

Московский государственный технический университет
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ОБУЧЕНИЕ РАЗГОВОРНОЙ РЕЧИ
ПО ПРОФЕССИОНАЛЬНОЙ
И СТРАНОВЕДЧЕСКОЙ ТЕМАТИКЕ

Методические указания

Москва

Издательство МГТУ им. Н.Э. Баумана

2011

УДК 802.0

ББК81.2 Англ-923

Д45

Рецензент *И.Ф. Беликова*

Дикова О.Д.

Д45 Обучение разговорной речи по профессиональной и страноведческой тематике : метод, указания / О.Д. Дикова, А.А. Забровская, Е.А. Рублева. — М.: Изд-во МГТУ им. Н.Э. Баумана, 2011. — 33, [3] с.

Методические указания состоят из пяти уроков. Каждый урок объединен одной тематикой и содержит: терминологический словарь, несколько текстов, первый из которых является основным и подлежит тщательной проработке и анализу, а остальные — дополнительными, предназначенными для ознакомительного чтения; коммуникативные упражнения, направленные на активизацию лексического материала и развитие монологической речи.

Для студентов старших курсов приборостроительных специальностей.

Рекомендовано Учебно-методической комиссией ПУК ФН МГТУ им. Н.Э. Баумана.

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ПРЕДИСЛОВИЕ

Целью методических указаний, предназначенных для студентов старших курсов приборостроительных специальностей, является формирование навыков разговорной речи и подготовка к сдаче устной части экзамена. Методические указания состоят из пяти уроков, каждый из которых соответствует устной теме, включенной в программу экзамена по английскому языку на четвертом курсе. Уроки посвящены профессиональной и страноведческой тематике: Россия и Великобритания, высшее образование в этих странах, специализация факультетов РЛ, ФН и БМТ.

Дадим несколько рекомендаций по работе с методическими указаниями.

Перед чтением основного текста предлагается изучить несколько высказываний известных людей с целью их обсуждения и выражения собственного мнения в форме согласия или несогласия и комментариев, а также обсудить основные вопросы, касающиеся заданной тематики. Этот этап работы способствует введению обучающихся в тему урока и дает предпосылки для ее последующего развития. Затем следует изучить основную лексику, имеющую отношение к тексту, т. е. прочитать и запомнить слова, необходимые для понимания текста, отработать произношение интернациональных слов и усвоить типичные словосочетания, что позволяет развить навыки перевода и говорения. Таким образом, предтекстовая работа дает возможность снять лексические трудности и создать коммуникативную базу для дальнейшей работы.

После прочтения основного текста необходимо оценить и переосмыслить прочитанное, закрепить в памяти слова, не прибегая к переводному методу, и высказаться по теме, используя усвоенную лексику. К такой деятельности позволяют подготовиться задания на контроль понимания прочитанного с помощью обсужде-

ния вопросов, данных после текста, упражнения по подбору определений к словам, выявлению основных идей текста и последующему обобщению их в единое высказывание.

Заключительный этап включает работу над дополнительными текстами с предварительным обсуждением того, что студенты уже знают по данной теме, и подтверждением собственных мыслей в процессе чтения текстов, а также нахождением новой информации, которую в итоге предполагается использовать при обсуждении всей темы урока.

Надеемся, что предлагаемые методические указания дадут возможность студентам осуществлять устное общение и связно высказываться о прочитанном и ранее известном, выражая при этом свое отношение к воспринятой информации.

Unit 1

HIGHER EDUCATION IN RUSSIA. BMSTU

Task 1. What do you think of the following statements? Read and comment.

1. Teachers open the door. You enter yourself (*Chinese proverb*).
2. Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young (*Henry Ford, american automobile engineer and manufacturer*).

Task 2, Discuss the ideas on the topic.

Say what you know about universities and institutes in Russia; what opportunities Russian school-leavers have; how important higher education is in the life of young people; if the role of education in our country and abroad has changed.

Key Vocabulary

meet the needs — удовлетворять требованиям
graduation — окончание вуза
skills — навыки
PhD (*abbr.* Doctor of Philosophy, equivalent to Candidate of Science) — кандидат наук
curriculum — учебный план
Bachelor's degree — степень бакалавра
Master's degree — степень магистра
signatory country — страна, подписавшая договор
to take a commitment — взять обязательство
appropriate — соответствующий
a two-level pattern — двухуровневая система
competitiveness — конкурентоспособность
result in — иметь следствием

Task 3. Read the following word-combinations and explain in English what they mean.

To offer wide-ranging programs; to meet the needs of both Russian and foreign students; skilled labor; thorough professional knowledge; to master and apply skills; to develop the academic abilities; in the field of specialization; to enhance employability; increase competitiveness.

Task 4. Read Text A and answer the questions after it.

Text A. Bauman Moscow State Technical University

Russian universities offer a wide-ranging curriculum that meets the needs of both Russian and foreign students. Its aim is to prepare students for successful careers, enable graduates to work in leading companies all over the world. Graduates of Bauman Moscow State Technical University (BMSTU) receive all-round education and after graduation they continue to develop their academic abilities in their relevant areas.

The mission of BMSTU is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the country and the world in the 21st century. BMSTU is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support of the whole University community.

BMSTU admitted its first students in 1830. The opening marked an effort to establish a new kind of independent educational institution relevant to increasingly industrialized Russia.

At the beginning of the 19th century Russia's developing industry needed skilled labor in many areas. Thus, the aim of Bauman MHTS (Moscow Higher Technical School) was to train qualified specialists with considerable professional knowledge, so that they could master and apply skills in various fields. By 1868 the School achieved good results in chemical and textile industries, metal and wood processing.

In 1930 some faculties branched off from the MHTS and new institutions of higher learning were established on their basis, among them — Moscow Aviation Institute, Moscow Power Engineering Institute, the Military Chemical Academy, the Textile Institute and Moscow Civil Engineering Institute.

