control machines. Once a product is designed, its production process can be outlined using computer-aided process planning (CAPP) systems that help to select sequences of operations and machining conditions. Models of the manufacturing system can be simulated by computers before they are built.

The basic manufacturing functions--machining, forming, joining, assembly, and inspection--are supported by computer-aided manufacturing (CAM) systems and automated materials-handling systems. Computer-aided manufacturing (CAM) means the use of computer systems to assist in the planning, control, and management of production operations. This is accomplished by either direct or indirect connections between the computer and production operations. In the case of the direct connection, the computer is used to monitor or control the processes in the factory. Computer process monitoring involves the collection of data from the factory, the analysis of the data, and the communication of process-performance results to plant management. These measures increase the efficiency of plant operations. Computer system executes control actions to operate the plant automatically, as described above. Indirect connections between the computer system and the process involve applications in which the computer supports the production operations without actually monitoring or controlling them. These applications include planning and management functions that can be performed by the computer (or by humans working with the computer) more efficiently than by humans alone.

Computer-integrated manufacturing (CIM) includes all the engineering functions of CAD/CAM and the business functions of the firm as well. In an ideal CIM system, computer technology is applied to all the operational and information-processing functions of the company, from customer orders through design and production (CAD/CAM) to product shipment and customer service. In short, CIM represents the highest level of automation in manufacturing.

A. Active Vocabulary
Nouns and Noun Phrases

adjustment – регулирование, корректировка, пригонка
application – применение
CAD/CAM – автоматизированное проектирование/автоматизированное производство
customer – клиент, заказчик

drafting board – чертежная доска
part – деталь
performance - производительность
product - изделие
sequence of operations – последовательность операций
shipment – поставка, перевозка товаров
structure – объект, конструкция, структура
surface - поверхность
trend - направление

Adjectives

appropriate -соответствующий
entire – полный, весь
solid – твердый, сплошной, непрерывный, прочный
three-dimensional – 3- мерный

Verbs and Verbal Phrases

accomplish – завершать, выполнять
assemble - собирать
be related to- быть связанным с, иметь отношение к
derive from – происходить, получать, извлекать
execute control over – осуществлять контроль за
feature - изображать, показывать на экране, быть характерной чертой
involve (in) – вовлекать, предполагать
join - присоединять
machine –обрабатывать на станке
outline – наметить в общих чертах, сделать набросок
perform – выполнять
simulate - моделировать

Class Vocabulary Exercises

I.   *Repeat and translate into Russian*
     a) the following words with the stress on the first syllable:
        drafting, surface, product, sequence, customer, shipment, solid, feature, outline, simulate, store
     b) the following words with the stress on the second syllable:
        adjustment, operation, perform, performance, associate, apply, involve, derive, machine, assembly, inspect, accomplish, control, appropriate, entire, related, process, display
     c) the following words with two or more stresses:
        drafting board, sequence of operation, product shipment, machined products, be associated with, be related to, execute control, three-dimensional, simulation, represent

II. *Repeat and translate into Russian the following sentences*
     1. There's a growing trend toward the use of computers everywhere. 2. Computer-aided design assists in the creation, modification, analysis and optimization of a design. 3. The designer chooses the CAD software and works on his design project. 4. Adjustments are usually performed before the project is completed. 5. The CAD systems were first applied in electronics. 6. The CAD systems feature three-dimensional techniques. 7. Finally, the production process was outlined. 8. The

basic manufacturing functions are machining, forming, joining, assembly and inspection. 9. Computer systems assist in planning, executing control actions and management of production operations.

III. *Form and translate into Russian*
a) *nouns of the following verbs using suffixes:* **-ance, -ation, -ive, -er, -ment**
perform, relate, represent, associate, apply, involve, use, derive, inspect, accomplish, execute, adjust, ship
b) *verbs of the following nouns*
drafting, shipment, user, service, machine, performance, relative, representative, applicant, assistant, feature, outline, form, join, assembly, inspector, execution, accomplishment, simulate

!V. *Arrange the words of the two groups in pairs with similar meaning*
a) trend, perform, be related to, machine, inspect, accomplish, simulate, control, entire, appropriate, display
b) be associated with, direction, show on the screen, corresponding, whole, exercise control, model, finish, check, process mechanically, make

V. . *Arrange the words of the two groups in pairs with contrary meaning*
a) accomplish, entire, solid*,* three-dimensional, assemble, surface
b) single, disassemble, bottom, liquid, initiate, two-dimensional

VI. *Make up your own sentences using the following words and word combinations*
execute control actions, sequence of operations, be related to, entire design process, three-dimensional object, product shipment, to render customer service, appropriate software, to use a drafting board

Special Difficulties

I. *Read and translate the following word combinations into Russian*
Computer-integrated manufacturing*,*design and production, CAD/CAM or computer-aided design and computer-aided manufacturing, part and product specifications, graphic models of the components, circuit information; machined components, electronics products, equipment design and fabrication for chemical processing, the entire design-and-manufacturing procedure, computer database, heat transfer calculations, final object design, design procedure,computer-aided design system, electronics industry, three-dimensional modeling techniques,numerical-control machines, production process,computer-aided process planning (CAPP) systems, machining conditions, manufacturing functions, automated materials-handling systems, computer process monitoring, process-performance results, plant management, computer process control, production operations, computer technology, operational and information-processing functions, customer orders, product shipment, customer service

II. *Make the following sentences Passive*
1. Computers perform many functions related to design and production. 2. We call such technology CAD/CAM. 3. Computer systems process, store, and display large amounts of information. 4. They have already applied CAD/CAM technology in many industries. 5. Last year they used CAD in the creation, modification, analysis and optimization of many design projects. 6. Nowadays designers seldom use drafting boards. 7. They first applied CAD systems in the electronics industry.

III. *Read and translate the following sentences into Russian*
1. The final object design is developed once adjustments are made. 2. Once the design procedure has been completed, the computer-aided design system can generate the detailed drawings required to make the object. 3. Once a product is designed, its production process can be outlined using computer-aided process planning (CAPP) systems that help to select sequences of operations and machining conditions. 4. Models of the manufacturing system can be simulated by computers once they are outlined. 5. Once computer-aided manufacturing (CAM) system is used in the planning, control, and management of production operations, we know the production process will be successfully accomplished. 6. Once an ideal CIM system is used, computer technology is applied to all the operational and information-processing functions of the company, from customer orders through design and production (CAD/CAM) to product shipment and customer service.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences*
1. Perform, many, computers, to, related, functions, and, production, design.
2. Amounts, computer, any, of, can, information, store, and, process, display, large.
3. Is, in, applied, CAD/CAM, many, technology, industries.
4. Automation, CAD/CAM, the, assists, and, design, of, procedures, manufacturing, in.
5. Are, systems, three-dimensional, CAD, techniques, modeling, computer-based.
6. By, system, models, of, are, simulated, the, computers, manufacturing.

II. *Fill in the blanks with the words given below. Use the text for reference*
1. Computer-aided process planning systems help to select …and machining conditions.
2. CAM systems support basic … functions.
3. Computer system …actions to operate the plant automatically.
4. Automation increases the …of plant operations.
5. Computer-integrated manufacturing (CIM) …the highest level of automation in manufacturing.
6. With the help of the CAD system any designer can draft and manipulate … objects on the computer …
     (three-dimensional, represents, screen, sequence of operations, execute control, manufacturing, efficiency)

III. *Translate into English.*
1. В настоящее время компьютеры выполняют много функций, связанных с конструированием и производством.
2. Технология САПР основана на возможности ЭВМ обрабатывать, хранить и отображать большие объемы данных.
3. Технология САПР помогает создавать, изменять, анализировать и оптимизировать конструкторские проекты и,наконец, получать детальные чертежи и спецификации каждой детали и производственного процесса.
4. Процесс конструирования завершен после внесения всех корректировок.
5. ЭВМ может использоваться для мониторинга и контроля за всем производственным процессом.
6. Компьютерный мониторинг предусматривает сбор заводских данных, их анализ и уведомление руководства предприятия о результатах производственного процесса и его эффективности.

Text Exercises

I. Read the text "Computer-Integrated Manufacturing" and say which of the following replies is correct.

1. a) Since 1970 there has been a growing trend toward the use of computers in fashion design. b) Since 1970 there has been a growing trend toward the use of computers in manufacturing processes. c) Since 1970 there has been a growing trend toward the use of computers in design and manufacturing processes.
2. a) CAD/CAM is based on the capability of a computer system to store information. b) CAD/CAM is based on the capability of a computer system to process, store and display large amounts of information. c) CAD/CAM is based on the capability of a computer system to quickly process information.
3. a) CAD/CAM assists in the automation of elements in the entire design-and-manufacturing operations. b) CAD/CAM assists in the automation of elementary manufacturing operations. c) CAD/CAM assists in the automation of design processes.
4. a) CAD involves the creation, modification, analysis and optimization of a design. b) CAD involves the modification of a design. c) CAD involves the analysis and revision of a design.
5. a) The CAD system can generate the detailed specifications required to accomplish a design. b) The CAD system can generate the detailed drawings required to make the object. c) The CAD system can generate some drawings of the object.
6. a) CAM systems support only machining functions. b) CAM systems only support inspection and controlling functions. c) CAM systems support machining, forming, assembly and inspection functions.

II. Read the text "Computer-Integrated Manufacturing" and answer the following questions.

1. Since when have computers been used in CAD/CAM technology?
2. What capability of computers is CAD/CAM based on?
3. What industry was the first to apply CAD?
4. What is CAD?
5. What basic manufacturing functions are supported by CAM systems?
6. What is CAM?
7. What does the computer do in the case of the direct connection with the production operation?
8. What applications do indirect connections between the computer system and the process involve?
9. What does computer-integrated manufacturing (CIM) include?
10. What is an ideal CIM system?

III. Get ready to speak on the following problems using the word combinations
1. *Since about 1970 there has been a new trend toward the use of computers* (to perform many of the functions, computers, can, design and production, be related to, the technology, this trend, be associated with, be called CAD/CAM, CAD/CAM technology, be based on the capability of a computer system, to process, store, and display large amounts of data, it, to be applied, in many industries, CAD/CAM, to assist in the automation of the manufacturing operations, and, in the automation of the design procedure).
2. *Computer-aided design (CAD) uses computer systems in the creation, modification, analysis, and optimization of a design* (the designer, to work with the CAD system ,

the traditional drafting board, rather than, he, to create, to store, the lines and surfaces that form the object, in the computer database, then, to be generated, the detailed drawings, CAD technology, to represent, three-dimensional modeling techniques, for drafting and manipulating solid objects on the screen).

3. *Computer-aided process planning (CAPP) systems select sequences of operations and machining conditions* (models of the manufacturing system, to be simulated, can, by computers, before, they, to be built)

4 Computer-aided manufacfacturing (CAM) uses computer systems to assist in the planning, control, and management of production operations (the basic manufacturing functions,machining, forming, joining, assembly, and inspection,to be supported, by CAM systems, tyere to be, either or, direct, indirect connections between the computer and production operations, dpending on, in the factory, whether, the computer, to be used, to monitor or control, the production processes).

5. *Computer-integrated manufacturing (CIM) includes all the engineering functions of CAD/CAM and also the business functions of the firm(* in an ideal CIM system, computer technology, to be applied to, all the operational and information-processing functions, of the company, from customer orders through design and production, to product shipment,customer service,and, CIM, to represent, the highest level, in, of, automation, manufacturing)

IV.   *Speak on:*
a) The role of computers in CAD/CAM technology,
b) CAD technology,
c) CAM technology,
d) CIM system.

PART II. Conversation: "Mike is Planning His Future Career"

Standard Phrases

How are you?	Как Вы поживаете?
I am fine.	Отлично, прекрасно.
See you soon!	До скорой встречи!
I'd like …	Мне хотелось бы …
Would you like …	Хотел бы ты …
I wish you success.	Желаю успеха!
Certainly.	Конечно.
I see	Ясно. Понятно
In my opinion.	По-моему.
To my mind.	
That's right!	Хорошо, правильно.

Exercises

I.   *Complete the missing phrases in the following short conversations.*
1.   – Listen, Helen. This is Sue Richardson, she is from the USA.
- …
- How do you do, Helen? Where are from?
- …
2.   – How are you doing, Peter? Fine, I hope?
- … Glad to see you
- Me, too. Where are you going?
- I'd 'like to have a look at some magazines at the library.

- Great. Have a nice day. See you.
- …

3. – Are you going to be an engineer?
- ...
- What made you choose this profession?
- … It's very important, you know, and besides, my father is an engineer, and I'd like to follow the family's tradition.
- …

4. – I'd like to work in one of the laboratories of our university. I think I ought to get more practical experience.
- …
- Yes, I certainly should. It's a field that interests me very much.

5. – I'm very much interested in computers.
- … They can do a lot.
- And you know I've come to realize that computers are the most suitable and reliable machines for making calculations.
- … They make partners in space, research, business, medicine.

II. *Translate the following short conversations into English using standard phrases*
1. - Послушай, Майк. Это Сью Робинсон. Она из Америки
- Здравствуйте. Рада познакомиться с Вами.
2. – Как ты поживаешь, Ник?
- Хорошо. Я надеюсь, ты тоже.
3. – Ты собираешься стать инженером?
- Да, мне хотелось бы.
4. – Что заставило тебя выбрать эту профессию?
- Я всегда интересовался радиотехникой.
5. – Мне хотелось бы поработать в одной из лабораторий нашего университета.
- Хотел бы ты работать в лаборатории электронных приборов?
- Да, конечно.
6. – Я очень интересуюсь компьютерами.
- И я тоже (So am I). По-моему, эти машины могут делать многое.

III. *Listen to the conversation "Mike is Planning His Future Career" and answer the following questions*
1. The action is taking place in the International Camp for Students, isn't it?
2. Are Carol and Mike speaking about the profession of an engineer?
3. Does Mike study at the Belarusian State University of Informatics and Radio Electronics?
4. What will Mike be dealing with?
5. Why did Mike choose the sphere of radio electronics?
6. Where did Mike study English?
7. Where can Mike work after graduating from the University?

IV. *Listen to the conversation "Mike is Planning His Future Career" and imitate the speaker's' pronunciation*

Mike is Planning His Future Career

David: How are you doing, Mike? Fine, I hope?
Mike: Hi, David! I'm very well, thanks. Glad to see you again in this International Camp.
David: Me, too. Listen, Mike. This is Carol Robinson. She is from Canada.

Mike: Hallo, Carol. How do you do?
Carol: How do you do, Mike. Where are you from?
Mike: I'm from Belarus, the republic of the Commonwealth of Independent States.
Carol: Oh, really? I have never met people from Belarus. Are you a student?
Mike: Yes, I study at the Belarusian State University of Informatics and Radioelectronics
Carol: And what is your future profession?
Mike: I'm going to be an engineer. I'll deal with the design of radio electronic devices.
Carol: Oh, how interesting! What made you choose exactly this sphere?
Mike: I have always been interested in radio electronics. I consider this branch to be the most promising. I know its contribution to the world's progress is very important.
Carol: I see. By the way, your English is good. Do you study it at the University.?
Mike: Yes. Four foreign languages are taught at the University. Every engineer is supposed to know at least one language to be able to read overseas publications in his or her major .
Carol: Yes, it's true. Where would you like to work after graduating?
Mike: It would be interesting for me to work somewhere in a design office.
Carol: I hope you will. Sorry, Mike, I must be off. It was nice meeting you. See you later.
Mike: See you later, Carol.

Notes
1.   How are you doing? = How are you?
2.   Listen, Mike. = Послушай, Майк
3   overseas publications – заграничные (зарубежные) публикации
4   It was nice meeting you – приятно было с Вами познакомиться (говорится в конце встречи, в отличие от фразы "It's nice to meet you", которая произносится всегда в начале разговора).
5   I must be off. – Я должен идти.

V. *Memorize and play out the conversation "**Mike is Planning His Future Career**"*

VI. *Role-play the following situations*
     You've got acquainted with some overseas students:
     a) tell them why you have chosen your specialty (major).
     b) speak on the qualities a good engineer should possess.

PART III.   Supplementary Reading

I. *Read the text "**Computer-Aided Design and Manufacture**" and say*:
1.   Where computers are used
2.   What computer-aided design and manufacture is
3.   How computers are classified
4.   What their advantages and disadvantages are
5.   How microprocessors can be used.

Computer-Aided Design and Manufacture

        Because of extraordinary technological developments during the past decades, the term "computer" is becoming a household word. Computer applications have expanded to such breadth that the computer is now an integral part of virtually every type of business and industrial enterprises.
        Engineers and drafters have used computers for years in performing the mathematical operations that go with their jobs. However, an even more innovative

computer application has begun to get widespread using computer-aided design and manufacture. Computer-aided design and manufacture, or CAD/CAM as it is now called, involves applying the computer as a tool in making, checking, correcting, and revising original drawings. The computer can be used for converting a rough sketch into a finished working drawing, performing an infinite number of design computations, producing parts lists, including numerical control, process control, robotics and material requirements planning.

Computers are used by engineers, designers, architects, and drafters in all phases of the design process and then in all phases of the manufacturing process.

When computers are classified according to the type of data they are capable of handling, they are classified as being either digital or analog. In CAD/CAM systems the digital computers are only used.

When computers are classified according to the purpose they serve, they are classified as general-purpose or special-purpose computers.

General-purpose computers have the advantage of flexibility, which allows for broader utilization, but they sacrifice speed. Special-purpose computers are very fast, but they sacrifice flexibility.

The most common types of digital computers are the minicomputers and microcomputers.

A microcomputer is a computer that is manufactured on a single printed circuit board which contains one or more integrated circuit chips.

Microprocessor, minute, inexpensive central processing unit (CPU) of a small computer, can also be used independently in a wide range of applications. A microprocessor is built onto a single piece of silicon, called a wafer or chip, that is commonly no longer than 0.5 cm (0.2 in) along one side and no more than 0.05 cm (0.02 in) thick. Despite its small size, a microprocessor may be programmed to perform a great number of information-handling tasks. It can serve as a general-purpose computing machine for instructional or word-processing use, for controlling other machines or industrial processes, for monitoring hospital patients, and for hand-held calculators. The advent of the microprocessor was made possible by the progressive miniaturization of integrated circuits and by advances in semiconductor technology.