In 1989 the MHTS got a new name: Bauman Moscow State Technical University.

Today BMSTU is a well-known educational institution. Teaching and research — with relevance to the practical world as a guiding principle — continue to be its primary purpose. Its 18 faculties encompass numerous academic departments, divisions, and degree-granting programs, as well as interdisciplinary centers and laboratories.

The 18 faculties provide effective teaching according to diverse academic syllabuses. The faculties include Fundamental Sciences; Radioelectronics and Laser Technologies; Biomedical Engineering; Informatics and Control Systems; Engineering Business and Management; Materials and Technology; Special Machinery; Robotics and Complex Automation; Power Engineering and others.

BMSTU training programs combine the experience of both Russian and international scientific schools to satisfy the current demands of modern science. BMSTU offers various training programs leading to scientific degrees, thus attracting students from other countries.

In September 2003 Russia signed the Bologna Declaration. It is a commitment freely taken by each of 29 signatory countries to reform its own higher education system in order to meet the demands of educational standards. The goal of this document is to enhance employability and mobility of citizens and to increase the international competitiveness. Now in accordance with this declaration a two-level pattern has been developed, and students can be awarded the degrees of Bachelor and Master.

BMSTU is committed to providing students with strong scientific and technical foundation, and to encouraging them to develop creativity in defining problems and seeking solutions. For the Bachelor of Science degree, students must complete a core requirement that includes studying chemistry, biology, physics, and calculus, as well as laboratory work. For the Bachelor degree students must complete a four-year course, which results in Bachelor's diploma.

Currently two types of diplomas are officially recognized as ones of completed higher education. They are a diploma of a Specialist and a diploma of a Master. Both degrees enable graduates to start research and write a dissertation.

It is common knowledge that a person having higher education can contribute more to further accomplishments in the field of his or her

professional activity. Higher education gives a person unlimited prospects for professional progress.

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Task 5. Answer the questions to the text.

1. What is the aim of the curriculum in most Russian universities? 2. When did BMSTU admit its first students? 3. What was the aim of training at MHTS in the 19th century? Why? 4. What results did Bauman MHTS achieve by 1868? 5. What branches appeared in 1930? 6. What name did MHTS get in 1989? 7. What faculties are there at your university? What faculty are you studying at? 8. What do you know about the Bologna Declaration? What is its goal? 9. What degrees can students at BMSTU be awarded? 10. What is your opinion about the importance of getting higher education for young people in Russia? Do you think its role in modern society is decreasing? Why (not)?

Task 6. Match the words and their definitions:

| | |
|---------------------|---|
| 1) degree | a) the ability to do something well |
| 2) career | b) make or become better |
| 3) skill | c) a person who holds a first degree |
| 4) labor force | d) something known by most people |
| 5) a graduate | e) a person who holds a second or further degree |
| 6) to improve | f) an occupation undertaken for a significant period of a person's life and with opportunities for progress |
| 7) Bachelor | g) an academic rank conferred by a university |
| 8) Master | h) a person who has successfully completed a course of study or training |
| 9) common knowledge | i) all the members of a particular organization or population who are able to work |

Task 7. Compose a plan to the text.

Task 8. Discuss the ideas about the faculties at BMSTU and say: what year you are in; what faculty you are studying at; what you know about your faculty and your major; why you chose it; if it was difficult for you to enter this faculty, why (not); how your program differs from the program in the first two years.

Task 9. Read about the faculties and compare the information with the ideas you expressed.

Text B. The Faculty of Fundamental Sciences

The faculty is an important generator of knowledge. It provides each of its undergraduates with an understanding of the basic mathematics and physics, and the teaching staff are devoted to doing this well.

The students are provided with the very best introduction to their chosen field, as well as the opportunity to participate in forefront research. On the other hand education in applied mathematics prepares one for many careers. Some graduate students pursue distinguished careers in research and education. However, others enjoy equally satisfying careers in business, industry, and government. Many combine their PhD degrees in applied mathematics with medical, law, or business degrees and are well prepared to make creative contributions to the modern world.

Established in 1964, the Faculty of Fundamental Sciences has always provided an integrated approach to the training of students combining theoretical subjects with research done by students under the guidance of the teaching staff.

The curriculum includes a wide variety of subjects that could be useful for future graduates. Students master algebra, analyses, the theory of differential equations, higher mathematics, strength of materials, instrument design.

Graduates of the faculty can apply their knowledge working in various fields, as their skills are always demanded.

1145

Text C. The Faculty of Radioelectronics and Laser Technologies

Everything is changing, and the people making these changes are engineers: they make things, and they make things better. The collective challenges are of global character. Improved systems and tools for generating energy, protecting the fragile environment, and protecting people from disease have the potential to improve the life of people. By welcoming a wide range of knowledge, experience, and expertise under a single intellectual roof, the teachers, researchers, and students of the RL faculty attack and solve various problems.

Founded in 1929, the "RL" faculty has a proud history of being involved in the technical community of the country through technological leadership and research innovation. Its task is to train highly-qualified specialists in the fields of Optoelectronics, Applied Optics, Radioelectronics. The course provides students both with the knowledge of general engineering subjects basic to all engineering professions and with the knowledge of specialized subjects.

All senior students master such subjects as elements of machines, fundamentals of electronics, radio engineering, informatics, theory of optoelectronic systems.

Students take an active part in research in various areas of science. They develop new technologies which are applied in different spheres of industry. "RL" faculty is a distinguished faculty due to its profound academic programs, cutting-edge research and a longstanding commitment to modern technical development.

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Text D. The Faculty of Biomedical Engineering

Advances in basic biology at the molecular and cellular levels during recent decades have dramatically increased the knowledge about biological systems. It is widely agreed that a crucial challenge for the coming decades is how to integrate information from the genomic level to higher levels of system organization, for both fundamental scientific understanding and development of innovative biotechnologies. Thus, a new discipline of biomedical engineering is emerging. It is directed toward analysis of biological systems and synthesis of technologies that

can modify and control such systems for global benefit across many, diverse areas including human and environmental health.

The research at the faculty focuses on the use of the tools and methods of engineering to better understand human physiology and disease, and the development of new technologies for diagnosis, treatment, and prevention of human disease.

The faculty trains specialists who will work in cooperation with medical staff to diagnose an illness accurately and quickly and to improve the quality of patients' treatment by means of modern medical appliances.

Besides a number of fundamental subjects, students master radio-electronics in order to be able to model a signal, amplify it and transform it from analog into digital form. They also study biomechanics and electrode methods of current carrying. Medical subjects like biology, physiology, therapeutics, morbid anatomy are also included into the curriculum.

Biomedical engineering is rapidly developing in Russia and there is a great demand for medical appliances on the world market. Biomedical engineers who graduated from BMSTU have lots of ideas concerning design of new devices for all branches of medical research and their further application in hospitals.

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Task 10. Summarize the information and speak about your faculty.

Unit 2

HIGHER EDUCATION IN GREAT BRITAIN

Task 1. Comment on the following statements.

1. Science and art belong to the whole world, and before them vanish the barriers of nationality (*Goethe*). 2. Men learn while they teach (*Seneca*).

Task 2 Discuss the ideas on the topic.

Say what you know about universities in Great Britain, the system of education, etc.

Task 3. Make as many verb/noun collocations as possible.

| | | |
|--|---------------|-----------------|
| To get; to graduate; to take; to revise; to go; to make; to do; to pass; to fail | | |
| a mistake | a course | an exam |
| a degree | progress | from university |
| to lectures | some research | notes |
| good marks | to class | a subject |

Key Vocabulary

diverse — различный, разнообразный
admission — допущение, принятие
competitive — конкурсный (экзамен)
comparatively — сравнительно; относительно
to refer to — говорить, упоминать, называть
an effort — попытка
remote — отдаленный; непохожий
to matriculate — принять (или быть принятым) в высшее учебное заведение
a scholarship — стипендия
tutorial system — университетская система обучения под контролем наставника
rival — соперник
varsity — спортивная команда, выступающая за честь университета
a chapel — часовня
hood — капюшон (надевается поверх мантии)
gown — мантия

Task 4. Translate the following word combinations.

To award degrees; to determine the admission policy; to make efforts; to sit an entrance exam; to offer a unique learning experience.

Task 5. Read Text A and answer the questions after it.

Text A. Higher Education in Great Britain. Oxbridge

Higher education in Britain is traditionally associated with universities, though education of University standard is also given in

other institutions such as colleges and institutes of higher education, which have the power to award their own degrees. Higher education institutions are diverse, ranging in size, mission and history. All major higher institutions are autonomous bodies and each determines its own admission policy and requirements. Entry is competitive and specific requirements are set for each course. British universities are comparatively small, about 7-8 thousand students. Most universities have fewer than 3000 students, some even less than 1500 ones.

The main and the oldest universities are Cambridge and Oxford, being established in the mid 12th century. The universities are informally referred to as Oxbridge. Although efforts are being made to attract more students from state schools, many of the 14000 undergraduates at each university have been educated at public school¹. The upper class have traditionally sent their children to Oxbridge, although to many people Oxford and Cambridge seem very remote places where only the very privileged can go.

Students at Oxford and Cambridge can be accepted at one of the self-governing colleges. Each college has its own teaching and research staff, called fellows, and its own buildings, including a dining hall, a library, a chapel, and rooms for students to live in during the term. Until the 1970s colleges were single-sex, but now almost all are mixed.

The tutorial is at the core of undergraduate teaching and learning at both universities. It offers students a unique learning experience in which they meet regularly with their tutor, either on a one-to-one basis or with one or two other students. Undergraduates attend, on average, one hour-long tutorial every week and undertake considerable preparatory work for each tutorial, including background reading, essay-writing and problem-solving. Students also go to lectures that are arranged by the university and open to all students.

Undergraduates at Oxbridge study for a BA (Bachelor of Arts) or BS (Bachelor of Science) degree, but after a period of time graduates can convert their Bachelor degree to Master degree. There are usually three possible degrees for postgraduates: MA (Master of

¹ A public school is a private school that provides secondary education which parents have to pay for. The pupils often live at the school during the school term.

Arts) or MS (Master of Science) usually one year; MPhil (Master of Philosophy) usually two years; PhD (Doctor of Philosophy) at least three years.

At Oxford students sometimes have to wear gowns, e.g. when they go to see college principal. When they take examinations or go to a degree ceremony they have to wear academic dress, which consists of a black suit or skirt, black shoes, a white shirt or blouse and a black tie. On top they wear their gown and a black hat with a flat, square top and, when they graduate, a hood that shows their status. At Cambridge students only have to wear gowns when they matriculate and at graduation.

The two universities are academic rivals, and rivals also in debating and sport. The Boat Race, held each year around Easter, attracts national attention. Rugby and cricket teams play against each other in varsity matches, as well as against professional sides.

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Task 6. Answer the following questions.

1. Where can British school-leavers get higher education? 2. What are the general features of higher education institutions? 3. How are Oxford and Cambridge referred to informally? 4. What kind of children do usually matriculate into these universities? 5. What requirements are set for the entry? 6. What facilities does each college have? 7. What system is at the core of teaching and learning? 8. What degrees do undergraduates and postgraduates study for? 9. How are students at Oxbridge dressed? 10. What sport events take place at the universities?

Task 7. Match the words and their definitions.

| | |
|------------------|--|
| 1) undergraduate | a) a member of university staff responsible for the teaching of a certain number of students |
| 2) research | b) a person who has been awarded a first degree from a university or college |
| 3) postgraduate | c) a period of intensive tuition given by a tutor to an individual student or to a small group of students |

The continuation of the table

| | |
|-------------|---|
| 4) tutor | d) a student who has not received a bachelor's degree |
| 5) graduate | e) a student who is taking advanced work after graduation from a university |
| 6) tutorial | f) systematic investigation to collect information on a subject |

Task 8. Speak about: the organization of the university; the tutorial system of education; wide range of graduate courses.