Notes

house-hold – семейный, домашний
to such breadth – до такой ширины
drafting – черчение
innovative – новаторский
widespread – широко распространённый
tool – инструмент, станок
drawing – чертеж, рисунок, набросок
a rough sketch – грубый набросок (эскиз)
infinite – бесконечный
sacrifice – жертвовать
minute – мелкий
advent – прибытие, приход

PART IV.   Speech Exercises

I.   *Pair work*
1.   Imagine you are speaking with your former school mates, try to make them choose exactly your specialty.
2.   Interview your friend and ask him why he decided to be an engineer.

3. You are choosing your major. You get a lot of contradictory (противоречивый) advice from the University graduates. Whose advice will you follow? Why?

II. Develop the following situations
1. Both graduate and undergraduate students work in the laboratories of the University to supplement (дополнить) their theoretical knowledge with practical training. What laboratory would you like to work in? What equipment is necessary for a modern laboratory? What can computers do?
2. Mike and Helen are fifth-year students. They do computer design at the University and they are having practical training in the laboratory of computer design. What functions are performed by computers? Is it necessary for an expert in computer design to have much knowledge? Are you optimistic about the use of computers in our life and in industry? What practical application do computers find in factories, research laboratories?
3. You are at a meeting of the Students' Scientific Society. Discuss possible effects of technological developments over the next two decades. What areas will be the key sectors? Where will intelligent systems that use the latest developments in electronic and information technology be installed?
4. You speak at the conference about computer-integrated manufacturing and the advantages of its introduction at the enterprise.

III. Write down a letter to your English friends about your practical training.

IV. A delegation of students and teachers from Oxford is on a visit to your University. You are asked to tell the guests about your Faculty.

V. Here are some viewpoints on "How to better train specialists". Sometimes they are contradictory. Discuss and criticize them. Give your arguments for and against. You may use the hints given below.
   a) Universities, especially technical ones, should admit more young people with practical experience in industry. Evening and correspondence faculties should be expanded.
   b) The basic principle of a university should be to provide academic training in close cooperation with research institutes, design bureaus and industry.
   c) Students should take part in research work performed at the university as it provides a broad and solid foundation for professional knowledge.

B. RADIO ENGINEERING AND ELECTRONICS

PART I. Text 1: The Faculty of Radio Engineering and Electronics

The radio engineering department was established in 1964 to meet the increasing demands of modern industry for highly qualified radio engineers. In 1980 it was reorganized into the faculty of radio engineering and electronics.

At present, the faculty comprises 3 departments: the department of radio engineering devices and radio systems, the department of radio engineering devices, the department of microelectronics. The faculty numbers over 1000 students. The faculty graduates are in great demand by both new and traditional industries. To meet these needs the faculty trains engineers in 2 specialties and 4 majors in the field of microelectronics, radio engineering devices and radio engineering systems. Various subjects including physics, mathematics, circuits theory foundations of radio engineering

devices on ICs are taught by the teaching staff. Such subjects as philosophy, history, foreign languages broaden horizons and extend the interests of the students. The five-year curriculum is aimed at training engineers in the field of design, production and maintenance of radio electronic devices.

Theoretical education is supplemented with practical training in 27 educational and 12 research laboratories. Moreover, the curriculum envisages 1 month to be spent in industry after the fourth year. Students get practical skills at industrial enterprises of Minsk: the Horizont Amalgamation, the Radio Plant, the Computing Machinery Amalgamation and some others. Today the students have possibilities to work part time in many modern companies and to study foreign equipment. Electronics engineers are employed by electrical utilities, communications companies, manufacturers of electrical and electronic equipment, consulting firms. They design, develop and test power equipment and systems, industrial process control systems, telecommunications, broadcast, recording and audiovisual systems, microelectronic systems and circuits, computers, computer systems and networks and computer software. Further, they assist in inspection, testing, adjusting and evaluation of incoming electrical, electromechanical and electronic components and assemblies to ensure their conformance with product specifications. They also install, operate and maintain electrical and electronic equipment and systems. They calibrate electrical or electronic equipment and instruments according to technical manuals and written instructions, they collect and compile operational or experimental data, and they assist in the preparation of estimates, schedules, budgets, specifications and reports.

A. Active Vocabulary

Nouns and Noun Phrases

curriculum	учебная программа
demand	потребность
faculty graduate	окончивший факультет
estimate	оценка, смета
evaluation	оценка
maintenance	уход, эксплуатация
schedule	опись, список
skill	умение
utilities	коммунальные предприятия

Adjectives

incoming	входящий, поступающий

Verbs and Verbal Phrases

aim at	иметь цель
assist in	принимать участие
be employed	быть принятым на работу
broaden	расширять
calibrate	проверять
compile	собирать
envisage	предусматривать
extend	расширять
install	устанавливать
operate	работать
supplement	дополнять

B. Special Terminology

components and assemblies - компоненты и сборки

radio engineering design foundations – основы проектирования
ICs – интегральные схемы

Class Exercise

I. *Repeat and translate into Russian*
   a) *the following words with the stress on the first syllable*:
   modern, industry, faculty, system, number, student, various, subject, physics, circuit, theory, signal, interest, maintenance, practical, enterprise, network, product, manual, data
   b) *the following words with the stress on the second syllable*:
   department, establish, demand, comprise, device, traditional, design, extend, production, maintain, laboratory, research, equipment, utility, computer, assist, adjusting, component, assembly, horizon, specialty
   c) *the following words and word combinations with two or more stresses:*
   engineer, major, microelectronics, radio engineering, amalgamation, possibility, specification, possibility, specification, telecommunications

II. *Repeat and translate into Russian the following sentences*
   1. The faculty comprises 3 departments. 2. The faculty numbers over 1000 students. 3. The five-year course is aimed at training engineers in the field of design, production and maintenance of radio electronic devices. 4. Students get practical skills at industrial enterprises of Minsk. 5. Today the students have possibilities to work in many modern firms and to study foreign equipment.
   6. Electronics engineers are employed by electrical utilities, communications companies, manufactures of electrical and electronic equipment, consulting firms.

III. *Form and translate into Russian.*
   a) *nouns of the following verbs using the suffixes –tion, -ment, -age, -ing*
   establish, extend, train, employ, test, calibrate, pass
   b) *verbs of the following nouns*
   foundation, production, maintenance, education, training, equipment, utility, manufacturer, inspection, adjusting, evaluation, conformance

IV. *Arrange the words of the two groups in pairs with similar meaning*
   Demand, to comprise, to number, various, to extend, to collect, to calibrate, to operate, to assist in, skill, modern
   To count, up-to-date, need, to compile, to include, ability, to broaden, to take part, different, to work, to test

V. *Arrange the words of the two groups in pairs with contrary meaning*
   To establish, increasing, modern, new, various, to broaden, to employ, highly, theoretical, possibility, foreign
   Same, practical, obsolete, domestic, decreasing, impossibility, old, to narrow, low, to dismiss, to break up

VI. *Make up your own sentences using the following words and combinations*
   To be established, to meet the increasing demands, to comprise, to number, in great demand, theoretical education, the course of study, to be employed by, to assist in, to calibrate

Special difficulties

I. *Complete the sentences by inserting "**to be used to or to get used to**" use the appropriate form of the verb*
1. I … (belong) to a cycling club when I was a boy so I … (ride) long distances. 2. It took me a little while … the traffic? 3. But now I … (ride) in and out among the cars and lorries. People who … (drive) to work will find it difficult to travel by public transport.

II. *Use the correct from of the Infinitive or Gerund*
1. I'll stop (lend) you money if you waste it on cigarettes. 2. I remember (post) the letter you gave me, but I didn't remember (buy) any stamps. 3. He didn't want (lose) any more money, so he gave up (buy books). 4. They are happy (give) an opportunity to see the film again. 5. The workmen got tired of (wait) and went home without (be paid). 6. In spite of (have) a lot of friends, I sometimes feel lonely.
7. Mary stopped (do) her work and looked at the clock. 8. John suggested (go) together in one car.

III. *Open the brackets and use the correct form of the Subjunctive mood*
1. It was recommended that we (started/ start) our experiment. 2. I insist that she regularly (should inform/ would inform) us of the results. 3. It was suggested that they (research/ would research) the superconductivity. 4. The professor proposed that the question (being discussed/ be discussed). 5. She wished at that moment she (had not sent/ did not send) for him. 6. I would (have brought/ bring) the book, but you did not tell me you needed it.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences*
1. Was, radio engineering, in, department, established, 1964.
2. Faculty, 3, at, departments, the, comprises, present.
3. Demand, graduates, are, the, great, in, Faculty.
4. Engineers, at, five-year, is, the, aimed, course, training.
5. Minsk, get, students, of, enterprises, practical, at, industrial, skills.
6. Firms, in, today, modern, the to work, possibilities, students, many.
7. And, electrical, and, install, electronic, operate, equipment, they.

II. *Fill in the blanks with the words given below*
1. The radio engineering department … … in 1964.
2. In 1980 the radio engineering department … … into the faculty of radio engineering and electronics.
3. The faculty … are in great demand by both new and traditional industries.
4. To meet these … the faculty trains engineers in 2 specialties and 4 majors.
5. Theoretical education … … with practical training in 27 study and 12 research laboratories.
6. Students get practical … at industrial enterprises of Minsk.
7. Electronics engineers … … by electrical utilities, communications companies, manufacturers of electrical and electronic equipment.
8. They design, develop and … power equipment and systems.

(skills, to test, to be supplemented, needs, to be employed, graduates,
to be reorganized, to be established)

III. *Fill in the blanks with the prepositions given below*
1. The radio engineering department was established … 1964 to meet the increasing demands … modern industry … highly qualified radio engineers.
2. … 1980 it was reorganized … the faculty … radio engineering and electronics.
3. The faculty graduates are … great demand … both new and traditional industries.
4. The five-year course is aimed … training engineers … the field … design, production and maintenance … radio electronic devices.
5. Theoretical education is supplemented … practical training … 27 study and 12 research laboratories.
6. Electronics engineers are employed … electrical utilities, communications companies, manufacturers … electrical and electronic equipment, consulting firms.
7. They assist … in inspection, testing, adjusting, and evaluation … incoming electrical, electromechanical and electronic components to ensure conformance … product specifications.
   (with, of, in, of, at, by, in, of, for, in, into, in, of, by, in, with, of, in, of)

IV. *Translate into English*
1. Факультет насчитывает свыше 1000 студентов. 2.Окончившие факультет пользуются большим спросом как в новых, так и в традиционных отраслях промышленности. 3. Чтобы удовлетворить эти потребности, факультет готовит инженеров по двум специальностям и 4-м специализациям. 4. Пятилетний курс имеет целью подготовить инженеров в области проектирования, производства и эксплуатации радиоэлектронных приборов. 5. Студенты получают практические умения на промышленных предприятиях Минска. 6. Сегодня студенты имеют возможность работать на многих современных фирмах и изучать иностранное оборудование. 7. Теоретическое образование дополняется практическим обучением в 27 учебных и 12 исследовательских лабораториях. 8. Они также устанавливают, работают и обслуживают электрическое и электронное оборудование и системы.

Text Comprehension Exercises

I. *Listen to the text "**The Faculty of Radio Engineering and Electronics** " and answer the following questions.*
1. What are the specialties and majors trained at the faculty?
2. Theoretical education is supplemented with practical training, isn't it?
3. Where do electronics engineers work?

II. *Listen to the text again and say which of the following three replies is correct*
1. a) At present the faculty comprises 3 departments. b) At present the faculty comprises 5 departments. c) At present the faculty comprises 4 departments.
2. a) The faculty trains engineers in the field of computer aided design. b) The faculty trains engineers in the field of telecommunications. c) The faculty trains engineers in the field of microelectronics, radio engineering and radio engineering systems.
3. a) Various subjects including literature, history, languages are taught by the teaching staff. b) Various subjects including chemistry, biology, mathematics are taught by the teaching staff. c) Various subjects including circuit theory foundations, radio engineering circuits and signals, radio control devices are taught by the teaching staff.
4. a) The five-year course is aimed at training engineers in the field of design, production and maintenance of radio electronic devices. b) The five-year course is

aimed at training engineers in the field of economics. c) The five-year course is aimed at training engineers in the field of broadcasting and television.

5. a) Electronics engineers are employed by telephone exchanges. b) Electronics engineers are employed by electrical utilities, communications companies, manufacturers of electrical and electronic equipment. c) Electronics engineers are employed by schools.

Text Exercises

I. *Read the text and find in it English equivalents of the following words and word combinations*

возрастающие потребности, высококвалифицированный, насчитывать, расширять горизонты, подготовка инженеров, дополнять, проверка

Read the text and answer the following questions

1) When was the radio engineering department established?
2) When was the radio engineering department reorganized into the faculty of radio engineering and electronics?
3) How many departments does the faculty comprise?
4) How many students study at the faculty?
5) What subjects are taught at the faculty?
6) Where do the students get practical skills after their fourth year?
7) Where can electronics engineers work?
8) What do electronics engineers do?

II. *Agree or disagree with the following statements in your answers use the standard expressions of agreement*

1. The radio engineering department was established in 1966. 2. In 1982 the radio engineering department was reorganized into the faculty of radio engineering and electronics. 3. At present the faculty comprises 5 departments. 4. The faculty numbers over 1000 students. 5. Faculty graduates are in great demand by both new and traditional industries. 6. The faculty trains engineers in 2 specialties and 4 majors. 7. The four-year course is aimed at training engineers in the field of design, production and maintenance of radio electronic devices. 8. The course of study comprises 1 month to be spent in industry after the fourth year. 9. Electronics engineers are employed by electrical utilities, communications companies, manufacturers of electrical and electronic equipment, consulting firms.

III. *Develop the following ideas, use the words and combinations provided in brackets*
1. The radio engineering department was established. (in 1964, the increasing demands, modern, industry, of, to meet)
2. The faculty has several departments. (the departments, radio engineering devices and radio systems, of, radio engineering devices, microelectronics).
3. The University curriculum comprises a 5-year period. (the, five-year course, to be aimed at, training engineers, in the field, design production and maintenance of radio electronic devices).
4. The faculty graduates find employment easily. (the, to work ,electronics engineers (to design, to test, power equipment and systems, to assist in inspection, testing, adjusting of incoming electrical and electronic components).

IV. *Extend the following statements, use the text for your reference*
1. At present the faculty comprises 3 departments.
2. The faculty trains engineers in 2 specialties and 4 majors.

3. The five-year course is aimed at training highly qualified and well-educated electronics engineers.
4. Electronics engineers are in great demand.

V. *Speak on:*
   a) the departments of the faculty
   b) various subjects which are taught at the faculty
   c) the practical training of the students
   d) the employment of electronics engineers

Text II: Radio Engineering and Electronics

It is hardly possible to name a sphere of science, engineering or the national economy where electrical and electronic engineering equipment is not used. Electrical engineering, the largest and most diverse field of engineering, is concerned with the development and design, application, and manufacture of systems and devices that use electric power and signals. Among the most important subjects in the field are electric power and machinery, electronic circuits, control systems, computer design, superconductors, solid-state electronics, medical imaging systems, robotics, lasers, radar, consumer electronics, and fiber optics. Despite its diversity, electrical engineering can be divided into four main branches: electric power and machinery, radio engineering and electronics, communications and control, and computers.

Electronics, field of engineering and applied physics deals with research, design, integration and application of devices, usually electronic circuits, the operation of which depends on the flow of electrons for the generation, transmission, reception, processing and storage of information. Information is now generated, transmitted, received, and stored electronically on a scale unprecedented in history, and there is every indication that the explosive rate of growth in this field will continue.

The information can consist of voice or voice or music (audio signals) in a radio receiver, a picture on a television screen, or numbers and other data in a computer. That's why there is every reason to believe that television, radio-receiving, tape-recording – are all based on electronics. Electronics engineers design circuits to perform specific tasks, such as amplifying electronic signals, adding binary numbers, and demodulating radio signals, adding binary numbers, and demodulating radio signals to recover the information they carry. Circuits are also used to generate waveforms useful for synchronization and timing, as in television, and for correcting errors in digital information, as in telecommunications.

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

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

Engineers have been working to bring about two revolutionary changes in the field of communications and control: Digital systems are replacing analog ones at the same

time that fiber optics are replacing copper cables. Digital systems offer far greater immunity to electrical noise. Fiber optics are likewise immune to interference; they also have tremendous carrying capacity, and are extremely light and inexpensive to manufacture.

The greatest application of electronics is in the field of communications.

Radio communications has become to play an important part in our life. Our country has a radio communications system that connects it with the capitals of many countries in Europe, Asia, Africa and Latin America. Radio communications is a means of contact between industrial centers. Radio is of essential importance for keeping in touch with remote points on the globe for in some cases it is the only source of contact. Television is now one of the most popular mass media. The significance of radar can hardly be overestimated. By means of radar installations, aircraft and missiles can be detected at great distance. Radiolocation makes it possible to ensure safe navigation of ships and control the flight and landing of aircraft at night and in bad weather.

Radio electronics, which embraces radio engineering and electronics, has come into use. Radio electronics is branch of engineering of the utmost consequence in every branch of the national economy. It has found an extremely wide application in industrial automation; it is a means by which chemical analysis can be quickly made. Radio electronics is also extensively used in medical research – in diagnosis and treatment of diseases. Virtually unknown just a few decades ago, computer engineering is now among the most rapidly growing fields. The electronics of computers involve engineers in design and manufacture of memory systems, central processing units, and peripheral devices. Foremost among the avenues now being pursued are the design of Very Large Scale Integration (VLSI) and new computer architectures. The field of computer science is closely related to computer engineering; however, the task of making computers more " intelligent" (artificial intelligence), through creation of sophisticated programs or development of higher level machine languages or other means, is generally regarded as being in the realm of computer science. One current trend in computer engineering is microminiaturization. Using VLSI, engineers continue to work to squeeze greater and greater numbers of circuit elements onto smaller and smaller chips. Another trend is toward increasing the speed of computer operations through use of parallel processors, superconducting materials, and the like. A most challenging field in modern science is cybernetics. This science studies the control and communications systems. High-speed computing facilities, capable of making the same amount of computation in a second, that would take years of manual labour to complete, constitute the equipment utilized in cybernetics.

Microelectronics is the technology of constructing electronic circuits and devices in extremely small packages by various techniques. Microelectronics today deals with designing, fabrication and applying of integrated circuits (IC). They may contain hundreds of thousands of transistors on a small piece of material and allow the construction of complex electronic circuits, such as those in microcomputers, audio and video equipment, and communications satellites.