Task 9. Compare the educational system of Great Britain and that of Russia. Speak about their advantages and disadvantages.

Task 10. Read the following text and answer the questions.

1. What are the requirements to enter the Open University? 2. What is the main feature of teaching in this university?

Text B. The Open University

The Open University (The OU) is a distance learning university. It was established in 1969. There are no previous qualifications required to study. You have to be aged 16 or over when your course starts but there is no upper age limit. The Open University is open to people, places, methods and ideas.

With more than 180,000 students enrolled, it is the largest academic institution in the UK by student number. The OU provides university education to those wishing to continue higher education on a part-time and/or distance learning basis. The University is also popular with those who cannot physically attend a traditional university because they are disabled, abroad, in prison, serving in the armed forces, or looking after family members.

The Open University's style of teaching is called 'supported open learning', also known as 'distance learning'. Open learning means that you will be learning in your own time by reading course material, working on course activities, including written and audio materials, the Internet, disc-based software and television programs on DVD.

Supported means support from a tutor who provides feedback on students' work and are generally available to them at face-to-face tutorials, by telephone, and/or on the Internet. The OU offers a large number of undergraduate qualifications, including certificates, diplomas, and Bachelors degrees, based on both level and quantity of study.

1203

Unit 3

THE RUSSIAN FEDERATION. MOSCOW

Task 1. Discusses the ideas on the topic.

Say what you know about our country; what facts about its history you remember; what cities or towns you've visited, how they differ; what city or town you were born in; what places in Russia and Moscow you'd recommend to visit and why.

Key Vocabulary

stretch — простираться
vibrant — живой, энергичный
a brief spell — короткий период
distinct — отчетливый, явный
low density — низкая плотность
unevenly spread — неравномерно распространён
cluster — (зд.) собираться
a federal entity — объект федерации
to split the power — разделять власть
consecutive terms — последовательно текущие сроки
a legislative bill — законодательный акт
to resolve issues of citizenship — решать вопросы гражданства
state decorations — государственный награды
to grant pardons — даровать помилование
legislature — законодательная власть
judicial power — юридическая власть
executive power — исполнительная власть
a chamber — палата
to vest the power — наделять властью

to lag behind — отставать, запаздывать
to launch a programme — запустить программу

Task 2. Read the following word combinations and say what they mean.

A time zone; to puzzle; the total area; to take up an immense space; to spend a lifetime; to unveil the mystery; never-ending forests; on a grand scale; mountain chains; to vary dramatically; inland areas; throughout the country; a blend of cultures; the most diverse society, an urban breed; be made up of; to enjoy the autonomy; the armed forces; the commander-in-chief; to veto a bill; to award state decorations; a major weapon exporter.

Task 3. Read Text A and answer the questions after it.

Text A. The Russian Federation

Stretching over 11 time zones — from the Baltic Sea in the West to the Pacific Ocean in the East and from the Arctic Ocean in the North to the Black Sea and the Caucasus in the South — and two continents — eastern Europe and Northern Asia, Russia has always puzzled and fascinated. In territory, it is the largest country in the world occupying the total area of about 17 million square kilometres. Taking up an immense space, a home to different nationalities and cultures, it's often called a bridge between the East and the West.

A foreigner can spend a lifetime exploring it without ever unveiling all its mysteries. It's a country of snow-covered plains and sizzling seaside, never-ending forests and high peaks, vibrant cities and forlorn villages. Everything's on a grand scale. The Russian Federation is located on two plains, Great Russian Plain and West Siberian Lowland. The longest mountain chains are the Urals, separating Europe from Asia, the Caucasus, the Altai. Russia's most important rivers are the Volga, Europe's biggest river, the Ob, the Lena, the Yenisei, the Amur. The world's deepest lake — Lake Baikal, with the depth of 1600 metres, is situated in Russia, too.

Russia's climate varies dramatically, from the deep Arctic chill of the far north to the searing desert heat of some inland areas further south. Yet, throughout much of the country there are only two distinct

seasons — winter and summer. Spring and autumn are only brief spells of change in between.

A blend of cultures and religions, Russia has one of the world's most diverse societies — as many as 160 ethnic groups live here. The population of about 142 million may look like a lot but its density is low because of the country's vast size. It's also very unevenly spread, with most people clustered in European Russia, near the Ural Mountains and in southwest Siberia.

Most Russians are an urban breed — three-quarters of them live in cities. The two major ones are the capital Moscow with more than 10 million people, and St. Petersburg with more than four million.

Russia is made up of 84 federal entities. Some of them are called republics, others are regions and there are also autonomies. They all have equal representation in the Russian parliament but differ in the degree of autonomy they enjoy. Their administrative heads are often referred to as "governors", although their official titles vary — several republics have presidents. Moscow and St. Petersburg are federal cities and function as separate regions.

The Constitution adopted by national referendum on December 12 1993 states that Russia is a federal presidential republic. The executive power is split between the President and the Prime Minister, but the President is the dominant figure. The President is the head of the state and is elected by popular vote every six years for a maximum of two consecutive terms. The President's working residence is in the Moscow Kremlin. The President determines the basic domestic and foreign policy, is the commander-in-chief of the armed forces, can veto legislative bills, resolves issues of citizenship of the Russian Federation, awards state decorations and grants pardons. The legislature is represented by the Federal Assembly of Russia. It has two chambers: the State Duma — the lower house, and the Federation Council — the upper house. The judicial power is vested in courts and administered by the Ministry of Justice.

The economic development has been uneven throughout the country, and while the Moscow region booms, the rest, especially rural areas, lags far behind. Poverty has declined steadily and the middle class has grown. So has the number of Russia's super-rich. Russia emerged as the world's leading natural gas exporter and the second largest oil producer after Saudi Arabia. The bulk of Russia's

manufacturing base dates back to the Soviet era. The country inherited most of the USSR's defence industry, making it one of the world's major weapons exporters. The country is now pushing to diversify its economy, develop small business and invest in human capital. The government launched a multi-billion investment program in nanotechnology and started an ambitious social scheme to boost the sectors of housing, agriculture, healthcare and education.

Currently Russia is rapidly reforming. Russian citizens have positive vision for the future. The democratic reforms carried out now in Russia are aimed at long-term projects and developments in scientific, economic, cultural and political spheres. Russia is paving its own way to democracy and prosperity.

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Task 4. Answer the questions to the text.

1. What territory does Russia occupy? 2. Why do you think it is called a bridge between the East and the West? 3. How does the landscape vary? 4. What important water reservoirs can you name? 5. What is the population of Russia? How is it spread? 6. What is the administrative division in Russia? 7. What is the political system like? 8. What power is vested in the President? 9. What is the industrial role of the country in the world? 10. What is your opinion of Russia investing in human capital? 11. What do you think is the new place in the world Russia is going to take?

Task 5. Match the words and their definitions.

| | |
|----------------------|--|
| 1) to fascinate | a) receive or be left with something from a former owner |
| 2) to decline | b) choose to follow an idea or action |
| 3) to occupy | c) form a distinction or boundary |
| 4) to separate | d) a person having power and influence over others |
| 5) to inherit | e) fill or take up (a space) |
| 6) a dominant figure | f) become smaller |
| 7) to adopt | g) attract the strong attention and interest |

Task 6. Speak about: the territory the Russian Federation occupies; the landscapes of our country; climatic variety; people living in Russia; administration and political system; economic development in recent years.

Task 7. Do the quiz and find out how much you know about the capital city Moscow.

1. When did Moscow become the capital of Russia? a) in the 14th century; b) in the 16th century; c) in the 18th century. 2. What is the oldest square in Moscow? a) Red Square; b) Sobornaya Square; c) Staraya Square. 3. Who was the first Russian tsar to be crowned in the Uspensky cathedral in Moscow? a) Dmitry Donskoy; b) Peter the Great; c) Ivan the Terrible. 4. What is the biggest square in Moscow? a) Red Square; b) Mayakovsky Square; c) Pushkin Square. 5. What is the longest street in Moscow? a) Leninsky Avenue; b) Profsoyuznaya street; c) Kutuzovsky Avenue. 6. What is the widest street in Moscow? a) Leninsky Avenue; b) Profsoyuznaya street; c) Kutuzovsky Avenue. 7. What is the shortest street in Moscow? a) Lenivka; b) Solyansky tupik; c) Venetziyanov street. 8. Which of these is the tallest? a) the Eiffel Tower in Paris; b) the Empire State Building in New York; c) the Ostankino TV Tower in Moscow. 9. When did the first street lamps appear in Moscow? a) 1730; b) 1812; c) 1905. 10. When was Moscow University, the first university in Russia, founded? a) 1710 b) 1755 c) 1770.

See answers at the end of the unit.

Task 8. Read the text and find out more facts about Moscow.

Text B. Moscow

Moscow is the capital and the largest city of Russia, its major political, economic, cultural, religious, financial, educational, and transportation centre. It is a city where every stone breathes history. It was founded in 1147 by the Prince of Suzdal, Yury Dolgoruky. The wise founder, he built the city in the middle of a densely populated country where it is protected by rivers and a fortress. Moscow stands on seven hills, the principal of which is the Borovitsky, the hill where the Kremlin stands.

Moscow's early architecture was simple, as the larger part of the city was occupied by wooden houses, though fortress walls, bridges, cathedrals were of brick and white stone. Large-scale stone

construction was performed during the reign of Catherine the Great when the first-class foreign architects were invited to build a number of architectural monuments in Western style. Some of them have survived to our days. As the time passed, the city's boundaries expanded considerably and new districts on the outskirts of the city appeared.

A major feature of Moscow's present development is the establishment of the industries requiring highly-skilled labour, as well as the development of new technologies and know-how. Alongside industrial development much attention is paid by the city administration to the construction of cultural, educational institutions and sport facilities.

In recent years the population of Moscow reached more than 10 million and it is still growing. An increasing number of people are moving to the capital in the hope of having a better life. This results in several big problems every megacity is suffering from. Transport problem is the priority. According to some experts, Moscow can get stuck in several years due to incredible traffic jams. Although the total amount of the roads is constantly increasing, the permanent need for new ways of solving the problem is urgent.

Moscow today is an enormous city whose infrastructure is traditional for every megapolis with first-rate hotels, restaurants, theatres, exhibition halls, shopping malls and gigantic transport arteries. But in spirit Moscow remains its old self, open, hospitable and festive, and, consequently, has the right, as ever, to be called the heart of Russia.

1907

Task 9. Summarize the information and talk about Moscow.

Answers to Moscow Quiz: 1 — b; 2 — b; 3 — c; 4 — a; 5 — b; 6 — a; 7 — c; 8 — c; 9 — a; 10 — b.

Unit 4 GREAT BRITAIN

Task 1. Do the quiz and find out how much you know about Great Britain.

1. The capital of Northern Ireland is a) Dublin; b) Cardiff; c) Belfast. 2. The British flag is often called a) the Union Jack; b) the Stars and Stripes; c) the Maple Leaf. 3. Ben Nevis is a) a famous

footballer; b) a sort of whiskey; c) a mountain. 4. The national currency of the UK is a) the euro; b) the dollar; c) the pound. 5. The most popular sport in Britain is a) ice hockey; b) baseball; c) football. 6. Britain's national drink is a) tea; b) Coca-Cola; c) coffee. 7. The mysterious Loch Ness Monster is from a) Wales; b) Ireland; c) Scotland. 8. The famous British newspaper which is printed on pink paper is a) The times; b) The Guardian; c) The Financial Times. 9. The Beatles started their career in a) London; b) Liverpool; c) Birmingham. 10. The kilt is a) a shirt; b) a skirt; c) a pair of trousers.