Now we cannot imagine our life without electronics because it provides the basis for countless innovations – CD players, TVs, and computers, to name just a few. From vacuum tubes to transistors to integrated circuits, engineers have made electronics smaller, more powerful, and more efficient, paving the way for the products that have improved the quality and convenience of modern life.

A. Active Vocabulary
Nouns and Noun Phrases
application –применение
applied physics – прикладная физика

consequence – последствие
consumption – потребление
control system – система управления
current – ток
efficiency – эффективность, производительность
exploration – исследование
flow of electrons – поток электронов
frequence - частота
indication – указание, показание
loss – потеря
manufacture – производство
missile – ракета
rate of growth – темп роста
realm – область, мир
scale – шкала, масштаб
significance – важность
wire – провод

Adjectives
Advanced – передовой, совершенный
bulky – большой, громоздкий
remote – отдалённый
significant – важный
single – единственный
sophisticated – (зд.) сложный
tiny – крошечный
tremendous – огромный
unprecedented - беспрецедентный
variable – изменчивый

Verbs and Verbal Phrases
Be concerned with - заниматься
deal with – иметь дело с
involve in - вовлекать
pursue – проводить
range from …to – простираться от…до
recover – получать обратно
transmit – передавать
store – запасать, хранить

B. Special Terminology
adding – прибавление, присоединение
amplifying – усиление
binary number – двоичное число
capacitor – конденсатор
consumer electronics – бытовая электронная аппаратура
digital information – цифровая информация
electrical engineering equipment – электротехническое оборудование
electron-beam lithography – электронолитография
fiber optics – волоконная оптика
ion-beam implantation – ионная имплантация
interference - помеха

Class Vocabulary Exercises

I. *Repeat and translate into Russian*

a) *the following words with the stress on the first syllable*:
science, system, signal, circuit, complex, voltage, current, error, frequency, storage, several

b) *the following words with the stress on the second syllable*:
economy, concern, involve, electrical, electron, equipment, development, device, among, machinery, design, control, efficiency, advance, reception, immunity

c) *the following words and word combinations with two or more stresses*:
application, manufacture, superconductor, distribution, communication, generation, introduction, indication, implantation, electronics, interference

II. *Repeat and translate into Russian the following sentences*

1) Electrical engineering is the largest field of engineering.
2) Electrical engineering is concerned with the development and design, application and manufacture of systems and devices that use electric power and signals.
3) Electrical engineering can be divided into four main branches: electric power and machinery, radio engineering and electronics, communications and control, and computers.
4) Electronics, field of engineering and applied physics, deals with the research, design, integration and application of devices, usually electronic circuits.
5) Electronics engineers design circuits to perform specific tasks.
6) Control systems are used in aircraft and ships, in military fire-control systems, in power transmission and distribution, in robotics.
7) Digital systems are replacing analog ones at the same time that fiber optics are replacing copper cables.
8) Digital systems offer far greater immunity to electrical noise.
9) By means of radar installations aircraft and missiles can be detected at great distance.
10) Radio electronics is branch of engineering of the utmost consequence in every branch of the national economy.

III. *Form and translate into Russian*

a) *nouns of the following verbs using the suffixes –er/or, -tion, -ment,* design, operate, reduce, research, connect, involve, construct, detect, equip, receive, connect, fabricate, involve

b) *verbs of the following nouns*
generation, transmission, introduction, involvement, distribution, interference, application, creation, solution, performance, manufacturer, communication

IV. *Arrange the words of the two groups in pairs with similar meaning*

a) fast, diverse, task, important, error, diversity, reason, main, high, continue, deal with

b) significant, tall, be concerned with, quick, variety, go on, mistake, cause, goal, various, principal

V. *Arrange the words of the two groups in pairs with contrary meaning*

a) reduce, back, advance, tiny, single, complex, creating, rapidly, modern, wide

b) outmoded, narrow, increase, slowly, simple, destruction, front,

numerous, huge, failure

VI. *Make up your own sentences with the following words and word combinations*
electrical engineering, electric power and signals, to transmit power, significant advance, electronics engineers, advanced technology, radio electronics, increasing complexity, countless innovations

Special Difficulties

I. *Read, translate into Russian and memorize*
electrical and electronic engineering equipment; design and development of control systems; application and manufacture of systems and devices that use electric power and signals; electric machinery; electronic circuits; computer design; superconductors; solid-state electronics; medical imaging systems; robotics; lasers; radar; consumer electronics; fiber optics; applied physics; research;generation, transmission, reception, processing and storage of information; radio receiver; a picture on a television screen; or numbers and other data in a computer; tape-recording; electronics engineers; to amplify electronic signals; to add binary numbers; to demodulate radio signals; to recover the information; to generate waveforms useful for synchronization and timing; to correct errors in digital information; telecommunications; to be assembled on a chassis and connected by wires; to form a bulky package; a single tiny chip of silicon; complex; the most advanced technology; electron-beam lithography; micro-manipulators; ion-beam implantation; ultra clean environments; switching of components; three-dimensional; automated manufacturing; in robotics; to offer far greater immunity to electrical noise; to be immune to interference; capacity; radio communications system; mass media; radar installations; aircraft and missiles; radiolocation; computer engineering; memory systems; central processing units; peripheral devices; Very Large Scale Integration (VLSI); new computer architectures; computer science; artificial intelligence; creation of sophisticated programs or development of higher level machine languages or other means; current trend in computer engineering; parallel processors, superconducting materials; cybernetics; high-speed computing facilities, capable of making the same amount of computation in a second; manual labour; microelectronics; technology; technique; integrated circuits (IC); communications satellites; quality; convenience

II. *Complete the following sentences using **because or that's why***
1. Electrical engineering deals with design and development, application and manufacture of many systems and devices…they use electric power and signals. 2. … electronics is both a field of engineering and applied physics, it deals with physical and engineering aspects of electronic circuits. 3. Both my parents are electronics engineers, …I've made a decision to follow their career. 4. He is only a first-year student, … he cannot correct errors in he digital information on the screen. 5. The significance of radar installations cannot be overestimated … they ensure safe navigation of aircraft, missiles and ships. 6. We can hardly imagine our life without electronics … it provides the basis for countless innovations. 7. CD-players, TVs and computers have entered our life…there is every reason to say that we live in the age of electronics.

III. *Complete the following sentences using **hundred/hundreds, thousand/thousands, million/ millions***

1. Some eight (thousand/thousands) students are involved in research. 2.The circuit may contain (hundred thousand/hundreds of thousands) of transistors on a small piece of superconductive material. 3. By means of radar installations, aircraft and missiles can be detected at great distances ranging from (hundred/hundreds) to (thousand/thousands) of miles. 4. Despite its small size, an integrated circuit may contain some (hundred/hundreds) elements. 5. The population of our city exceeds two (million/millions) people. 6. (Million/ millions) of scientists deal with research, design and application of devices on electronic circuits.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences*
1. All, electronics, on, television, are, radio-receiving, based, tape-recording.
2. Circuits, design, engineers, electronics.
3. Are, to, circuits, generate, also, waveforms.
4. In, chips, toward, is, creating, directed, the, smaller, research, electronics.
5. Ones, are, digital, replacing, analog, systems.
6. Of, in, the, communication, greatest, is, field, application, the, electronics.
7. Mass, of, television, the, rapidly, is, into, media, most, developing, one, popular.

II. *Fill in the blanks with the words given below*
1. It is hardly possible to name a sphere of science, engineering or the national economy where electrical engineering … is not used.
2. Despite its diversity, electrical engineering can be divided into four main … .
3. Television, radio-receiving, tape-recording are all based on … .
4. Prior to the 1960s, circuits consisted of separate electronic … .
5. There has been a revolutionary … toward integrating electronic devices.
6. Digital systems are replacing … ones.
7. … is the technology of constructing electronic circuits and devices in extremely small packages by various techniques.
   (trend, microelectronics, equipment, analog, branches, devices, electronics)

III. *Fill in the blanks with the prepositions given below*
1. Electrical engineering can be divided … four main branches.
2. Electronics deals … the research, design, integration and application … devices.
3. Television, radio-receiving, tape-recording are all based … electronics.
4. Much … the research … electronics is directed … creating even smaller chips.
5. Radio communication is a means … contact … industrial centres.
6. Television is rapidly developing … , one … the most popular mass media.
7. Microelectronics is the technology … , constructing electronic circuits and devices … extremely small packages … various techniques.
   (by, in, toward, of, with, into, on, between)

IV. *Translate into English*
1. Электроника имеет отношение с развитием, дизайном, применением и производством систем и устройств, которые используют электроэнергию.
2. Едва ли возможно назвать сферу науки, техники или национальной экономики, где электротехническое оборудование не используется.
3. Несмотря на своё разнообразие, электротехника может быть разделена на 4 основные области.

4.	Электроника имеет дело с исследованием, дизайном и применением приборов.
5.	Радио коммуникация играет важную роль в нашей жизни.
6.	Радио коммуникация это средство связи между промышленными центрами.
7.	Радиоэлектроника - это радиотехника и электроника одновременно.
8.	Микроэлектроника – это технология конструирования электронных схем и приборов.
9.	Микроэлектроника сегодня имеет дело с конструированием, изготовлением и применением интегральных схем.
10.	Мы не можем представить нашу жизнь без электроники.

Text Comprehension Exercises

*I.	Listen to the text "Radio Engineering and Electronics" and answer the following questions*
1. Is electrical engineering the largest and most diverse field of engineering?
2. What is electronics? 3. What does radio electronics embrace? 4. Microelectronics today deals with designing, fabrication and applying of integrated circuits, doesn't it?

II.	*Listen to the text again and say which of the following replies is correct*
1.	a) Electrical engineering is the largest and most diverse field of engineering. b) Electrical engineering is the largest and most diversified of national economy. c) Electrical engineering is the largest and most diverse field of electronics.
2.	a) Electrical engineering can be divided into four main branches. b) Electrical engineering can be divided into two main branches. c) Electrical engineering can be divided into ten main branches
3.	a) Much of the research electronics is directed toward creating bigger chips. b) Much of the research electronics is directed toward creating even smaller chips. c) Much of research electronics is directed toward robotics.
4.	a) The significance of radar can hardly be overestimated. b) The significance of radar can hardly be noticed. c) The significance of our research can hardly be mentioned.
5.	a) Microelectronics is the technology of constructing electronic circuits and devices in extremely big packages. b) Microelectronics is the technology of constructing electronic circuits and devices in extremely small packages.
c) Microelectronics is the technology of storing electronic circuits and devices in different packages.

Text Exercises

*I.	Read the text and find in it English equivalents of the following words and word combinations*
Громоздкий, иметь дело с, двоичное число, бытовая электронная аппаратура, электротехническое оборудование, волоконная оптика, электролитография, порождать, передавать, конденсатор, несмотря на многообразие, поэтому есть смысл верить в то, что…, до 1960-х, сотни тысяч, и тому подобно, прикладная физика, отдалённый, крошечный, едва ли возможно, передовой

II.	*Read the text and answer the following questions*
1. What is electrical engineering concerned with? 2. In what parts can electrical engineering be divided? 3. What does electronics deal with? 4. What is based on

electronics? 5. What specific tasks do electronic engineers perform? 6. Why are circuits used? 7. Where are control systems used? 8. The greatest application of electronics is in the field of communications, isn't it? 9. What is radio communications? 10. What is radio electronics? 11. Where is radio electronics used? 12. What does cybernetics study? 13. What does microelectronics deal with today?

III.   *Agree or disagree with the following statements, in your answers use the expressions of agreement or disagreement*
1.   It is possible to name a sphere of science, engineering or the national economy where electrical engineering equipment is not used.
2.   The field of electric power is concerned with the design and operation of systems.
3.   Information is now generated, transmitted, received, and stored electronically.
4.   Prior to the 1990s, circuits consisted of separate electronic devices.
5.   Much of the research in electronics is directed toward creating even bigger chips.
6.   Radio communications has become to play an important part in our life.
7.   Radio electronics, which embraces radio engineering and electronics, has come into use.
8.   Microelectronics today deals with designing, fabrication of integrated circuits.

IV.   *Develop the following ideas use the words and word combinations provided in brackets*
1.   Electrical engineering is concerned with the development and design, application and manufacture of systems and devices (can be divided, that, electric power and signals, four main branches, use, electric power and machinery, radio engineering, electronics, computers).
2.   Electronics deals with the research, design, integration and application of devices (electronic circuits, to depend on, flow of electrons, generation, transmission, reception, processing of information).
3.   The greatest application of electronics is in the field of communication (Radio communication, to play, important part, life).
4.   Radio electronics has come into use (to embrace, radio engineering, electronics, to use, medical research, treatment of diseases).
5.   Microelectronics is the technology of constructing electronic circuits and devices (to deal with, integrated circuits, fabrication, designing applying, to contain, transistors, hundreds of thousands).

V.   *Extend the following statements, use the text for your reference*
1.   Electrical engineering is the largest field of engineering.
2.   Electronics embraces both engineering and applied physics.
3.   The greatest application of electronics is in the field of communications.
4.   The significance of radio electronics can hardly be overestimated.

VI.   *Speak on:*
1.   Electrical engineering.
2.   Electronics.
3.   Radio electronics.
4.   Microelectronics.

PART II. Conversation: "Mike is Planning to Deal with Microelectronics"

Standard Phrases

How are you?	Как Вы поживаете?
I am fine.	Отлично, прекрасно.
I'm very well, indeed.	Очень хорошо, на самом деле
See you soon!	До скорой встречи!
I'd like …	Мне хотелось бы …
Would you like …	Хотел бы ты …
I wish you success.	Желаю успеха!
Certainly.	Конечно.
I see	Ясно. Понятно
In my opinion.	По-моему.
To my mind.	
That's right!	Хорошо, правильно.
By the way	Кстати
We attend the same university	Мы учимся в одном университете

Exercises

I.   Complete the missing phrases in the following short conversations
1.– Listen, Helen. This is Sue Richardson, she is my friend from Canada.
- …
- How do you do, Helen? Where are from?
- …

2. – How are you doing, Peter? Fine, I hope?
- … Glad to see you
- Me, too. Where are you going?
- I'd like to have a look at some magazines at the library.
- Great. Have a nice day. See you.
- …

3. – Are you going to be an engineer?
- …
- What made you choose this profession?
- … It's very important, you know, and besides, my father is an engineer, and I'd like to follow his career.
- …

4. – I'd like to work in one of the laboratories of our university. I think I ought to get more practical experience.
- …
- Yes, I certainly should. It's a field that interests me very much.

5. – I'm very much interested in computers.
- … They can do a lot.
- And you know I've come to realize that computers are the most suitable and reliable machines for making calculations.
- … They make partners in space, research, business, medicine.

II.   Translate the following short conversations into English using standard phrases
1.   - Послушай, Майк. Это Лиза Джонсон. Она из Америки
- Здравствуйте. Рада познакомиться с Вами.
2.   – Как ты поживаешь, Ник?
- Хорошо. Я надеюсь, ты тоже.

3.   – Ты собираешься стать инженером?
        - Да, мне хотелось бы.
4.   – Что заставило тебя выбрать эту профессию?
        - Я всегда интересовался радиотехникой.
5   – Мне хотелось бы поработать в одной из лабораторий нашего университета.
        - Хотел бы ты работать в лаборатории электронных приборов?
        - Да, конечно.
6 – Я очень интересуюсь компьютерами.
        - И я тоже (So am I). По-моему, эти машины могут делать многое.

*III.   Listen to the conversation "**Mike is Planning to Deal with Microelectronics**" and answer the following questions*
1.   The conversation is taking place this summer, isn't it?
2.   Are Carol and Mike speaking about the profession of an engineer?
3.   Does Mike study at the Belarusian State University of Informatics and Radio Electronics?
4.   In what year is Mike?
5.   What will Mike be dealing with?
6.   Why did Mike choose such a major?
7.   Where would Mike like to work after graduating from the University*?*

*IV.   Listen to the conversation "**Mike is Planning to Deal with Microelectronics**" and imitate the speaker's' pronunciation*

Mike is Planning to Deal with Microelectronics

David: How are you doing, Mike? Fine, I hope?
Mike: Hi, David! I'm very well indeed, thanks. Glad to see you again this summer.
David: Me, too. Listen, Mike. This is Carol Robinson. We attend the same university.
Mike: Hallo, Carol. How do you do?
Carol: How do you do, Mike. Are you a student ?
Mike: Yes, I'm a fourth-year student of the Belarusian State University of Informatics and Radioelectronics.
Carol: And what is your future profession?
Mike: I'm going to be an electronics engineer. I'll deal with the design and development of integrated circuits.
Carol: Oh, how interesting! What made you choose exactly this major?
Mike: I have always been interested in microelectronics. It is a branch of electronics of the utmost consequence.
Carol: I agree. I know its contribution to the world's progress is very important. It has paved the way for the products that have improved the quality and convenience of our life. By the way, where would you like to work after graduating?
Mike: It would be interesting for me to work somewhere in a design office or to do some sort of research. I'm seriously thinking of taking a post graduate course.
Carol: I hope to wake up one day and hear you've won the Nobel prize.
Mike: Hm…, you are kidding, Carol. But why not? Our school in microelectronics is one of the best in the world.
Carol: Sorry, Mike, I must be off. It was nice meeting you. See you later.
Mike: See you later, Carol.

Notes

How are you doing? = How are you?

You are kidding – Ты шутишь

It was nice meeting you – приятно было с Вами познакомиться (говорится в конце встречи, в отличие от фразы "It's nice to meet you", которая произносится всегда в начале разговора)

To take a post graduate course – учиться в аспирантуре

I must be off. – Я должен идти.

V.   Memorize and play out the conversation "Mike is Planning to Deal with Microelectronics"
VI.   Role-play the following situations

You've got acquainted with some overseas students:

    c) Tell them why you have chosen your specialty (major).
    d) Speak on the importance of doing microelectronic research and development.

PART III. Supplementary Reading

*I.   Look through the text **"Recent Developments"** and answer the following questions:*

1.   What are the advantages of further IC development?
2.   What systems are based on microprocessors?
3.   How many transistors are sophisticated microprocessors expected to contain?
4.   What changes are expected in lithographic techniques?
5.   What dimensions will new devices and circuit designs approach?
6.   What does the digitalization of audio signals result in?
7.   How has medical electronics progressed recently?
8.   How can the speed and capacity of computers be increased?