See answers at the end of the unit.

Key Vocabulary

attitude — отношение

to deter — удерживать, отпугивать

identity — (зд.) отличительная черта

medieval — средневековый

extend — простираться, тянуться

antiquity — древности, древние артефакты

enormous — громадный, обширный

heritage — наследие

Task 2. Read the following words and pay attention to their pronunciation.

London, AD (*Anno Domini*); Julius Caesar; William the Conqueror, St. (*Saint*) Paul's cathedral; Piccadilly Circus; Gainsborough; The Severn; Birmingham; Liverpool; monarchy.

Task 3. Read the texts and answer the questions after them:

Text A. Great Britain. London

The British Isles are a group of islands, the largest being Britain, which includes the countries of England, Wales and Scotland. The island of Ireland is divided between Northern Ireland, which is part of the United Kingdom, and the Republic of Ireland.

Being an island has affected Britain's history and the British people's attitude to the rest of Europe. The sea is a barrier which has deterred

invaders and kept Britain apart from the rest of Europe. British people still have an island mentality: they are used to being independent, separate and on the edge of things, and in general they like this.

The British Isles are separated from European continent by the North Sea and the English Channel. The western coast of Great Britain is washed by the Atlantic Ocean and the Irish Sea.

The area of the United Kingdom is 244,100 square kilometres. The northern and western part of the country is mountainous and is called the Highlands. All the rest are a vast plain, which is called the Lowlands. There are a lot of rivers, but they are not very long. The Severn is the longest river, while the Thames is the deepest and the most important one.

The United Kingdom consists of four nations, England, Wales, Scotland and Northern Ireland, each with its own special character. Welsh and Scottish people feel their national identity very strongly, and value their cultural heritage. In Wales The Welsh language is used alongside English, and in Scotland over 75 000 people speak Gaelic.

The United Kingdom is one of six constitutional monarchies within the European Community and this institution dates back in Britain to the Saxon king Egbert. Since the age of absolute monarchy there has been a gradual decline in the Sovereign's power and, while formally still the head of the executive and the judiciary, commander-in chief of all the armed forces, and the temporal governor of the Church of England, nowadays monarchs reign but they do not rule.

In the UK it is the Parliament that is responsible for making laws and discussing major issues affecting the country. The three parts of Parliament, the sovereign, the House of Lords and the House of Commons, meet together only on special occasions. Although the agreement of all the three is required for laws to be passed, that of the king or the queen is now given without question, and the House of Commons has gained supremacy over the House of Lords.

The flag of the United Kingdom, known as the Union Jack, is made up of three crosses. The upright red is the cross of St. George, the patron saint of England. The white diagonal cross (with the arms going into the corners) is the cross of St. Andrew, the patron saint of Scotland. The diagonal cross is the cross of St. Patrick, the patron saint of Ireland. The Union Jack is most often seen flying from public buildings or at sports events.

The largest cities of the UK are London, Birmingham, Glasgow, Liverpool, Bristol, Leeds, Cardiff

London is the capital of the United Kingdom and one of the biggest cities of the world. It's economic, political and cultural center of the country with the population of about 9 million people. It was founded by the Romans as Londinium in the 1st century AD.

There are different areas in London. They are like different cities. The oldest part of London is called the City. It's London's commercial and business centre. It contains the Bank of England, the Stock Exchange and the main offices of numerous companies and corporations. The City has also many historic buildings: one of them is the Tower of London. It was founded by Julius Caesar and rebuilt by William the Conqueror. The Tower was used as a fortress, a royal residence and a prison. Now it's a museum with a collection of medieval armor. The other is St. Paul's cathedral, the greatest of English churches. In one of its towers hangs one of the largest bells of the world, Great Paul.

Another important area of London, where most of the government buildings are located, is Westminster. Among its places of interest are Westminster Abbey, where monarchs, statesmen, poets, writers, scientists have been buried; Houses of Parliament with its famous Big Ben. This is where the House of Lords and the House of Commons meet.

To the west of the City are the fine shops and theatres of the area known as the West End. Oxford Street with its great department stores is the favorite street for shopping. The theatre land is stretched (extended or concentrated) around Piccadilly Circus. Not far from it one can see the British Museum with antiquities from India, Greece, China, Egypt, Rome, etc. The British Library is a part of the museum. In the West End there are beautiful parks too. The largest and most famous of all London's parks is the Hyde Park. The National Gallery located on Trafalgar Square contains an enormous collection of European paintings including works by Da Vinci, Rembrandt, Gainsborough and Van Gogh. Around the corner is the National Portrait Gallery.

The last of London's functional zones is the East End, where mostly working people live. A lot of docks, workshops, plants are concentrated here. London's port is the third biggest port in the world.

4294

Task 4. Answer the questions to the texts.

1. Where is the UK situated? 2. What and how has affected British history and national character? 3. What are the geographical features of this country? 4. How is GB ruled? 5. What do you know about the flag of the United Kingdom? 6. When was London founded? 7. What are the areas of London? How can you characterize each of them? 8. What historic buildings of the City can you name? 9. How was the Tower of London used? 10. Where are the great department stores concentrated? 11. Where can you find the theatre land? 12. What is the most famous park of London? 13. What can you say about the National Gallery and the National portrait Gallery? 14. Is the East End an important area of London? Why?

Task 5. Match the words and their definitions.

| | |
|-----------------|--|
| 1) collection | a) extremely large |
| 2) patron saint | b) to divide something into different parts |
| 3) antiquity | c) a piece of land completely surrounded by water |
| 4) capital | d) an area of land beside a sea |
| 5) to separate | e) a building that Christians go to in order to worship |
| 6) vast | f) works of art that are kept together, for example in a museum |
| 7) medieval | g) a large flat area of land |
| 8) island | h) the protecting or guiding saint of a person or place |
| 9) church | i) the city where a country has its government |
| 10) coast | j) an object or building that existed in ancient times and still exists |
| 11) plain | k) relating to the period of European history between about the year 1000 AD and the year 1500 |

Task 6. Read the text and tell about Buckingham Palace.

Text B. Buckingham Palace

Buckingham House was built for John, first Duke of Buckingham, between 1702 and 1705. It has served as the official London residence of Britain's sovereigns since 1837. The Palace is very much a working building and the centrepiece of Britain's constitutional monarchy. It houses

the offices of those who support the day-to-day activities and duties of The Queen and The Duke of Edinburgh and their immediate family. Although in use for the many official events and receptions held by The Queen, the State Rooms at Buckingham Palace are open to visitors every year.

Buckingham Palace has 775 rooms. These include 19 State rooms, 52 Royal and guest bedrooms, 188 staff bedrooms, 92 offices and 78 bathrooms. In measurements, the building is 108 metres long across the front, 120 metres deep (including the central quadrangle) and 24 metres high. Buckingham Palace is furnished and decorated with priceless works of art that form part of the Royal Collection, one of the major art collections in the world today. But it is not an art gallery and nor is it a museum. More than 50,000 people visit the Palace each year as guests to banquets, lunches, dinners, receptions and the Royal Garden Parties.

At 36.6 m long, 18 m wide and 13.5 m high, the Ballroom is the largest multi-purpose room in Buckingham Palace. It was opened in 1856 with a ball to celebrate the end of the Crimean War. Today, it is used by The Queen for State banquets and other formal occasions such as the annual Diplomatic Reception attended by 1,500 guests.

The State Dining Room is one of the principal State Rooms on the West side of the Palace. Many distinguished people have dined in this room including the 24 holders of the Order of Merit as well as presidents and prime ministers.

The ceremony of the Changing of the Guard that takes place daily at eleven o'clock in the morning provokes most interest among tourists. Every day a large crowd of people gather to see this famous and traditional ceremony.

1639

Answers to Great Britain: 1 — c; 2 — a; 3 — c; 4 — c; 5 — c; 6 — a; 7 — c; 8 — c; 9 — b; 10 — b.

Unit 5 MY SPECIALITY

Task 1. Revise the information about your faculty. Say, what you know about the department you are studying at and read the text about it.

Key Vocabulary

to carry out research — проводить исследование
expertise — человеческий опыт, знание дела; квалификация
implementation — выполнение, реализация
to take for granted — считать само собой разумеющимся
to make contribution — внести вклад
precise measurements — точные измерения
to put emphasis on — придавать особе значение чему-либо
state-of-the-art technologies — современные технологии
profound knowledge — глубокие знания
global issues — проблемы мирового значения

"Applied Mathematics"

The Applied Mathematics Department provides students with mathematical background and trains engineers-mathematicians. Applied mathematics equips a future engineer with the most state-of-the-art tool: an ability to learn and improve the world by means of mathematical modeling and calculating.

Students get profound knowledge of higher mathematics, modern methods of implementing the most important calculating algorithms, learn general engineering subjects and applied aerospace engineering. Specialized subjects include calculating methods, optimization methods, operations research, equations of mathematical physics, fundamentals of mathematical modeling, theory of relativity and mathematical statistics, mathematical theory of physical-mechanical processes, mathematical modeling of aerospace systems, etc.

Senior students can take a course in financial mathematics. They have their practical training, where they carry out research using personal computers and mastering programming language when solving certain engineering problems.

Graduates possess universal knowledge and can easily apply it to any area of science and technology.

1000

"Physics"

Physics is the study of the fundamental laws of nature. Applied physics uses these laws to understand phenomena that have practical applications. Engineering in turn makes use of these phenomena forming a link between the fundamental laws of nature and their applications. Students majoring in this department take courses in both physics and engineering.

Undergraduates of all faculties at BMSTU have a general course of physics in the 2-4 terms, which includes physical mechanics, oscillations and waves, molecular physics and thermodynamics, electromagnetism and optics, quantum and nuclear physics. The department actively encourages undergraduates to participate in faculty research or in their own independent projects. The research in the department deals with such global issues as space, time, matter and energy in all its forms, from the subatomic to the cosmological and from the elementary to the complex.

High level of scientific and methodological research carried out within the department under the guidance of distinguished scientists will definitely encourage the increasing number of young researchers, postgraduates and undergraduates to participate in developing the scientific base of the department.

1046

"Radioelectronic Systems and Devices"

This is one of the leading departments of BMSTU. It carries out high quality research activities over a broad range of topics covering radioelectronic systems and devices. The graduates of the department are creative persons, well-equipped for the twenty-first century.

The department boasts expertise in the field of radio electronics. Radioelectronics as a branch of science and technology has become widespread and its achievements are used in different spheres of human activity. They are advanced digital transmission techniques, error correction coding, adaptive transmission systems, 3G mobile systems, smart antennas, multimedia applications for mobile systems, positioning systems, wireless mobile communication.

The curriculum of the department is being constantly improved. It involves different aspects at various levels from theoretical studies,

design, modeling, to development and implementation of advanced digital hardware and software systems.

The department provides high quality training which prepares students for further study and research in radio-electronic engineering and for a wide range of career opportunities in industry and commerce. It plays a vital role in scientific research both in Russia and abroad.

1065

"Lasers and Optoelectronic Systems"

As you know engineers develop new approaches, combine them with existing ones, and turn them into products and services to meet the needs of the world and improve it. Many things that are taken for granted nowadays have been created by engineers. The department makes significant contributions to the advancement of engineering science while teaching the next generation who will go on to influence the way our world will develop. The department focuses on two majors: "Optoelectronic devices and systems" and "Laser devices and technology".