Recent Developments

The development of integrated circuits has revolutionized the fields of communications, information handling, and computing. Integrated circuits reduce the size of devices and lower manufacturing and system costs, while at the same time providing high speed and increased reliability. Digital watches, hand-held computers, and electronic games are systems based on microprocessors.

The technology of microprocessors and integrated-circuit fabrication is changing rapidly. Currently, the most sophisticated microprocessors contain about ten million transistors. By the year 2000, advanced microprocessors are expected to contain more than 50 million transistors, and about 800 million by 2010.

Lithographic techniques will also require improvements. By the year 2000, minimum element size will be less than 0.2 microns. At these dimensions, even short-wavelength ultraviolet light may not reach the necessary resolution. Alternative possibilities include using very narrow beams of electrons and ions or replacing optical lithography with lithography that uses X rays of extremely short wavelength. Using these technologies, clock speeds could increase to more than 1000 MHz by 2010.

It is expected that the limiting factor in microprocessor performance will be the behavior of the electrons themselves as they are propelled through the transistors. At extremely small dimensions, quantum effects due to the wavelike nature of electrons could dominate the behavior of transistors and circuits. New devices and circuit designs may be necessary as microprocessors approach atomic dimensions. Techniques including molecular-beam epitaxy, in which semiconductors are layered one atom at a

time in an ultra-high-vacuum chamber, and scanning tunneling microscopy, whereby single atoms can be viewed and even moved with atomic precision, may be the tools needed to produce future generations of microprocessors.

Other developments include the digitalization of audio signals, where the frequency and amplitude of an audio signal are coded digitally by appropriate sampling techniques, that is, techniques for measuring the amplitude of the signal at very short intervals. Digitally recorded music shows a fidelity that is not possible using direct-recording methods. Digital playback devices of this nature have already entered the home market. Digital storage could also form the basis of home video systems and may significantly alter library storage systems, because much more information can be stored on a disk for replay on a television screen than can be contained in a book.

Medical electronics has progressed from computerized axial tomography, or the use of CAT or CT scanners, to systems that can discriminate more and more of the organs of the human body. Devices that can view blood vessels and the respiratory system have been developed as well. Ultrahigh definition television also promises to substitute for many photographic processes, because it eliminates the need for silver.

Today's research to increase the speed and capacity of computers concentrates mainly on the improvement of integrated circuit technology and the development of even faster switching components. Very-large-scale integrated (VLSI) circuits that contain several hundred thousand components on a single chip have been developed. Very-high-speed computers are being developed in which semiconductors may be replaced by superconducting circuits using Josephson junctions and operating at temperatures near absolute zero.

PART IV. Speech Exercises

I. Pair work
1. Imagine you are speaking with your former school mates, convince them in the correctness of your professional choice.
2. Interview your friend and ask him why he made a decision to be an electronics engineer.
3. You are choosing your major among radio engineering, communications and control, computer engineering, microelectronics, etc. You get a lot of advice from the University graduates. Whose advice will you follow? Why?

II. Develop the following situations
1. Both graduate and undergraduate students work in the laboratories of the University to supplement (дополнить) their theoretical knowledge with practical training. What laboratory would you like to work in? What equipment is necessary for a modern laboratory? And how is this laboratory equipped?
2. Mike and Helen are fifth-year students. They do electronics at the University and they are having practical training in the laboratory of semiconductor devices and are discussing their diploma projects.
3. You are at a meeting of the Students' Scientific Society. Discuss possible effects of recent electronic developments over the next two decades. What areas will be the key sectors?
4. Your are a report on how the development of integrated circuits has revolutionized all our life.

III. Write down a letter to your American friends about your major and career opportunities.

IV.   A delegation of overseas students and teachers is on a visit to your University. You are asked to tell the guests about your Faculty.

V.   Here are some viewpoints on "How to better train specialists". Discuss them. Give your arguments for and against. You may use the hints given below.
   a) Universities, especially technical ones, should admit more young people with practical experience in the related industry. Evening and correspondence faculties should be expanded.
   b) The basic principle of a university should be to provide academic training in close cooperation with research institutes, design bureaus and industry.
   c) Students should take part in research work performed at the university as it provides a broad and solid foundation for professional knowledge.

C. TELECOMMUNICATIONS

PART I.   Text I: The Faculty of Telecommunications

Telecommunications is a process of sending or receiving messages by telephone, radio, television or telegraph. In other words, it is a communication over a distance using equipment to overcome that distance. Telecommunications enables people around the world to contact one another, to access information instantly, and to communicate from remote areas. Telecommunications also provides the key medium for news, data, information, and entertainment transfer.

Over the past hundred years, the telephone has become the most familiar form of telecommunications. More recently, it has been supplemented by a range of computer-based telecommunications services. These have become popular through the Internet and World Wide Web, vast computer networks, which provide many people with the means to exchange information. Nowadays it is taken for granted that by pressing a few buttons people can talk to their families, friends, or business associates across the world.

The telecommunications industry has blossomed with the advent of new technologies. The advance of sophisticated telecommunications systems such as the Internet and fibre optics and the development of improved computer technology have stimulated the growth of this industry. Consequently, there is an increasing demand for skilled workers to meet the needs of telecommunications services.

The faculty of telecommunications was established in 1980. Today it is an educational and scientific centre with more than 600 students. 117 teachers among whom there is a corresponding member of the Belarusian Academy of Science, 9 doctors of sciences and professors, 48 candidates and associate professors work in 6 departments. Many experiments and investigations are being carried out in a number of scientific research laboratories attached to the departments.

The faculty offers two specialties, i.e. telecommunications systems and metrology, standardization and certification. The former has six majors such as multi-channel telecommunications systems; wireless communication, radio broadcasting and television; optic systems of transmitting and processing information; systems of computer-aided communication; telecommunications networks and facilities; information protection in telecommunications networks and facilities; while the latter has only one, i.e. metrology and metrological equipment.

Telecommunications engineers are employed by different industrial enterprises and organizations, especially in the field of radio electronics and communication. They are also in great demand at design offices, research institutes, television companies, telephone exchanges, broadcasting stations, consulting firms and other telecommunications

services. They are able to develop, design, maintain up-to-date telecommunications systems and facilities, and install automatic telephone exchanges. Further, they inspect and test telecommunication equipment and networks, analyse and record test results.

A. Active Vocabulary
Nouns and Noun Phrases
advance — развитие; распространение
advent — появление
broadcasting — (радио-, теле) передача, трансляция, радиовещание, телевидение
data — информация, данные
department — кафедра
exchange — телефонная станция; коммутатор
means — средство, способ
medium (pl. media)— средство, носитель информации
network — сеть
service — служба; услуги

Verbs and Verbal Phrases
access — иметь доступ
communicate — поддерживать связь, общаться; передавать
enable— давать возможность, позволять
exchange — менять, обменивать(ся)
install — устанавливать, монтировать, собирать
maintain — производить техническую эксплуатацию и обслуживание
meet the demand — отвечать требованиям, удовлетворять потребности
overcome — преодолеть
take for granted — считать что-либо само сабой разумеющимся

Adjectives
remote — отдаленный, дистанционный
skilled — квалифицированный
vast — обширный, огромный

B. Passive Vocabulary
associate (n) — партнер
associate professor (n) – доцент
attached to (зд. prep.) — при
blossom (v) — развиваться, расцветать
button (n) — кнопка
entertainment (n) — развлечение, увеселение
familiar (adj) — привычный, обычный
imply (v) — подразумевать, включать
range (n) — ряд
supplement (v) — дополнять, добавлять

C. Special Terminology
metrology and metrological equipment — метрология и метрологическое обеспечение
multi-channel telecommunication systems — многоканальные системы телекоммуникаций
optic systems of transmitting and processing information — оптические системы передачи и обработки информации

protecting information in telecommunication networks and facilities — защита информации в сетях и устройствах телекоммуникаций
systems of computer-aided communication — системы автоматической коммутации
telecommunication networks and facilities — сети и устройства телекоммуникаций
wireless communication, radio broadcasting and television — радиосвязь, радиовещание и телевидение

Class Vocabulary Exercises

I. *Repeat and translate into Russian*
    a) *the following words with the stress on the first syllable***:**
      access, data, medium , network, service
    b) *the following words with the stress on the second syllable:*
      advance, advent, communicate, department, enable, exchange, install, maintain, remote
    c) *the following words with two or more stresses:*
      broadcasting, overcome, metrological equipment, multi-channel, telecommunication, computer-aided communication ,wireless communication

II. *Repeat and translate the following sentences*
1. Telecommunications is a communication over a distance using equipment to overcome that distance.
2. Telecommunications also provides the key medium for news, data, information, and entertainment.
3. The telecommunications industry has blossomed with the advent of improved computer technology and sophisticated telecommunications systems.
4. Many experiments and investigations are being carried out in a number of scientific research laboratories attached to the departments.
5. Telecommunication engineers develop, design, maintain up-to-date telecommunication systems and facilities, and install automatic telephone exchanges.

III. *Form*
    a) *nouns of the following verbs using the suffixes**, -ion, -ment, -ing**, and translate them into Russian*
      organize, communicate, inform, specialize, investigate, equip, entertain, develop, depart, correspond, broadcast, process, transmit, consult, use, receive, send, increase, protect
    b) *nouns of the following adjectives using the suffixes **-(e)ance, -ity, -ness***
      distant, different, popular, facile, special, busy

IV. *Arrange the words of the two groups in pairs with similar meaning*
    a) accept as true without any investigation, allow, appearance, assemble, chair, communicate, exploit, habitual, information, medium, obtain, qualified, remote, broadcast
    b) advent, contact, data, department, enable, familiar, install, maintain, means, relay, send, skilled, take for granted

V. *Arrange the words of the two groups in pairs with contrary meaning*
    a) blossom, connect, increase, receive, remote, the former, vast
    b) decline, decrease, disconnect, nearest, send, the latter, tiny

VI. *Make up your own sentences using the following words and word combinations*
network, broadcasting, means, to communicate, to access, to enable, skilled, exchange

Special difficulties

I. *Translate into Russian the following sentences. Pay special attention to the use of the word "mean(s)".*
1. In the past the word "engineer" meant a designer of engines. 2. The meaning of "telemetry" is "measuring" at a distance and is a combination of Greek and Latin words. 3. By means of satellites we can communicate with any country of the world. 4. There were no means of direct communication before the telephone was invented. 5. By communication we mean various ways to send information. 6. The importance of space means of communication is increasing every year. 7. By what means is speech transmitted over a distance? 8. The mean distance between these two objects is not known yet. 9. Wires and cables are still the primary means for telephone connections. 10. You can now connect your computer to computers all over the world by means of the Internet.

II. *Choose and use the words few/a few*
1. … people know that the Earth is the only planet having liquid water. 2. In the past astronomers spent all their lives to make … hundred thousand calculations. 3. In the next … years a new generation of computers will be developed. 4. It will take … more years to produce a 10-billion operations computer. 5. In the next … years since their first appearance in 1939, only … people owned television sets.

III. *Turn the following sentences from the Active into the Passive Voice and translate them into Russian*
1. Recently colour television has replaced black-and-white TV. 2. In 1901 Marconi demonstrated that we could use radio waves to transmit information over long distances. 3. Other forms of telecommunications have largely replaced telegraph. 4. The scientists can also use laser beams to transmit signals between a satellite and the earth.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences*
1. Equipment, is, distance, telecommunications, overcome, a, using, to, distance, that, communication, over.
2. Of, industry, the, blossomed, technologies, with, telecommunications, has, new, the, advent.
3. For, workers, an, demand, there, skilled, increasing, is.
4. Laboratories, many, attached to, the, scientific, being, investigations, in, carried out, department, a.
5. By, telecommunications, different, employed, enterprises, engineers, are, industrial.

II. *Fill in the blanks with the words given below*
Familiar, have become, networks, sending, key, receiving, processing, means, facilities
1. Telecommunications is a process of … or … messages by telephone, radio, television or telegraph.

2. Telecommunications also provides the … medium for news, data, information, and entertainment.
3. Over the past hundred years, the telephone has become the most … form of telecommunications.
4. The Internet and World Wide Web, vast computer …, provide many people with the … to exchange information.
5. I haven't made my mind yet what specialization to choose either that of telecommunications networks and … or that of optic systems of transmitting and …information.
6. Computer-based telecommunications services … popular through the Internet and World Wide Web.

III. *Fill in the blanks with the prepositions given below*
    <u>among, from, for, with, in, across, of, over, around</u>
1. Today it is an educational and scientific centre … more than 600 students.
2. Telecommunications engineers are … great demand at different industrial enterprises.
3. Telecommunications enables people … the world to communicate … remote areas.
4. It is taken … granted that by pressing a few buttons people can talk to family, friends, or business associates … the world.
5. Communication implies ways and means … exchanging information … long distances.
6. 117 teachers … which there is a corresponding member of the Belarusian Academy of Science work in 6 departments.

IV. *Translate into English*
1. Телекоммуникации позволяют людям во всем мире устанавливать и поддерживать связь друг с другом.
2. Развитие сложных систем коммуникаций, таких как Интернет и волоконная оптика, привели к постоянно растущему спросу на высококвалифицированные кадры.
3. В научно-исследовательских лабораториях студенты проводят эксперименты и исследования под руководством опытных преподавателей.
4. Факультет предлагает две специальности: «Системы телекоммуникаций» и «Метрология, стандартизация и сертификация».
5. Высококвалифицированные специалисты требуются в конструкторских бюро, научно-исследовательских институтах, телефонных станциях и других телекоммуникационных службах.
6. Выпускники нашего факультета умеют проектировать, разрабатывать и производить техническую эксплуатацию и обслуживание систем и устройств телекоммуникаций.

Text Comprehension Exercises

I. *Listen to the text **"The Faculty of Telecommunications"** and answer the following questions*
1. How many specialties and majors does the Faculty have?
2. What can telecommunications offer us?
3. Where are telecommunications engineers required?
4. What has stimulated the growth of telecommunications industry?

II. *Listen to the text again and say which of the following replies is correct*

1. The Faculty of Telecommunications was a) reorganized; b) founded; c) dismissed in 1980.
2. Computer-based telecommunications services a) gained their popularity; b) lost their popularity; c) became unpopular through the Internet and World Wide Web.
3. There is an increasing demand for a) qualified specialists; b) good teachers; c) advanced students.
4. Telecommunications enables people to access information a) daily; b) simultaneously; c) instantly.
5. The advance of a) up-to-date; b) obsolete; c) complicated telecommunications systems has stimulated the growth of communication industry.

Text Exercises

I. *Read the text and find in it English equivalents of the following words and word combinations*
защита информации, многоканальные системы телекоммуникаций, передача и обработка информации, радиосвязь, радиовещание, сети и устройства телекоммуникаций, системы автоматической коммутации, средства обмена информацией, развитие сложных систем телекоммуникаций, исследовательская лаборатория при кафедре, доцент, доктор наук, кандидат наук, подразумевать, мгновенный доступ к информации, отдаленные районы, телефонная станция, основной носитель информации

II. *Read the text and answer the following questions*
1. What does telecommunication enable people to do?
2. When did telephone become the most familiar form of telecommunications?
3. What is taken for granted nowadays?
4. What has the telecommunications industry blossomed with?
5. What has stimulated the growth of telecommunication industry?
6. Why is there an increasing demand for skilled workers?
7. When was the Faculty of Telecommunications established?
8. Who does the teaching staff consist of?
9. Where are the experiments and investigations being carried out?
10. What specialties does the Faculty offer to its students?
11. What majors does the specialty of telecommunications systems have?
12. What major does the specialty of metrology, standardization and certification have?
13. Where are the telecommunications engineers employed?
14. What are the telecommunications engineers' duties?

III. *Agree or disagree with the following questions, in your answers use the following expressions of* agreement: *Yes, that's right.* or disagreement: *Sorry, it is not right.*

Yes, that's correct.	*I'm afraid it is not quite right.*
I should say it is perfectly correct	*I think this information is incorrect.*
I fully agree.	*It's all wrong.*
Nothing wrong with that.	*I'm afraid it's wrong.*

1. Recently telephone has become the most familiar form of telecommunications.
2. There is a growing demand for qualified specialists in the field of telecommunications.
3. The Faculty of Telecommunications was created in 1964.

4. Telecommunications is a process of sending or receiving messages over long distances.
5. The Internet enables people around the world to contact one another.
6. Telecommunications engineers only develop and design telecommunications systems.

IV. *Develop the following ideas, use the words and word combinations provided in brackets.*
1. Telecommunications is a process of sending and receiving information (messages, telephone, telegraph, television, radio, long distance, exchange, means, remote areas, key medium).
2. The telecommunications industry has blossomed with the advent of new technologies (advance, sophisticated, be supplemented with, familiar, provide, to take for granted, fibre optics, improved, stimulate, demand).
3. The Faculty of Telecommunications is an educational and scientific centre (be established, departments, teachers, laboratories, carry out, specialties, majors).
4. Telecommunications engineers work at different enterprises (be employed, maintain, install, equipment, facilities, research institutes, be in great demand, telephone exchange).

V. *Extend the following statements, use the text for your reference*
1. The Faculty offers two specialties.
2. Telecommunications engineers are in great demand at different enterprises in the field of telecommunications and radio electronics.
3. The teaching staff consists of a number of qualified specialists.
4. The telecommunications industry has progressed with the advent of new technologies.

VI. *Speak on:*
1. the development of telecommunications industry,
2. the Faculty of Telecommunications and its majors,
3. the employment prospects of telecommunications engineers.

Text II: Telecommunications

Telecommunications includes devices and systems that transmit electronic signals across long distances. Telecommunications usually involves a sender of information and one or more recipients linked by a technology, such as, say, a telephone system, that transmits information from one place to another. Telecommunications devices convert different types of information, both sound and video, into electronic signals. These signals can then be transmitted by means of media, which may be telephone wires or radio waves. When a signal reaches its destination, the device on the receiving end converts the electronic signal back into an understandable message, such as sounds over a telephone, moving images on a television screen, or words and pictures on a computer display. Telecommunications enables people to send and receive personal messages across town, between countries, and to and from outer space.

Telecommunications is comprised of a few basic network components, each of them consisting of a combination of hardware:

1. User equipment—telephones, computers, and all other devices that provide a means of   accessing the network;

2. Transmission—the means by which huge amounts of data are carried from one place to another;

3. Switching—the hierarchy of local, long-distance, and international switches that allow any user of the network to connect to any other user.

Individual people, businesses, and governments use many different types of telecommunications systems. Telecommunications messages can be sent in a variety of ways and by a wide range of devices. The messages can be sent from one sender to a single receiver or from one sender to many receivers. Some systems, like the telephone system, use a network of cables, wires, and switching stations for point-to-point communication. Other systems, such as radio and television, broadcast signals through space and they can be received by anyone who has a device to receive them. Some systems make use of several types of media to complete a transmission. For example, a telephone call may travel by means of copper wire, fibre-optic cable, and radio waves. All telecommunications systems are constantly evolving as telecommunications technology improves.

Wires and cables were the original media for telecommunications. They are still the primary means for telephone connections. Other wire-based services employ coaxial cables used by cable television to provide hundreds of video channels to subscribers. Fibre-optic cables can transmit signals in the form of pulsed beams of laser light. Fibre-optic cables carry much more information than copper wires do. They are able to transmit several television channels or thousands of telephone conversations at the same time.

Telecommunications without wires uses technologies such as cordless telephones, cellular radiotelephones, walkie-talkies, citizens band radios, pagers, and satellites. Wireless communications offers increased mobility and flexibility.

Broadcast radio, television and cellular radiotelephones are examples of devices that operate by modifying electronic signals, making the signals reproduce the original message. This form of transmission is known as analogue transmission. Computers and other types of electronic equipment, however, transmit digital information that can be transmitted faster and more clearly than analogue signals. The capacity of digital networks has grown very rapidly and they can carry a mix of voice, data, text and pictures.

Wireless telecommunications uses radio waves, sent through space from one antenna to another, as the medium for communication. Radio waves are used for receiving AM and FM radio and television signals. Cordless telephones and wireless radiotelephone services, such as cellular radio telephones and pagers also use radio waves. Telephone companies use microwaves to send signals over long distances.

Communications satellites provide a means of transmitting telecommunications all over the globe, without any need for a network of wires and cables. The satellites receive transmissions from Earth and transmit them back to numerous on-ground station receivers located far from each other. Ship, aeroplane, and land navigators also receive signals from satellites to determine their geographic locations.

A. Active Vocabulary
Nouns and Noun Phrases
hardware — аппаратное, техническое оснащение
link — связь
message — сообщение, послание
software — программное обеспечение
subscriber — абонент
switch — коммутатор
Verbs and Verbal Phrases
convert — превращать, преобразовывать
involve — включать; подразумевать
reach — достигать
relay — передавать, транслировать

<div align="center">Adjectives</div>

local — местный, с ограниченным распространением
long distance — рассчитанный на далекое расстояние, междугородный

B. Passive Vocabulary

option (n) — выбор
range (n) — ряд, серия
reflect— отражать

C. Special Terminology

amplitude modulation (AM) — амплитудная модуляция
citizen band radio — радио с диапазоном для персональной и служебной радиосвязи
coaxial cable — коаксиальный кабель
frequency modulation (FM) — частотная модуляция
navigator — навигационная система
walkie-talkie — портативная рация

Class Exercises

I.   *Repeat and translate into Russian*
 a)   the following words with the stress on the first syllable:
hardware, message, software, satellite, frequency
 b) the following words with the stress on the second syllable:
convert, involve, relay, subscriber, mobility
c) the following words with two or more stresses:
outer space, modulation, flexibility, user equipment

II.   *Repeat and translate the following sentences*
1.   Telecommunications usually involves a sender of information and one or more recipients linked by a technology that transmits information from one place to another.
2.   The signals can be transmitted by means of media such as telephone wires or radio waves.
3.   Telegraphs have been largely replaced by other forms of telecommunications, such as fax machines and e-mail.
4.   Fibre-optic cables are able to transmit several television channels or thousands of telephone conversations at the same time.
5.   The satellites receive transmissions from Earth and transmit them back to numerous Earth station receivers.
6.   Most personal computers communicate with each other and with larger networks, such as the Internet, by using the ordinary telephone network.

III.   *Form*
a) nouns of the following verbs using the suffixes, -**er,- or, -ing, -tion** *and translate them into Russian*
send, use, receive, subscribe, compute, page, navigate, switch, create, modulate, connect, converse, move
b) adjectives using the suffixes -**able, -al, -ent** *and translate them into Russian*
understand, differ, digit, person, origin

IV.   *Arrange the words of the two groups in pairs with similar meaning*
a) transform, private, antenna, need, wide, wireless, globe, include, employ, determine, long, complex

b) cordless, aerial, convert, personal, requirement, sophisticated, define, embrace, great, use, world, broad

V.   *Arrange the words of the two groups in pairs with contrary meaning*
    a) single, connect, part, hardware, digital, modulate, different, create, sender
    b) same, software, destroy, recipient, numerous, whole, demodulate, analogue, disconnect

VI.   *Make up your own sentences using the following words and word combinations*
    message, convert, e-mail, sender, hardware, software, cellular, cordless, communication satellite, microwave

Special Difficulties

I.   *Translate into Russian the following sentences. Pay special attention to the use of the word "mean(s)"*
    To mean — значить, означать   Meaning — значение
    Means — средство   By means of — посредством
    By no means — ни в коем случае   Mean — средний; среднее число
    1.In the past the word "engineer" meant a designer of engines. 2. The meaning of "telemetry" is measuring at a distance and it is a combination of Greek and Latin words. 3. By means of satellites we can communicate with any country of the world. 4. There were no means of direct communication before the telephone was invented. 5. By communication we mean various ways to send information. 6. The importance of space means of communication is increasing every year. 7. By what means is speech transmitted over a distance? 8. The mean distance between these two objects is not known yet. 9. Wires and cables are still the primary means for telephone connections. 10. You can now connect your computer to computers all over the world by means of the Internet. 11. By no means the computer can substitute a human being in all respects. 12. What is the mean annual temperature in your country?

II.   *Translate into Russian the following sentences. Pay special attention to the use of the verb "to involve" and its derivatives*
    1.The water protection of Lake Baikal has shown the true position of the organizations involved. 2.International involvement in the space program raises a number of questions. 3.Work with computers and other sophisticated electronic devices involves two different types of construction: hardware and software. 4. An efficient radiator is capable of warming a large room, the process involved is convection. 5. To understand the operation of computers one must understand the principles involved**.**

III.   *Translate into Russian the following sentences. Pay special attention to the meaning of the words given below*
    To provide — обеспечивать; снабжать, предусматривать
    Providing — обеспечение; при условии, если только; в том случае, если
    Provided — обеспеченный; предусмотренный; снабженный; при условии, если только; в том случае, если
    1. After providing this command, the channel can communicate with other devices on the interface. 2. A new system for motor car can be provided with infrared sensors that can detect a human finger at night. 3. The speed of a satellite would be less provided it moved at a greater distance from the earth. 4. The process could be

repeated, providing we wanted to receive the final results. 5. The set of instructions is provided for the logical processing of data. 6. The device will be of small size, provided it is designed on transistors. 7. Providing she studies hard, she'll pass her exams. 8. During the entire flight the pilot is provided with all the necessary information about weather conditions.

Home Vocabulary Exercises

I.   *Arrange the following words into your own sentences:*
1.   electronic, begin, are converted, telecommunications, with, signals, into, messages, that.
2.   a, of, transmit, are, ways, decode, signals, there, create, and, to, variety.
3.   original, and, telecommunications, were, wires, for, cables, medium, the.
4.   very, capacity, has grown, digital, the, rapidly, networks, of.
5.   wires, information, can, many, cables, copper, carry, than, fibre-optic, times, more.
6.   companies, are used, transmit, great, television, to, satellites, by, distance, signals, across, communications.

II.   *Fill in the blanks with the words given below:*
          digital, are converted, reaches, fiber-optic, cordless, wires

1.   Telecommunications begins with messages that … into electronic signals.
2.   Telecommunications media may or may not use … .
3.   Telecommunications without wires uses technologies such as … telephones, cellular radiotelephones, walkie-talkies, citizens band radios, pagers, and satellites.
4.   The capacity of … networks has grown very rapidly and they can carry a mix of voice, data, text and pictures.
5.   … cables can transmit signals in the form of pulsed beams of laser light.
6.   When a signal … its destination, the electronic signal is converted back into an understandable message.

IV.   *Fill in the blanks with the prepositions given below:*
          by, between, with, on, for, between, to, into, across, on, from, over, through

1.   Telecommunications enables people to send and receive personal messages … town, … countries, and to and … outer space.
2.   Wireless telecommunications use radio waves, sent … space from one … antenna another, as the medium …communication.
3.   Most personal computers communicate … each other and with larger networks, such as the Internet, … using the ordinary telephone network.
4.   Wire-based telecommunications provides the initial link … most telephones and the telephone network.
5.   When a signal reaches its destination, … the device the receiving end converts the electronic signal back … an understandable message, such as sound … a telephone, moving images on a television, or words and pictures … a computer screen.

V.   *Translate into English:*
          1. Спутники связи обеспечивают надежную телекоммуникационную связь с любым объектом на земле, на море и в воздухе. 2. В настоящее время вместо телеграфа широко используется факсимильная связь и электронная почта.
          3. Цифровые сигналы передаются намного быстрее, чем аналоговые.
          4. Для передачи информации на большие расстояния используется СВ – связь. 5. По волоконно-оптическому кабелю можно одновременно

транслировать несколько телеканалов и передавать тысячи телефонных разговоров. 6. Известно, что по волоконно-оптическому кабелю можно транслировать намного больше информации, чем по медному проводу. 7. По мере совершенствования телекоммуникационной техники меняются и развиваются все телекоммуникационные системы. 8. С помощью телекоммуникационных средств связи люди могут обмениваться информацией в пределах одного города или страны, между городами или странами, а также с космическими объектами, если они могут посылать и принимать радио сигналы. 9. Средства телекоммуникации – это приборы и системы для передачи электронных сигналов на большие расстояния.

Text Comprehension Exercises

I. *Listen to the text "Telecommunications" and answer the following questions*
1. What basic network components is telecommunications comprised of?
2. What does telecommunications usually involve?
3. How does telecommunications work?
4. What technologies does telecommunications without wires use?

II. *Listen to the text again and say which of the following replies is correct*
1. Telecommunication devices convert different types of information into:
a. electromagnetic waves; b. electronic signals; c. radio waves.
2. When a signal reaches its destination, the device on the receiving end converts the electronic signal back into an: a. illegible; b. original; c. understandable message.
3. These impulses are then sent by wires, radio waves, or other media to a receiver that: a. encodes; b. decodes; c. changes the modulation.
4. Cable television provides hundreds of video: a. channels; b. programs; c. signals to subscribers.
5. The satellites receive transmissions from Earth and transmit them back to numerous Earth station: a. transmitters; b. switches; c. receivers.

Text Exercises

I. *Read the text and find in it English equivalents of the following words and word combinations*
Коммутация, реципиент, волоконно-оптический кабель, сотовый телефон, обеспечивать, гибкость, спутник, программное обеспечение, средства доступа, объем информации, способ передачи информации, отражать, первоначальное средство, медный провод, телевизионный канал, исходное сообщение, телефонный разговор, движущаяся картинка, средство передачи.

II. *Read the text and answer the following questions*
1. What types of information do telecommunications devices convert?
2. What are telecommunications media?
3. What constitutes user equipment?
4. What is switching?
5. What form of transmission is known as analogue?
6. What are the advantages of fibre-optic cables and digital transmissions?
7. How does wireless telecommunications work?
8. What characteristics of communications satellites as a form of telecommunications are important?

III. *Agree or disagree with the following statements, in your answers use the standard expressions of agreement or disagreement*

1. Telecommunications only includes devices to provide reliable telephone communications. 2. Telecommunications devices convert sound and video information into electronic signals. 3. Telecommunications enables people to maintain contacts across town, between towns and countries, and to or from any flying or sailing object. 4. Any telecommunications system is a network of cables, wires, switching or broadcasting stations. 5. Radio waves were the original media for telecommunications. 6. Fire-optic cables were the first to be used in the telephones of the last century. 7.Wireless communication offers increased mobility and flexibility. 8. Communication satellites are used only for weather forecasting purposes.

IV. *Develop the following ideas, use the words and word combinations provided in brackets*

1. Telecommunications system enables people to communicate with each other (electronic signals, to transmit, across long distances, to send and receive messages, a sender, a recipient, media, devices, systems, to convert information, to reach its destination, an understandable message, to enable, etc.).
2. Telecommunications involves 3 basic network components (to access the network, user equipment, transmission, switching, to provide a means of, huge amounts of data, hierarchy of local, long-distance and international switches, to connect, etc.).
3. Telecommunications makes use of different types of media to transmit messages (original messages, wires and cables, coaxial cables, switching stations, fibre-optic cables, radio waves, cordless phones, cellular radiotelephones, cable television, telephone system, cable television, wireless communication, to provide hundreds of video channels to subscribers, to transmit several TV channels, thousands of telephone conversations, walkie-talkies, etc.).
4. Wireless communications offers increased mobility and flexibility (examples of devices, television, radio, cellular radiotelephones, to operate by modifying electronic signals, the medium of communication, radio waves, micro waves, telephone companies, analogue transmission, to use, to send signals over long distances, to transmit digital information, digital networks, computers, to carry a mix of voice, data, text and pictures, etc.).
5. Communications satellites transmit telecommunications all over the globe (without any need, network, wires and cables, located far from each other, ship, airplane and land navigators, to determine one's geographic location, to receive signals from satellites, etc.).

III. *Extend the following statements, use the text for your reference*

1. Telecommunications involves a sender of information, recipients and transmitting media.
2. Telecommunications networks have 3 basic hardware components.
3. Wires and cables are original media for telecommunications.
4. Wireless telecommunications uses modern technologies.
5. Digital information transmission has many advantages over analogue transmission.
6. Telecommunications satellites further enhance telecommunications application.

IV. Speak on:
1. the telecommunications definition;
2. the telecommunications networks;

3. the telecommunications media;
4. the types of telecommunications;
5. modern advances in telecommunications.

PART II. Conversation: I Major in Telecommunications

Standard Phrases

Hi, how are you doing**?**	Привет, как дела?
Just fine	Нормально
Not bad, thanks. Any news?	Неплохо,спасибо. Что нового?
Nothing much	Ничего особенного
Can you explain to me what made you major in telecommunications? Ты можешь мне объянить,что заставило тебя сециализироваться по телекоммуникации?	
I see, but it means…	Ясно, но это значит…
As far as I understand	Насколько я понимаю
Nothing of the kind	Ничего подобного
In my opinion	По моему мнению
It sounds ridiculous!	Это смешно!
With less rhetoric	С наименьшим пафосом
It has captured the imagination	Он овладел воображением
Thanks, anyway	Тем не менее, спасибо
I must be off	Я должен идти

Exercises

I. Complete the missing phrase in the following short conversations

a) - Hi, Pete, how are you doing?
- …, and you?
- Not bad, …. Any …?
- Nothing much.

b) - As … , telecommunications deals with the telephone system.
-… The telephone is only a part of the telecommunications system.

c) - I've never thought of that. In my …, the word telecommunications came from communicating by telephone.
- Oh, no. It sounds …that you don't know what telecommunications means!

d) - Well, I think computer, … rhetoric, is the most interesting development of our time.
- It certainly is. Computer has … of millions of people.

e) - I have never thought of the Internet as telecommunications…Thanks, … for telling me, and I …off. Bye.
- Bye.

II. Translate the following conversations into English using standard phrases
a) - Привет, как дела?
- Нормально, а у тебя?
- Неплохо, спасибо! Что нового?

- Ничего особенного. Извини, я должен идти.

b) - Насколько я понимаю, ты изучаешь компьютер?
- Ничего подобного, я специализируюсь по экологии, но знание компьютера нам тоже нужны.

c) - Я никогда об этом не думал, но по-моему, интернет помогает мгновенно получить доступ к информации (to access information instantly).
- Мгновенно!? Ничего подобного. Возможно, это звучит смешно, но с нашими линиями связи на это требуется много времени.

d) - Ты знаешь, мысль купить новый компьютер полностью овладела моим воображением. Я не могу больше работать на старом.
- Ясно. Это значит, что тебе нужны деньги, которых у тебя нет и не будет.

III. *Listen to the conversation " **I Major in Telecommunications** " and answer the following questions*
1. Who is Pete talking to?
2. What's Pete's major at the University?
3. What new technologies does telecommunications embrace?
4. Why is telecommunications a very promising field of electronics engineering?
5. Where in Nick's opinion did the word telecommunications come from?
6. What is the most interesting development of our time?

IV. *Listen to the conversation " **I Major in Telecommunications** " and imitate the speakers' pronunciation*

I Major in Telecommunications

- Hi, Pete, how are you doing?
- Just fine, and you, Nick?
- Not bad, thanks. Any news?
- Nothing much, except, maybe, the fact that now I am a student of the faculty of telecommunications of the Belarusian State University of Informatics and Radioelectronics.
- Good University! But why telecommunications? Can you explain to me what made you major in telecommunications?
- It's the most promising field of electronics engineering today, telecommunications allows people around the world to contact one another, to access information instantly and to communicate from remote areas.
- I see, but it means, you'll have to work all your life in a telephone exchange?
- Why there?
- Because, as far as I understand, telecommunications deals with the telephone system and all telephone-related equipment.
- Nothing of the kind. The telephone is only a part of the telecommunications system. Telecommunications embraces fax, e-mail, pager communications as well as radio, television, Global Orbiting Navigation Satellite systems, computer and other digital technologies.
- I've never thought of that. In my opinion, the word telecommunications came from communicating by telephone.
- Oh, no, no. You live in the 21 century, don't you. You often say you can't live without the Internet and you don't know what telecommunications means! It sounds ridiculous!

- Well, leave the Internet alone. With less rhetoric, it is the most interesting development of our time, it has certainly captured the imagination of millions of people…But I have never thought of the Internet as telecommunications…Thanks, anyway for telling me, and I must be off. Bye.
- See you.

Notes

Telephone-related equipment	оборудование для телефонной связи
To embrace	охватывать, включать в себя (зд.)
Leave the Internet alone	(зд.) оставь Интернет в покое

V. *Memorize and play out the conversation "I Major in Telecommunications"*

VI. *Role-play the following situations*
   a) Two friends discuss the advantages of taking telecommunications at the University
   b) Two friends discuss the role of the Internet in their lives

PART III.   Supplementary Reading

I. *Read the text "A Look to the Future" and say what it is about*

Global communications is becoming more and more intensified through electronic media facilitating trade contacts and international projects. The key words for the future are multimedia and mobile telecommunications. Multimedia communications is based on the traditions of both telecommunications and information technologies.