The department uses innovative teaching and learning methods. The students are involved in all aspects of research and design of modern optoelectronic and laser systems, and in understanding and applying the fundamental principles of new electronic, laser and optical devices.

The curriculum includes both general and specialized subjects, such as maths, informatics, applied optics, applied mechanics, laser physics, theory of optical systems, nonlinear optics, optical measurement, quantum electronics, etc. Students start their major in the third year according to an individual degree program.

The department provides graduates with the skills and confidence and makes them prepared to carrying out research in optoelectronic and laser systems.

1101

"Research Optoelectronic devices"

The Department of "Research Optoelectronic devices" offers courses in the field of optoelectronic devices and systems. Being a magnificent generator of new knowledge it helps to find answers to

global questions about the structure of the Universe and the place of a human being in it. Optics has made an inestimable contribution in solving these problems owing to various optical instruments such as telescopes, which have widened the abilities of a human eye and helped investigate the space.

The devices in which optical signals are converted into electrical ones are referred to as optoelectronic devices. At present it is almost impossible to imagine scientific and technological advance without them, as they are widely used in precise measurements, in examining the structure of substances, investigating various processes, in night-vision systems, navigation, in astronomical, astrophysical, environmental research.

Within the curriculum students carry out research in various fields, such as: methods of design of multipurpose sophisticated optical systems (lenses, mirrors, photo objectives, visual and photometric medical optical devices, etc); technologies of fabricating aspheric and gradient elements; methods of quality control of optical elements and surfaces.

1094

"Design and Technologies of Radioelectronic Devices"

The department focuses on two majors — "Nanotechnologies of radioelectronic devices" and "Quality assurance and certification of radioelectronic devices".

Creation and successful implementation of competitive radioelectronic devices and radiotechnical systems result from interrelated work at all stages of the product lifecycle from marketing, scientific research, circuit analyses and design to production and operation. One of the essential features of scientific and technical progress nowadays is an emphasis on engineering nanotechnology, as the priority in this field of knowledge ensures advanced position in the world market, determining the best achievements in the field of radio engineering.

There is a range of challenges a student of the department is supposed to face. They are: designing, producing and operating systems of radio communication, detection and ranging, navigation and control of mobile devices of the land, naval, aviation and space bases; developing new technologies of radio-electronic devices production in combination with achievements in nanotechnologies; information technologies and automation of designing radio-electronic devices.

The department trains specialists who will be able to work in the field of developing radio-electronic devices, systems using nanomaterials, methods of nanodiagnostics for navigation, energetics, medicine, research, examination of technological systems, ecological control of natural resources and other fields of engineering. Another emphasis is put on training the specialists who will be able to work in the field of quality assurance when designing and producing radio-electronic devices, and also in organizations included into the system of certification of the Russian Federation; graduates will be able to deal with marketing and management problems.

The curriculum includes both general and specialized subjects, such as: electrical engineering, electronics and microelectronics, fundamentals of designing radio-electronic devices, instrument making techniques, integral devices of radio-engineering, antennas and microwave devices and others.

1840

"Biotechnical and Medical Devices and Systems"

The department was founded after a long period of work in the field of education and medical research and has two related goals: first, the use of the tools and methods of engineering to better understand human physiology and disease; second, the development of new technologies for diagnosis, treatment, and prevention of human disease.

The scientific base of the department comprises: biophysics, which determines fundamental principles of functioning live organisms; theory of bioengineering systems, which describes technical and biological sub-systems; methods of bio-signals measurement and analyses.

The main feature of studying is its interdisciplinary nature; along with general fundamental subjects undergraduates study a number of subjects such as biology, biochemistry, anatomy, pathology, physiology and clinical medicine — which are necessary for profound knowledge of medico-biological processes. Seminars are conducted on the basis of Moscow Medical Academy named after I.M. Sechenov.

Students of the department address a lot of complicated problems by examining state-of-the-art technologies, modern laser, ultrasound, electronic and other medical devices and systems and applying up-to-date methods of design.

Practical training is carried out in leading medico-engineering centres and institutes of Moscow. Graduates are employed in big organizations and institutes, where they develop and research new types of medical devices.

The curriculum also includes individual programs, according to which students can be trained in the field of management in healthcare and biomedical engineering and along with BMSTU diploma they can get a diploma confirming their secondary medical education.

1468

"Medical-technical Information Technologies"

Biomedical Engineering draws on collaboration among engineers, physicians, and scientists to provide new interdisciplinary insights into medical and biological problems. The programs offered in the department seek to emphasize the confluence of basic engineering with the physical and biological sciences.

The department covers various aspects of biomedical engineering. They are medical biotechnical processes and systems, creation of medical-diagnostic technologies using new mathematical, physical and physiological approaches, wide application of computer and communication systems.

The curriculum is based on the main physico-mathematical and engineering subjects and the whole range of medico-biological and medico-technical disciplines. The curriculum is designed to provide broad knowledge of the physical and engineering sciences and their application to the solution of biological and medical problems. As a rule students undertake a research project in their final year. Graduates work in the leading medical centers, hospitals and scientific research institutes, commercial medical services.

The department provides students not only with the academic knowledge related to the chosen qualification.

1051

Task 2. Summarize the information and talk about your speciality.

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Учебное издание

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**ОБУЧЕНИЕ РАЗГОВОРНОЙ РЕЧИ
ПО ПРОФЕССИОНАЛЬНОЙ
И СТРАНОВЕДЧЕСКОЙ ТЕМАТИКЕ**

Корректор *Е.К. Кошелева*
Компьютерная верстка *С. А. Серебряковой*

Подписано в печать 25.04.2011. Формат 60x84/16.
Усл. печ. л. 2,09. Тираж 400 экз. Изд. № 34. Заказ 313

Издательство МГТУ им. Н.Э. Баумана.
Типография МГТУ им. Н.Э. Баумана.
105005, Москва, 2-я Бауманская ул., 5.