Now computers are able to do all kinds of telecommunications, telephone, data transfer and videophone communications and e-mail, when the computer contains a modem and is connected to the telephone network. Teleshopping and telebanking are also possible. Today and especially tomorrow you can do everything from home. The only problems are now the transmission speed of networks, especially telephone network. Therefore, it is necessary to build a new or a better second world-wide network along with the existing telephone network.

World-wide industrialized nations are deploying the Integrated Services Digital Network (ISDN). That offers speeds of more than a megabit per second using special copper and fibre-optic wire. Researchers, consumer video services and network element providers will have collaborated to create a comprehensive platform for the interactive video services delivery to consumers' homes via standard television. These services will include movies on demand, interactive television, teleshopping, telebanking, databases and videophone. One cable to the home or one network for all is the target of this development. The origin of this fever was the Internet. The Internet can carry these real-time traffic types, to a limited degree today, to a larger degree tomorrow. And the new communications system will able to contain all of these features.

Now, the researchers have to solve the problems of connection between different networks. There are LANs (local-area-networks) and WANs (wide area networks) and these networks will be able to be connected together. Network externalities are essential; that is, the recruitment of end users, the compatibility of signal protocols and electrical interfaces, and the reliability and full-time availability of the infrastructure. If we want to build a world-wide network with the same coherence as the telephone network, then we need an international organization for standardization of the protocols.

Also necessary is fault-tolerant software and the possibility for customers to define services and manage them in a supportive environment. The network operator will

manage each desktop component of customer equipment separately, offering transparent client and server computing through network services. The concept of self- provisioning lets customers buy network capacity like electricity. Just plug in.

The cable industries together with the satellites are the major players in the development of networks. The two components (terrestrial and satellite) must be as closely integrated as possible. Networks need transmission routes which enable fast transmission speed with less loss in efficiency. The wire of the future will be the fibre-optic wire. That new optic wire enables transmission speed of 10 Gb/s.

Mobile communications will play a major role in the future too. It will be cheaper than today and used by more public people. The mobile systems (cell phones with notebook) provide a wide variety of services, possibly the same set of services as the fixed network and with the same quality. Communications will be possible from every point in the world.

However, we should not forget that this new communications technique does not only bring us advantages. Networking incorporates isolation of the user. Important social values such as tolerance, sense of community, responsibility and personnel development could be shifted into the background, the perception will be strongly manipulated and, as a result, the picture of the reality.

Notes

deploy — развертывать

delivery — поставка, доставка, передача

real-time — производимый в реальном времени

externality — внешняя сторона, внешность

recruitment — наем, набор

end user — конечный пользователь

availability — доступность

fault-tolerant — нечувствительный к повреждениям, отказоустойчивый

supportive environment — вспомогательная среда

background — задний план, фон

II.   Answer the following questions
1.   What are the key words for the future development of global communications?
2.   What has become possible with the use of computers?
3.   Are there any problems of networks? What is the solution?
4.   What does the Integrated Services Digital Network offer to its users?
5.   What problems of connection between networks are to be solved?
6.   What components are important for the development of networks?
7.   New communications technique has some disadvantages, hasn't it? What are they?

III.   Think and make up the list of pros and cons of communications techniques. Exchange your ideas with your group mates.

PART IV.   Speech Exercises

I.   Pair work
- Imagine you are speaking with your former school mates, try to persuade them to enter your university and choose exactly your specialty.
- Interview your friend and ask him why he decided to be an electronics engineer majoring in telecommunications.
- You are choosing your major. You get a lot of contradictory advice from the University graduates. Whose advice will you follow? Why?

II. *Develop the following situations*

- Both graduate and undergraduate students work in the laboratories of the University. What laboratory would you like to work in? And why? What equipment is necessary for a modern laboratory?
- You are at a meeting of the Students' Scientific Society. Discuss possible effects of technological developments over the next two decades. What areas will be the key sectors?

III. *Write down a letter to your English friends about your specialty.*

IV. *A delegation of students and teachers from Oxford is on a visit to your University. You are asked to tell the guests about your Faculty.*

V. *Here are some viewpoints on "How to better train specialists". Sometimes they are contradictory. Discuss and criticize them. Give your arguments for and against. You may use the hints given below.*
   d) Universities, especially technical ones, should admit more young people with practical experience in industry. Evening and correspondence faculties should be expanded.
   e) The basic principle of a university should be to provide academic training in close cooperation with research institutes, design bureaus and industry.
   f) Students should take part in research work performed at the university as it provides a broad and solid foundation for professional knowledge.

D. ECONOMICS AND MANAGEMENT

Part I.   Text I: The Faculty of Economics

Economics and Management

Text 1: The Faculty of Economics

Economics analyses what, how and for whom society produces. The central economics problem is to reconcile the conflict between people's virtually unlimited demands with society's limited ability to produce goods and services to fulfil these demands.

Economics is about everyday and topical issues: unemployment and its social consequences and psychological effects on those personally experiencing it? Price inflation and its effects on different income groups in the society, the problem of payments, the slow rate of growth of the country economy, the control of resource exhaustion and environmental pollution. Economics is concerned with the measurement and communication of information relating to the management of enterprises, it is aimed at satisfying the decision needs of interested parties both within and outside those enterprises. Economics is not simply about technical efficiency, it is about the just efficient distribution of national income.

No wonder that studying economics has become very popular with young people of our country. Thousands of school leavers make their choice in favour of economics. So, in 1994 it was decided to organize the Faculty of Economics at our university which is still the youngest one in the university. The laboratories and the departments of the faculty are equipped with modern teaching facilities, which are available for advanced work across the

whole spectrum of economic research from micro, mini to mainframe computers. Professors, associate professors and experienced teachers of the university including those of the specialized departments of economics, management and economic information processing technologies teach and lecture at the faculty.

Economic studies cover a broad spectrum of knowledge: economics, accounting, industrial relations and economic statistics, business finance, monetary theory, development economics, regional and labour economics, etc. Moreover, courses combining economics with science subjects – physics, chemistry, computational science, mathematics, operational research and data processing are available.

Teaching is by lectures and tutorial classes, lab works and course papers. The principal method of assessment is by oral examinations held at the end of each term. Degree assessment is based on the final examinations and performance in the project work. Practical training can be obtained during field practice in industry before graduation.

The graduates of the faculty combining the study of economics with engineering subjects have a wide range of employment opportunities in government, in private and state sectors, in industry and commerce as managers, accountants, lecturers and researchers. Their relatively high level of numeracy and analytical ability is particularly attractive to employers. The graduates are competent to solve a wide range of problems concerning major objectives, they are capable specialists in modern techniques of processing economic information. This enables them to work in banks, insurance and financial companies, firms engaged in developing software products for economic and financial purposes.

The faculty maintains scientific and educational contacts with other Belarusian universities, with Russian and German universities. Thanks to friendly relations with the Wuppertal Technical University, the best students of the BSUIR may have their probation training in Wuppertal (Germany).

A. Active Vocabulary
Nouns and Noun Phases
assessment – оценка, аттестация
consequence - последствие
efficiency – действительность, эффективность; производительность
facility – оборудование, аппаратура
issue - издание; вопрос; результат
tutorial classes – практические занятия

Verbs and Verbal Phrases
be concerned with – быть связанным с чем-либо, быть обеспокоенным чем-либо
experience – испытывать, знать по опыту
graduate from – оканчивать (учебное заведение)
provide (with) – снабжать, обеспечивать
reconcile (with,to) – примирять, согласовывать
relate (to) – относиться, иметь отношение
satisfy – удовлетворять, соответствовать

Adjectives
efficient – действительность, эффективный; умелый
just – справедливый, обоснованный
topical – актуальный; тематический ; местный

B. Passive Vocabulary

associate professor - доцент
course paper – курсовая работа
definition – определение;
field practice – производственная практика
instruction manual - инструкция
numeracy – зд. способность к количественному мышлению;
probation – испытание, стажирование

Class Vocabulary Exercises

I. *Repeat and translate into Russian*
    a) the following words with the stress on the first syllable:
    reconcile, conflict, virtually, issue, consequence, measurement, enterprise, satisfy, tutor, graduate, software, hardware, topical, commerce
    b) *the following words with the stress on the second syllable*:
    analysis, experience, produce, demand, ability, concern, decision, performance, efficiency, facilities, assessment, obtain, numeracy, probation, maintain
    c) the following words and word combinations with two or more syllables:
    mainframe computer, opportunity, graduation, probation period, course paper, instruction manual, be satisfied with, satisfy needs, topical issues

II. *Repeat and translate into Russian the following sentences*
    1. Economics analyses what, how and for whom society produces. 2. Economics is about everyday and topical issues. 3. The laboratories of the faculty of economics are equipped with modern teaching facilities. 4. The principal method of assessment of students' knowledge is by oral examinations held at the end of each term.
    5. Degree assessment is based on the final examinations and performance in the project work. 6. The graduates of the faculty have a wide range of employment opportunities in government, in private and state sector, in industry and commerce. 7. Their relatively high level of numeracy and analytical ability of our graduates is particularly attractive to employers.

III. *Form and translate into Russian*
    a) nouns of the following verbs using the suffixes: - tion, - ion, - ing, - ment, - e (ance)
    define, produce, reconcile, pay, exhaust, measure, relate, satisfy, decide, distribute, educate, process, asses, perform, graduate, govern, insure, create, contribute, maintain
    b) adjectives from the following nouns and verbs using the suffixes: - al, - ing, - ive, - ic, - ly
    top, society, psychology, person, environment, nation, region, relate, process, tutor, principle, practice, manager, attract, finance, create, science, education, friend

IV. *Arrange the words of the two groups in pairs with similar meaning*
    a) assessment, consequences, graduate, issue, to provide, performance, exhaustion, unemployment, data, to be concerned, facilities, to satisfy, advanced, to educate, to maintain
    b) final-year student, to supply, evaluation effects, lack of employment, problem, to balance, information, complete consumption, efficiency, to worry, the best, to support, equipment, to please, to teach

V. *Arrange the words of the two groups in pairs with contrary meaning*
   a) sense, experience, to reconcile, conflict, supply, to obtain, payment, graduate, topical, to satisfy, efficient, advanced, exhaustion, competent, major
   b) inefficient, abundance, ignorant, minor, nonsense, ignorance, to argue, agreement, demand, to lose, debt, first-year student, unsubstantial, to displease, backward

VI. *Make up your own sentences using the following words and word combinations*
   Everyday and topical issues, to reconcile the conflict, the youngest faculty, to be equipped, to educate, to cover a broad spectrum of knowledge, assessment, employment opportunities, attractive, competent, capable, to maintain, advanced students

Special Difficulties

I. *Remember the use of **to make and to do**. Organize these words into two columns using either **make or do***
   A suggestion, a profit, an equiry, an appointment, an excercise, progress, a favour, the typing, damage, money, a decision, a speech, business, research, an investment, a plan, a report, a job, a complaint

II. *Say which of these sentenses are correct?*
   1. The Chairman made a long speech. 2. He said the company did a good profit in the year. 3. The shareholders could do a choice between independence and prosperity or the uncertainty of being taken over by a large multinational giant. 4. He believed that independently the company could still make progress. 5. Those who recommended selling shares were making a big mistake.

III. *Now complete the following sentences with an appropriate form of **to make** or **to do***
   1. We … mistake of setting up a joint venture. 2. He … the job of importing goods from the Far East. 3.The goverment … us register the company locally. 4. He … very well to establish the business. It's a pity he didn't … more money. 5. In order to … this work, we have to … a lot of research. 6. The bank has decided to … extra provision against bad debts this year. 7. We have … a considerable profit on the sale of that land. 8. A customer has … a complaint about one of the salespeople. 9. In fact, rhey have … us a favour by launching their product first. 10. Please … your best to get these typed before 5 o'clock.

Home Vocabulary Exercises.

I. *Arrange the following words into your own sentences*
1. the university, the, is, facutly, youngest, in, the, economics, of, faculty.
2. 1994, was, it, organized, in
3. cover, a broad spectrum, economic, knowledge studies, of
4. a wide range, the of, faculty, the, graduates, of, have, opportunities, employment.
5. method, the, assessment, of, principal, is, oral, by, examinations
6. maintains, scientific, the, educational, and, contacts, faculty, other, with, universities.
7. advanced, have, probation, had, some, in, students, the, Germany, BSUR, of, Wuppertal, in, their.

II. *Fill in the blanks with the words given below*
1. Economics is about everyday and topical…
2. Courses combining economics with science-subjects…
3. The … of graduates' knowledge is by the final examinations and performance in the
   … .
4. Practical training can be obtained during field practice before ….
5. The … are competent to solve a wide range of problems … major objectives.
6. The laboratories and the deparments of the faculty are equipped with modern
   teaching ….
7. Economics … graduates with a very necessary training for management.

graduates, assessment, provides, facilities, are available, issues, project work,
graduation, concerning

III. *Fill in the blanks with the prepositions given below*
1. Economics is concerned … efficient distribution … national income.
2. Economics is aimed … solving the problem … balance … payment.
3. Modern facilities … the faculty of economics are available … advanced work and
   research.
4. Teaching is … lectures and tutorial classes, lab works and course papers.
5. The principal method … assessment is … oral examinations held … the end … ech
   term.
6. Modern computers are available … the students.
7. The graduates of the economic faculty can work … banks, … insurance and
   financial companies, … firms engaged … developing software poducts … economic
   and financial purposes.

for, at, for, in, for, for, at, with, of, of, by, for, of, out, at, of, by, of, of

IV. *Translate into English*
1. Экономический факультет – самый молодой факультет университета. 2. Он
был создан в 1994 году. 3. Лаборатории и кафедры факультета оснащены
современными техническими средствами обучения. 4. Выпускники факультета
подготовлены для решения широкого круга задач, они имеют хорошую
подготовку по современным методам обработки экономической информации.
5. Они могут работать на предприятиях, в банках, страховых и финансовых
компаниях, на фирмах, занимающихся разработкой программной продукции.
6. Изучение экономики охватывает широкий спектр знаний.

Text Comprehension Exercises.

I. *Listen to the text "**The Economic Faculty** "and answer the following questions*
1. Economics is about everyday and topical issues of our life, isn't it?
2. What is economics concerned with?
3. When was the economic faculty set up?

II. *Listen to the text again and say which of the following replies is correct*
1. Economics analyses a) what, how and for whom society produces, b) the state of
   education, c) the policy of the state.

2. Economics is not simply about technical efficiency, it is about a) bringing up children, b) the just efficient distribution of national income, c) the weather of the country.
3. The economic faculty is a) the most difficult faculty, b) the most advanced faculty, d) the youngest faculty.
4. The relatively high level of numeracy and analytical ability of the graduates are attractive to a) spectators, b) fans, c) employers.
5. They are capable specialists in a) modern techniques of processing economic information, b) writing poems, c) teaching school students.
6. The principal method of assessment of students' knowledge is by a) the amount of visited classes, b) the appearance of the students, c) oral examinations.

Text Exercises

I. *Read the text and find in it English equivalents of the following words and word combinations*
Практический опыт, неограниченный спрос, ограниченная способность, производить товары и услуги, психологический эффект, баланс платежей, истощение ресурсов, передача информации, справедливое и эффективное распределение национального дохода, современное обучающее оборудование, обработка данных, привлекательны для работодателей, современные технологии

II. *Read the text and answer the following questions*
1. Is it easy to give definitions to economics? 2. What is economics about? 3. Is studying economics useful for future enginieers? 4. What courses are available at the faculty? 5. What are the employment opportunities of the faculty graduates? 6. What techniques of teaching are applied in the university? 7. What are the assessment methods? 8. Are modern teaching facilities available for students?

III. *Agree or disagree with the following statements*
1. It's not difficult to understand what economics is about.
2. The central economic problem is to reconcile the conflict between people's unlimited demands with society's limited ability to produce goods.
3. Economics is aimed at solving the problem of balance of payments.
4. The economic faculty doesn't offer its students other subjects or courses.
5. Economics broadens the educational base of an engineer.
6. Economic faculty graduates have a wide range of employment opportunity.
7. Resource exhaustion and environment pollution are not economic issues.

IV. *Develop the following ideas, use the words and word combinations provided in brackets*
1. Economics is about everyday and topical issues. (unemployment, its social consequences; price inflation; of, the problem, balance of payments, the slow rate of the country economy; the control of resource exhaustion, and, and, national income, environmental pollution, just, of, efficient, distribution).
2. The Faculty of Economics is very young (the youngest faculty; 1994; modern teaching facilities; the teaching staff; advanced work; economic research; economic studies; science subjects).
3. Employment opportunities of the graduates of the faculty are very high (a wide range of; high level of numeracy, and, analytical ability; attractive to employers; in government, in private and state sector; competent to solve, capable specialists in).

4.   Methods of assessing the students' performance and knowledge are different (oral examinations; degree assessment; final examinations; course papers; project work; field practice).

V.   *Extend the following statements, use the text for your reference*
1.   Economics is based on the facts of our everyday life.
2.   The Faculty of Economics is the youngest faculty in the university.
3.   The faculty offers the students a great variety of economic and engineering courses.
4.   Modern teaching facilities are available for advanced work across the whole spectrum of economic research.
5.   The faculty maintains scientific and educational relations with many universities.

VI.   *Speak on:*
1.   the science of economics,
2.   the Faculty of Economics,
3.   the employment opportunities of its graduates,
4.   scientific and educational contacts of the faculty.

Text II: What is Economics

One of the things that young people discover as they grow older is that you can't have everything. You are reminded of it every time you go shopping. Although there are a lot of goods on sale you have to limit your selection to one or two. Everyone goes through life having to make choices.

Every business, every government must pick up and choose from among the things they would like to have because they can't have everything. Every year the most important political debates focus on questions about spending taxpayers' money. Neither individuals, nor societies can have all the things they would like to have.

Economic issues have occupied people's minds throughout the ages. Economists notice that there is no restriction to the amount or kinds of things people wish to purchase. But still there is a limit to the resources used to produce goods and services available to satisfy people's wishes and needs. In other words when a nation's resources are completely employed, the only way to increase the production of one thing will be reducing production of something else.

In the process of making choices people, governments will try to economize, to get the most from what they have. Taking this fact into account we can define economics as the social science that reveals and analyses how society chooses from among scarce resources to satisfy its needs. In other words economics is the science that deals with production, distribution and consumption of commodities, while economy is a careful or thrifty use or management of resources, such as income, materials or labour.

Why should we study economics? There are several very good reasons, all of which involve us. Some of them have to do with us as individuals, some with us as earners or as spenders, some with us as citizens and finally as future economists. As members of the society we live in, there is no escaping economics. The food we eat, the dwelling we live in, the clothes we wear and the way we spend our leisure time are all affected by economic forces. Economic forces also influence decisions in the world of business. In fact one common definition of economics is "the study of how people make living". The more you get informed of the subject, the better career decisions you'll be able to make.

Economics will also be helpful in performing your responsibilities as a citizen in a democracy. As a voter you'll be asked to express your opinion on many subjects involving economic issues. The study of economics will help us to deal with such subjects intelligently.

We have seen that economics deals with the problems of scarcity and choice faced by societies and nations throughout history, but the development of modern economics began in the 17th century. Since that time economists have developed methods for studying and explaining how individuals, businesses and nations use their available economic resources. Large corporations use economists to study the ways they manage businesses and to suggest methods for making more efficient use of their employees, equipment, factories and other resources. Governments also employ economists to study economic problems as well as way to solve them.

Economics is a social science concerned with the production, distribution, exchange, and consumption of goods and services. Economists focus on the way in which individuals, groups, business enterprises, and governments seek to achieve efficiently any economic objective they select.

Standard economics can be divided into two major fields. The first, price theory or microeconomics, explains how the interplay of supply and demand in competitive markets creates a multitude of individual prices, wage rates, profit margins, and rental changes. Microeconomics assumes that people behave rationally. Consumers try to spend their income in ways that give them as much pleasure as possible. As economists say, they maximize utility. For their part, entrepreneurs seek as much profit as they can extract from their operations.

The second field, macroeconomics, deals with modern explanations of national income and employment. Macroeconomics dates from the book, *The General Theory of Employment, Interest, and Money* (1935), by the British economist John Maynard Keynes. His explanation of prosperity and depression centers on the total or aggregate demand for goods and services by consumers, business investors, and governments. Because, according to Keynes, inadequate aggregate demand increases unemployment, the indicated cure is either more investment by businesses or more spending and consequently larger budget deficits by government.

Notes:

there is no escaping economics – от экономики никуда не спрячешься
dwelling – жилище, дом   cure - лечение
resources are completely employed – ресурсы задействованы полностью

Active Vocabulary
Nouns and Noun Phrase

definition – определение чего-либо
in fact - фактически
in other words – иными словами
responsibility – ответственность, обязанность
restriction – ограничение
the only way – единственный способ

Verbs and Verb Phrases

affect smth. – влиять, повлиять на что-то, оказывать воздействие
assume –допускать, предполагать
be helpful in doing smth. – быть полезным в выполнении чего -либо
deal with – иметь дело с
extract from - извлекать
express one's opinion on smth. – выражать свое мнение о чем-то
face a choice/ a problem – стоять перед выбором/ проблемой, сталкиваться с
get the most from smth. – выжать из чего-либо все возможное
influence – влиять на
involve – включать, вовлекать

make choices – делая выбор
make living – зарабатывать на жизнь
remind of - напоминать
reveal – выявлять
seek – стремиться, искать
select - выбирать
suggest smth. – предложить что-либо
take smth. into account – брать что-либо в счет, считаться с чем-то
wear clothes – носить одежду

Adjectives

available - доступный
common –общий, общепринятый
competitive – конкуретный, конкуренто способный

Adverbs

consequently -соответственно

D. Passive Vocabulary

occupy people's minds – занимать умы людей (человечества);
prosperity – процветание
scarcity – недостаток, нехватка (of), редкость

C. Special Terminology

commodities – товары, предметы потребления
consumer – потребитель; consumption – потребление
distribution – распределение
earner – лицо, получающее зарплату
economic forces - факторы экономики
economic resources –экономические ресурсы
entrepreneur - предприниматель
income – доход
produce goods and services – производить товары и услуги
profit margin – размер прибыли
purchase – покупка, приобретение
rental charges – плата за квартиру
spender – растратчик
supply and demand – спрос и предложение
taxpayer –налогоплательщик
utility –полезность, выгодность
voter - избиратель
wage rates – размеры зарплаты

Class Vocabulary Exercises

I.   *Repeat and translate into Russian*
    a) the following words with the stress on the first syllable:
        purchase, earner, citizen, spender, labour, influence, goods, services, method,
        issue, cure, common, careful, profit, aggregate, government, consequently
    b) the following words with the stress on the second syllable:
        affect, develop, suggest, employ, involve, reveal, economist, produce, resource,
        available, depression, remind, assume, perform, select, extract, competitive,
        utility, prosperity
    c) the following words with two or more stresses:
        economize, satisfy, definition, enterprise, microeconomics, take into account,
        make choices, perform responsibilities, in other words, entrepreneur, wage

rates, rental charges, unemployment

II.   *Repeat and translate the following sentences*
1. Economic issues have occupied people's minds throughout the history. 2. In the process of making choices people and governments try to economize. 3. People try to get the most from what they have. 4. There is a limit to the resources used to produce goods and services. 5. There are a lot of goods and services available to satisfy people's wishes and needs. 6. As members of the society we live in, we deal with its economic issues every day. 7. Economics is a social science concerned with the production, distribution, exchange, and consumption of goods and services.

III.   *Form and translate them into Russian*
a) nouns of the following verbs using the suffixes, -ion, -ment, -ing
communicate, develop, govern, explain, depress, define, live, equip, restrict, affect, invest, distribute, produce, shop, select, satisfy, dwell, manage
b) nouns of the following adjectives using the suffixes -(e)ance, -ity, -y, -e, -ion, -s
rental, economic, distributive, scarce, consequent, competitive, available, selective, influential, helpful, restrictive, responsible, definite, productive, managerial, exchangeable

IV.   *Arrange the words and word expressions of the two groups in pairs with similar meaning*
a) satisfy, enterprise, prosperity, consumption, income, opinion, efficient, reveal, aggregate, employ, thrifty, escape, dwelling, throughout, objective, affect, utility, entrepreneur, extract
b) make pleasure, good fortune and success, goal, use, salary, point of view, effective, businessman, take out, lack, company, house, during, discover, total, use, get away from, influence, facility

V.   *Arrange the words of the two groups in pairs with contrary meaning*
a) profit, earner, produce, demand, poverty, activity, goods, exchange, restrict, efficient
b) change, inefficient, depression, prosperity, supply, destroy, spender, loss, services, allow

VI.   *Make up your own sentences using the following words and word combinations*
to get the most from smth., satisfy one's needs, go through life, efficient use, deal with subjects intelligently, face a choice/ a problem, influence decisions, take smth. into account, make living, efficient use, go through life, satisfy one's needs, to get the most from smth., to economize, consumption, management of resources, resources are completely employed, distribution and consumption of commodities, available economic resources, profit margin, economic issues

Special difficulties

I.   *Translate into Russian the following sentences. Pay special attention to the use of*
neither …, nor …
1. Neither the employees, nor their boss know all the details of the company's promotion strategy. 2. Neither the first, nor the second candidate has made any impression on the voters. 3. What's your opinion on the issue discussed ? – In my opinion, neither profit margins, nor economic resources were properly identified.

II. *Choose and use the words **have/ have to**.*
1. The manager … a pretty busy schedule for today. 2. Do I … analyze the incoming mail in, Sir? 3.What are the responsibilities in this job? What will I … do? 4. If you … any ideas concerning this brand name promotion, you'll … share them with us… 5. It's quite easy … this work done. You just … make some instructions to the staff.

III. *Turn the following sentences from the Active into the Passive Voice and translate them into Russian:*
1. Economic issues have occupied people's minds throughout the ages.
2. Entrepreneurs seek as much profit as they can extract from their operations.
3. Economists have developed methods for studying and explaining how individuals, businesses and nations use their available economic resources.
4. Governments also employ economists to study economic problems as well as ways to solve them. 5. Large corporations use economists to study the ways how to manage businesses most efectively and efficiently. 6. Economic forces also influence decisions in the world of business.

Home Vocabulary Exercises

I. *Arrange the following words into your own sentences:*
1. The, management, authorities, or, made, of, resources, is, by, the, government.
2. There, a, of, limit, are, on, to, sale, you, but, have, your, goods, selection, lot.
3. We, get, the, most, positions, from, should, our, situation, the, to regain.
4. People, have, economic, by, occupied, always, been, issues. 5. Economic, are, wishes, people's, to, and, demands, satisfy, used, resources. 6. What, supply, forces, and, economic, demand, influence?

II. *Fill in the blanks with the words given below:*
1. Economics is the science that deals with … , … and … of commodities. 2 … try to spend their income in ways that give them as much pleasure as possible. 3. The more you get informed on the subject, the better … decisions you'll be able to make. 4. Inadequate aggregate … increases unemployment. 5. … suggests modern explanations of national income and employment.

Production, consumers, distribution, income, demand, consumption, macroeconomics, economic

III. *Fill in the blanks with the prepositions given below:*
On, up, with, from, in, for
1. To get the most … this situation you should deal … our executive director.
2. The government must focus … the question how to spend taxpayers' money more efficiently. 3. Knowledge in economics is very helpful … performing the duties of executive director. 4. Could you suggest any ways … making our budget more profitable. 5. This house is … sale.

III. *Translate into English:*
1. Экономисты заметили, что не существует предела количеству и разновидностям товаров, которые люди хотят купить. 2. Другими словами, национальные ресурсы полностью задействованы, и единственным способом увеличить производство какого-нибудь товара будет сокращение производства какого-нибудь другого товара. 3. Принимая решения, люди и

правительства стараются экономить. 4. Экономика – это наука о проблемах производства, распределения, обмена и потребления товаров и услуг. 5. Большие корпорации пользуются услугами экономистов для изучения способов ведения бизнеса и разработки методов более эффективного использования своих служащих, оборудования, фабрик и других ресурсов. 6. Макроэкономика ведет свое начало с книги известного английского экономиста Кейнса «Общая теория занятости, капиталовложений и денежных средств».

Text Comprehension Exercises

I.   *Listen to the text **"What is Economics?"** and answer the following questions:*
1.   What is the reason for the constant process of making choice by individuals, companies, governments?
2.   What is economics about?
3.   What is the role of economists in the development of modern societies?
4.   What are the parts of standard economics?

II.   *Listen to the text again and say which of the following replies is correct.*
   1. Economic issues have occupied people's …
      a) minds, b) hands, c) heads.
   2. There is a limit to the resources used to produce goods and services available to … people's wishes and needs.
      a) sacrifice b) make c) satisfy
   3. Economy is a careful or thrifty use or management of resources, such as … , materials or labour.
      a) fees b) income c) salary
   4. Economic … also influence decisions in the world of business.
      a) strengths b) powers c) forces
   5. The study of economics will help us to deal with such subjects … .
      a) carefully b) intelligently c) thoroughly

Text Exercises

I.   Read the text and find in it English equivalents of the following words and word combinations:
Производство, распределение, потребление, управление ресурсами, факторы экономики, предметы по потребления, размер прибыли, задействовать ресурсы, доступные экономические ресурсы, спрос и предложения

II.   *Read the text and answer the following questions:*
1. What do people discover when they grow older? 2. What are the year's most important political debates focused on? 3. What did economists notice about people? 4. What definitions can we give to the term "economics"? 5. Why should we study economics? 6. What problems does economics deal with? 7. Where can we apply our knowledge of economics? 8. What for do large corporations and governments need economists? 9. What major fields can be standard economics divided into? 10. What is microeconomics? 11. What is macroeconomics? 12. Who was the first to write about macroeconomics? 13. What was his book about?

III.   *Agree or disagree with the following statements*
1. Nowadays all young people know they can have everything. 2. Every year politicians argue on how to spend their taxpayers' money. 3. Is you seek the production of one thing you should reduce your consumption rates. 4. Economics is a political science as it reveals and analyzes the government policy. 5. We live in the society, so there's no escaping economics. 6. One of the common definitions of economics is "the study how people make money". 7. The development of modern economics dates back to the 17th century. 8. Microeconomics operates on a national level, while macroeconomics is an international science.

IV.   *Extend the following statements, use your text for reference*
Everyone goes through life having to make choices.
To increase the production of one thing means to reduce production of something else.
Economics deals with production, distribution and consumption of commodities.
We should study economics a) to know how people make living, b) to make better career decisions, b) to perform our duties as citizens.
Since the 17th century economists have developed methods to study various economic issues.
Standard economics can be divided into two fields.

V.   *Speak on:*
1.   The definitions of economics,
2.   The reasons to study economics,
3.   The role of economists in the development of modern societies,
4.   The role of microeconomics and macroeconomics.

Text III: Management

Management is the art and science of making appropriate choices. To one degree or another we are all involved in management and are constantly making decision concerning how to spend or use our resources.

Management plays a vital role in any business or organized activity. Management is composed of a team of managers who are in charge of the organization at all levels. Their duties include making sure company objectives are met and seeing that the business operates efficiently. Regardless of the specific job, most managers perform four basic functions. They are planning, organizing, directing and overall controlling.

Planning involves determining how these goals can best be achieved. Managers evaluate alternative plans before choosing a specific course of action and then check to see that the chosen plan fits into the objectives established at higher organizational levels. Planning is listed as the first management function because the others depend on it.

However, even as managers move on to perform other managerial functions, planning continues as goals and alternatives are further evaluated and revised.

Organizing, the second management function, is the process of putting the plan into action. This involves allocating resources, especially human resources, so that the overall objectives can be attained. In this phase managers decide on the positions to be created and determine the associated duties and responsibilities. Staffing, choosing the right person for the job, may also be as part of the organizing function.

Third is the day-to-day direction and supervision of employees. In directing, managers guide, teach, and motivate workers so that they reach their potential abilities and at the same time achieve the company goals that were established in the planning

process. Effective direction, or supervision by managers requires daily communication with employees.

In the last management function, controlling, managers evaluate how well company goals are being met. In order to complete this evaluation, managers must look at the objectives established in the planning phase and at how well the tasks assigned in the directing phase are being completed. If major problems exist and goals are not being achieved, then changes need to be made in the company's organizational or managerial structure. In making changes managers might have to go back and replan, reorganize, and redirect.

In order to adequately and efficiently perform these management functions, managers need interpersonal, and technical skills. Although all four functions are managerial duties, the importance of each may vary depending on the situation. Effective managers meet the objectives of the company through a successful combination of planning, organizing, directing, and controlling.

A. Active Vocabulary
Nouns and Noun Phrases
course – направление; ход; линия поведения
degree – степень
to one ~ or another – в той или иной степени
duty – (служебная) обязанность
employee – служащий
evaluation – оценка, определение
goal – цель, задача
objective – цель
skill – умение, сноровка
staff – служащий персонал
supervision – надзор, наблюдение
team – команда, бригада
Verbs and Verbal Phrases
achieve – достигать
be composed of – состоять из
be in charge of – быть ответственным за что-либо
check – проверять
complete – заканчивать, завершать
depend (on) – зависеть от чего-либо
determine – определять, устанавливать
establish – устанавливать, основывать
fit (into) – годиться, подходить
guide – руководить
involve – включать в себя, вовлекать
list – вносить в список
perform – выполнять
reach – достигать
revise – исправлять, пересматривать
vary – изменяться, разнообразить
Adjectives and Adverbs
appropriate – подходящий, соответствующий
constantly – постоянно
day-to-day – ежедневный
efficient – квалифицированный, эффективный
interpersonal – межличностный

major – основной, главный
overall – общий
vital – жизненно важный

Conjunctions

concerning – относительно, в отношении
however – однако
in order to – чтобы
regardless of – невзирая на что-либо

B. Passive Vocabulary

allocate – распределять
assign – определять, назначать
attain – достигать

Class Vocabulary Exercises

I. *Repeat and translate into Russian*
    a) *the following words with the stress on the first syllable*:
        manager, business, duty, company, vary, management, level, process, adequately, technical, overall, allocate, vital
    b) *the following words with the stress on the second syllable:*
        objective, activity, compose, determine, efficiently, controlling, require, directing, regardless, successful, assign, resource, attain, evaluate, associate, effective, alternative, importance, especially, establish
    c) *the following words with two or more stresses*:
        managerial, evaluation, responsibility, employee, organizational, interpersonal, communication, suppression

II. *Repeat and translate into Russian the following sentences*
1. Often a team of managers rather than an individual works on a particular project.
2. Most managers perform four basic functions.
3. Managers evaluate plans before choosing a specific course of action.
4. The chosen plan is to fit into the company objectives.
5. Organizing is the process of putting the plan into action.
6. Staffing is considered a managerial duty.
7. One of the roles of a supervisor is to direct workers in order to maximize their skills and increase their efficiency.
8. Managers should determine duties and responsibilities of their employees.

III. *Form and translate into Russian*
    a) *nouns of the following verbs using suffixes –ion, -ee, -ment, -er, -ation*
    manage, establish, organize, employ, achieve, evaluate, supervise, combine, associate
    b) *verbs of the following nouns*
    performance, combination, evaluation, redirection, employer, establishment, communication, guidance, achievement

IV. Arrange the words of the two groups in pairs with similar meaning
    a) guidance, achieve, skill, overall, objective, employees, charge, require, revise, team, vary, include, be composed of

b) staff, total, group, reach, check, ability, change, responsibility, staff, supervision, involve, consist of, goal

V. Arrange the words of the two groups in pairs with contrary meaning
  a) include, major, successful, employee, create, overall
  b) destroy, individual, exclude, employer, secondary, unsuccessful

VI. Make up your own sentences using the following words and word combinations
  to put into action, objective, to depend on, to be in charge of, staff, to require, ability, to include, supervision, to be composed of, to establish, to take the responsibility for smth., to achieve a goal, to make sure, regardless of, efficiently

Special Difficulties

I. Open the brackets, mind the use of the Passive Voice
  1. The objectives of the company (to meet) through a combination of four management functions. 2. After staff (to appoint), induction programs (to organize) so that new employees can fit in as efficient members of the team. 3. Planning (to list) as the first management function. 4. Last week Mr. White's duties (to revise). 5. At the moment they are discussing if the tasks (to complete). 6. As a rule applicants for jobs (to interview) before they (to employ). 7. Managers evaluate alternative plans before a specific course of action (to choose). 8. The goals (not to achieve) now so changes (to make) as soon as possible. 9. Management functions (to perform) efficiently if managers have appropriate skills. 10. Daily communication with employees (to require) to make direction effective.

Home Vocabulary Exercises

I. Arrange the following words into your own sentences
1. plays, role, a vital, management, in, business, any, or, activity, organized.
2. most, perform, managers, functions, basic, four.
3. Involves, overall, planning, company, determining, objectives.
4. organizing, of, is, the, process, the, into, plan, putting, action.
5. staffing, also, included, may, as, be, part, the, a, of, function, organizing.
6. direction, managers, effective, by, daily, with, requires, communication, employees.
7. planning, as, is, the, fisted, first, function, management.
8. the, of, importance, vary, on, may, the, depending, each, situation, function.
9. third, the, direction, is, day-to-day, of, and, employees, supervision.

II. Fill in the blanks with the words given below
  1. Over the period of three decades American manufacturing industries have ___ the ___ of their operating philosophies at the level of the manufacturing unit. 2. As the degree of education and technical sophistication of the labour force has increased, top management teams have ___ the established patterns of ___ to increase ___ communication from a one-way control mode to a two-way dialogue mode. 3. In order to ___ production targets plant managers and supervisors realize the need to ___ the workers under their direction.
      direction, guided, adequately, revised, manager, interpersonal, motivate, regardless, supervision, attain

III. *Fill in the blanks with prepositions given below*

1. The importance of each function vary depending ___ the situation.
2. Management is composed ___ a team of managers. 3. Objectives are established ___ higher organizational level. 4. All people are involved ___ management. 5. Organizing is the process ___ putting the plan ___ action. 6. They reach their potential abilities and ___ the same time achieve the company goals that were established ___ the planning phase. 7. Effective managers meet the objectives ___ the company ___ a successful combination ___ planning, organizing, directing f controlling.

<u>through, in, at, on, of, into</u>

IV. *Translate into English*

1. Менеджмент играет важную роль во всех сферах деятельности.
2. Менеджеры несут ответственность за организацию работы на всех уровнях.
3. Большинство менеджеров выполняют 4 основные функции, такие, как планирование, организация, управление и контроль. 4. Организация является процессом осуществления запланированного. 5. Эффективное управление требует ежедневного общения со служащим персоналом. 6. Чтобы правильно выполнять свои обязанности, менеджер должен обладать определенными навыками. 7. Планирование считается первым в списке, т. к. остальные функции зависят от него.

Text Comprehension Exercises

I. *Listen to the text "**Management**" and answer the following questions*
1. What is management?
2. What are main managerial functions?
3. What skills do managers need to perform their functions?

II. Listen to the text again and say which of the following replies is correct
1. a) Most managers perform 4 basic functions. b) Most managers perform 6 basic functions. c) Most managers perform 8 basic functions.
2. a) Organizing is listed as the first management function. b) Planning is listed as the first management function. c) Controlling is listed as the first management function.
3. a) In organizing, managers evaluate how well company objectives are met. b) In organizing, managers guide, teach and motivate workers. c) In organizing, managers decide on the positions to be created.
4. a) Effective managers meet the objectives of the company through a successful combination of planning and controlling. b) Effective managers meet the objectives of the company through a successful combination of organizing and directing. c) Effective managers meet the objectives of the company through a successful combination of planning, organizing, directing and controlling.

Text Exercises

I. *Read the text and find in it English equivalents of the following words and word combinations:*
выполнять функции, цели могут быть достигнуты, невзирая на, управлять, осуществлять план, служащий персонал, создавать, ежедневное руководство,

определять обязанность, адекватно, команда менеджеров, состоять из, на всех уровнях, организационные навыки

II. *Read the text and answer the following question*
1. What is management composed of? 2. What do the duties of managers include? 3. What does planning involve? 4. Who is planning the first management function? 5. What is the second management function? 6. What does the second function include? 7. Can staffing be considered as part of the organizing function? Why? 8. What do managers do in the directing phase? 9. Why is daily communication necessary for effective direction? 10. What do managers evaluate in the controlling function? 11. What should managers do to complete the evaluation in the controlling phase? 12. Which skills do managers need to perform effectively? 13. What does the importance of each function depend on? 14. How do effective managers meet the objectives of the company?

III. *Agree or disagree with the following statements, in your answers use the expressions of agreement and disagreement*
1. Only some people are involved in management. 2. Managers don't need interpersonal skills to perform their functions. 3. Staffing can be considered a part of the planning function. 4. Managers are to see that the business operates efficiently. 5. The importance of each function doesn't vary depending on the situation. 6. In the controlling function, managers evaluate how well company objectives are being met, don't they? 7. Managers are not responsible for allocating resources.

IV. *Develop the following ideas, use the words and word combinations provided in brackets*
1. Management plays a vital role in any business or organized activity (to one degree or another, to be involved, to make decisions, to use resources, to be composed of, to be in charge of, duties, to operate efficiently).
2. Planning is the first management function (to determine objectives, to achieve goals, to evaluate, alternative, to choose, to depend on, further, to establish).
3. Organizing is the process of putting the plan into action (to allocate, human resources, overall, to create positions, responsibilities, staffing, to include).
4. The third function is the day-to-day direction of employees (to guide, to motivate, to reach abilities, to achieve goals, effective supervision, to require, employees).
5. Controlling is supposed to be the last management function (to evaluate, in order to, to look at, how well, planning phase, directing, to complete, major problems, to make changes, managerial structure, to replan).
6. Managers should have different skills (adequately, interpersonal, organizational, managerial duties, to vary, effective, to meet the objective, through, successful).

V. *Speak on:*
1. the basic managerial functions;
2. the duties to be performed by managers in each phase;
3. the qualities of an effective manager.

Part II. Conversation: George is a Student of the Faculty of Economics

Standard Phrases

Hi, Peter, I'm glad to see you	– Привет, Петр, рад тебя видеть
So am I	- Я тоже
Don't you know that I'm in my second year	– Разве ты не знаешь, я на 2-м курсе
What a surprise	- Вот это сюрприз
As far as I remember	- Насколько я помню
That's true	- Верно
Frankly speaking	- Честно говоря
I was almost certain	- Я был почти уверен
First of all	- Прежде всего
To say nothing of	- Не говоря уже о
By the way	- Кстати
As a result	- В результате

Exercises

I.   Complete the missing standard phrases in the following conversations
   a)   - Hi, Ted,….
   -         …

   b)   - What are you doing at our Faculty, Kate?
   -    …
   -    …

   c)   - … , You wanted to be a programmer, didn't you?
   -      …, and I will…

   d)   - …speaking, Jim, I find our new course in modern techniques of processing economic information fantastic.
      - …here, to say… our new lecturer.

II.   Translate the following short conversations into English using standard phrases
   a) Л.:   Что ты делаешь в нашем университете, Павел?
       П.:   Разве ты не знаешь, что я уже на 3-м курсе экономического факультета.
       Вот это сюрприз. Я был почти уверен, что ты учишься в БГЭУ.

   b)   *E.:* Ты мне скажи, почему ты решил стать экономистом?
       A: Откровенно говоря меня прежде всего, интересует использование компьютеров для решения экономических задач, не говоря уже о важности этой профессии в настоящее время.
       Е.: Я с тобой полностью согласен.

III   Listen to the conversation " George is a Student of the Faculty of Economics" and answer the following questions
   1. At what faculty does George study? 2. What was Peter almost certain of?
   3. What are the advantages of studying economics at the Belarus State University of Informatics and Radio Electronics? 4. What are the laboratories of the Faculty

equipped with? 5. Where are our graduates highly reputed? 6. What can our Faculty graduates do?

IV.   Listen to the conversation **"George is a Student of the Faculty of Economics"** and read it imitating the speaker's pronunciation

Peter: Hello, George!

George: Hi, Peter! I'm glad to see you.

Peter: So am I. What are you doing at our University?

George: Don't you know that I study here. I'm in my second year already.

Peter: What a surprise! I did not expect to meet you at the University. I didn't know you were interested in electronics. As far as I remember you have always planned to become a prosperous banker.

George: That's true. And I will certainly be one, you see, I study at the Faculty of Economics.

Peter: Fantastic! But tell me why you decided to master economics at the Belarus State University of Informatics and Radio Electronics? Frankly speaking, I was almost certain you had entered the Belarus State Economic University.

George: Well, at first, I was going to. But on second thought I realized all the advantages of studying at the BSUIR.

Peter: And what are they?

George: First of all, thorough knowledge of modern hardware and software, comprehensive engineering training in the foundations of modern information technologies, statistics and mathematical methods applied in economics, to say nothing of deep knowledge of modern trends of economics and management.

Peter: I agree with you here, the graduates of the Faculty can perform various economic surveys and investment analyses and even develop software for economic or managerial needs.

George: By the way, our laboratories are better equipped with modern teaching facilities and computers than those of the Economic University.

Peter: And as a result, our graduates are highly reputed both at home and abroad.

George: The graduates of the Faculty of Economics are competent to solve a wide range of problems concerning major economic and management objectives in any enterprise. They can solve any problem arising from production and distribution of goods and services, compile data relating to employment, productivity, and wages and hours, they recommend changes in monetary policies, or policies that regulate investment and transfer of capital and so on.

V.   Memorize and play out the conversation "**George is a Student of the Faculty of Economics"**

Part III.   Supplementary Reading

Text A: The Debate on Globalization

Asia's financial crisis has started the debate over globalization. The latter is a whirlwind of trade and investment that builds economies and speeds up development in even the world's poorest nations. But it can also bring economies low overnight.

Globalization raises some of the most important issues facing humankind today. These are challenges that must be addressed at the highest level and on a continuing basis.

Globalization's effects have been overwhelmingly good. Intensified by unprecedented liberalisation; world trade continues to expand faster than overall global economic output, inducing a wave of productivity and efficiency and creating millions of jobs. Even more impressive is the stunning increase in international investment, i.e. building roads, airports and factories in poorer countries. In 1990s alone, foreign investors have poured $1 trillion into developing economies. This trade and investment is raising living standards in some countries faster than many thought possible. Until recently it took at least two generations for living standards to double, but in China, living standards now double every 10 years.

But while globalization has raised living standards for many, it has made life more difficult for those dislocated by change and it threatens to leave part of the world behind. It is no coincidence that the disappointing economic performance in much of Sub-Sacharan Africa reflects a failure to integrate into the world economy, thus, to trade successfully and attract investment.

The foremost challenge of globalization is to ensure that its fruits extend to all countries. Most forecasts say that economic growth in the developed world will continue to slow, and that expanding markets in developing countries are needed to ensure that living standards continue to rise.

The second challenge of globalization is to minimize the fear that the growth it brings is inherently destabilizing. The Asian crisis, threatening some of the most formidable economic competitors in the world, amplifies these fears. Nevertheless, the costs of being left behind by globalization are usually much greater than the losses caused by instability. The third challenge of globalization is to address the concern in wealthier countries that international competition will harm living standards. There is evidence that stagnant wages in the United States and unemployment in Europe have other causes – technological change, poor education, Europe's inflexible labour markets, high taxes and an aging workforce. But polls show more and more people believe the cause lies in worldwide trade and investment. This undermines the kind of leadership needed to respond to the Asian financial crisis and deal with other global problems.

The fourth challenge of globalization is to solve the problems complicated by expanded trade and investment – environmental degradation, diseases, migration, crime and terrorism. The world's ability to confront this set of new, post-Cold War challenges will require greater global cooperation.

There is no doubt that globalization of trade and investment has in some ways weakened the independence of national governments and made life less predictable for many individuals. But those who would erect barriers to trade and investment to try to recapture an earlier era of independence confuse the cause and effect of globalization. In pursuit of higher living standards a new world of global markets and instant communication has been created to deliver gains in efficiency and competition that are beyond the powers of national governments. The goal is not to disenfranchise the individual, but to lower costs, to broaden choices, deliver more capital and open more markets, giving the individual more chances to control his or her destiny.

The challenges raised by globalization yield no easy answers. They lessen the ability of national governments to confront them independently. Collective consideration, in the form of a world summit and ongoing consultative process, will be a crucial confidence-building effort.

Notes

whirlwind – вихрь; ураган
overnight – быстро; вдруг, неожиданно
overwhelmingly – очень, чрезвычайно; в подавляющем большинстве случаев
induce – вызывать; стимулировать; убеждать, побуждать,

склонять, заставлять
stunning – ошеломляющий, оглушающий
coincidence – совпадение; случайное стечение обстоятельств
foremost – передовой; самый главный, выдающийся
challenge – сложная задача, проблема; вызов
inherent – присущий, неотъемлемый; прирождённый
poll – опрос, голосование
undermine – разрушать, подрывать
disenfranchise – лишать гражданских прав
destiny – судьба, удел
yield – приносить, давать, производить
crucial – решающий; критический

I. *Read the text and answer the following questions*
1. What has started the debate over globalization? 2. Have globalization's effects been good or bad? 3. How much have foreign investors poured into developing economies for the last decade? 4. What wave does world trade induce? 5. How do this trade and investment influence living standards in some countries? 6. In what countries has globalization made life more difficult? 7. Do fruits of globalization extend to all countries? 8. What are expanding markets in developing countries needed to ensure? 9. What is the second challenge of globalization? 10. What is the influence of international competition on living standards? 11. What causes do stagnant wages in the USA and unemployment in Europe have? 12. What set of new, post-Cold War challenges will require greater global cooperation? 13. Why has a new world of global markets and instant communication been created? 14. What is the goal of globalization?

Text B: Personnel Management

I. *Read the text* ***"Personnel Management"*** *and answer the following questions*
1. What are the prime objectives of the Personnel Department? 2. What needs to be done after staff have been appointed? 3. How is the Personnel Department involved in the payment of wages and salaries? 4. How does the law protect the employee? 5. What do you think might be included in an induction program? 6. What problems would you expect if an off job training program was to be arranged? 7. What do you think would be the purpose of interviewing candidates for a job? 8. Why should the Personnel Department be concerned about the employees' attitude to work? 9. How do you think grievances should be dealt with?

Personnel Management

The Personnel Department is concerned with the provision and maintenance of a workforce. There are two dimensions to the task. The first is to ensure that employees are available in the right numbers, at the right time and with the necessary skills for the jobs that need to be done. This is the dimension of quantity. The second dimension relates to the quality of the workforce and is evidenced by the workers' enthusiasm and motivation. Highly motivated workers will be more productive.

The personnel function in an organization has many facets. There will have to be contact with line and departmental managers to ascertain staffing requirements. Applicants for jobs will need to be interviewed and recommendations made for appointments. Procedures will need to be developed for upgradings and promotions as well as selection.

After staff have been appointed induction programs will need to be organized so that the new recruits can fit in as efficient members of the team as soon as possible. Further training may be necessary, either in the firm (on-job) or at college (off-job). Such programs need to be arranged to fit in with the normal work schedules.

The whole framework of pay is obviously of concern to personnel, including salary scales, overtime and bonus payments where appropriate. The calculations are complicated somewhat by flexible working hours which give staff the opportunity to choose their own attendance times within certain limits. There is generally a core time during which all staff are expected to be present.

The Personnel Department has an overall responsibility for carrying out the policies of the Board of Directors in relation to staffing, but is also expected to help in the formulation of that policy. A vital area of involvement would be the negotiations with trade unions and the shop stewards, listening to grievances and attempting to cope with them, but also attempting to anticipate them. The Department should be concerned with all matters of welfare, from lighting and heating through to safety and personal hygiene.

No matter how automated production becomes, the roles of people are central in every business. The most expensive equipment is ineffective in the hands of careless or disgruntled workers and the Personnel Department carries the main responsibility for ensuring that morale is high in the organization.

Notes

workforce – рабочая сила   induction program – программа трудоустройства
grievance – жалоба   framework of pay – система оплаты
negotiations – переговоры

PART IV.   Speech Exercises

I. Pair work
1. Imagine you are speaking with your former school mates, convince them in the correctness of your professional choice.
2. Interview your friend and ask him why he made a decision to be an economist.
3. You are choosing your major among economic courses. You get a lot of advice from the faculty graduates. Whose advice will you follow? Why?
4. Interview your American friend, who is a young manager in the IBM Corporation about his education, career opportunities and his responsibilities.

II. Develop the following situations
1. Both graduate and undergraduate students work in the laboratories of the Faculty of Economics to supplement (дополнить) their theoretical knowledge with practical training. What laboratory would you like to work in? What equipment is necessary for a modern laboratory? And how is this laboratory equipped?
2. Mike and Helen are fifth-year students. They do economics at the University and they are having practical training in the laboratory of information processing and are discussing their diploma projects.
3. You are at a meeting of the Students' Scientific Society. Discuss possible effects of recent economic developments on our society. What areas will be the key sectors in the next decade?
4. Your are making a report on how the economic changes of the last decade have revolutionized all our life.

III   Write down a letter to your American friends about your major and career
    opportunities.

*IV.   A delegation of overseas students and teachers is on a visit to your University. You
are asked to tell the guests about your Faculty.*

*V.   Here are some viewpoints on "How to better train specialists". Discuss them. Give
    your arguments for and against. You may use the hints given below.*
    a) Universities should admit more young people with practical experience in the
    related field. Evening and correspondence faculties should be expanded.
    b) The basic principle of a university should be to provide academic training in close
    cooperation with research institutes, design bureaus and industry, banks, insurance
    companies and businesses.
    c) Students should take part in research work performed at the university as it
    provides a broad and solid foundation for professional knowledge.

*VI   Imagine yourself a manager at the Personnel Department. What do you think might
    be included in an induction program?*

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Авторы: Новик Нонна Алексеевна
                 Войтова Инна Владимировна
                 Елисеева Полина Геннадиевна
                 Киселева Вера Павловна
                 Кравченко Маргарита Валентиновна
                 Крутченко Алла Владимировна
                 Лозицкая Елена Ивановна
                 Лягушевич Светлана Ивановна
                 Путрина Татьяна Александровна
                 Сакович Людмила Михайловна
                 Снежко Алина Ивановна
                 Туник Ольга Владимировна
                 Щурок Наталья Владимировна

Методическое пособие по развитию навыков устной речи на английском языке для студентов 1-2 курсов ФКП, ФТК, ФРЭ, ЭФ
В 2-х частях
Часть 2